



ImageMark Advantage 1.0

Product Information



B004-0000-0245
01.00.00
August 2000

The product described in this book is a licensed product of NCR Corporation. Other brand and product names appearing in this publication are the trademarks or registered trademarks of their respective holders.

ImageMark™ is either a registered trademark or a trademark of NCR Corporation in the United States and/or other countries.

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

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

To maintain the quality of our publications, we need your comments on the accuracy, clarity, organization, and value of this book.

Address correspondence to:

NCR Waterloo
Attention: Usability & Information Engineering
580 Weber Street North
P.O. Box 1611
Waterloo, Ontario, Canada
N2J 4G5

Copyright © 2000
By NCR Corporation
Dayton, Ohio U.S.A.
All Rights Reserved

Contents

Chapter 1
Introduction

Overview: Introduction	1-1
What is ImageMark Advantage?	1-2
Client/Server Components	1-3
Transports and Transport Controllers	1-4
Local Area Networks (LANs)	1-4
How Image-Based Processing Works	1-6
Reducing Operating Costs	1-8
Single Source Solution	1-8
Reduced Keying Labor	1-8
Improved Keying Productivity	1-9
Faster Transaction Balancing	1-9
Increasing Operating Efficiency	1-10
Faster Data Capture	1-10
Reduced Labor Expense	1-11
Reduced Research Expense	1-11
Ease of Use	1-11
Operational Flexibility	1-11
New Products and Enhanced Services	1-12
CD-ROM Delivery	1-12
Image Statements	1-12
Providing Scalability Benefits	1-13
Scalable Processors	1-13
Scalable Transports	1-13
Scalable Workstations	1-13
Combination Servers	1-13
Expanding Your System	1-13
Open-System Benefits	1-14
Industry Standards	1-14
Host Compatibility	1-15
Data Security and Recovery Options	1-16
Standard Data Security and Recovery Features	1-16
Optional Data Security and Recovery Features	1-17
Preparing for ImageMark Advantage	1-18
Equipment Requirements	1-18
Space Requirements	1-18
Installation Requirements	1-18
Base Service	1-19
Optional Services	1-19

Chapter 2
Data Capture and Item Processing

Overview: Data Capture and Item Processing	2-1
Item Processing Workflow	2-2
Preparing Documents	2-8
Capturing Documents	2-10
Recognizing Check and Deposit Slip Amounts	2-12
Completing Document Data	2-13
Amount Entry	2-14
Reject Repair	2-16
Balancing Transactions	2-18
Encoding and Sorting	2-20
Printing Advice Notices	2-22
Generating Reports	2-23
Daily Operations Reports	2-23
End-of-Day Reports	2-24
Archiving Data	2-26
Administering the System	2-27
Managing System Workflow	2-27
Managing System Resources	2-27
Controlling System Access	2-27

Chapter 3
Research, Archive, and Delivery Operations

Overview: Research, Archive, and Delivery Operations	3-1
Research	3-2
Account Inquiry	3-2
Signature Verification	3-4
Scanning	3-4
Verification Process	3-4
CD-ROM Distribution	3-5
CD Format	3-5
CD Generation	3-5
CD Viewing	3-7
Image Statements	3-8
Statement Format	3-8
Statement Generation	3-8
Statement Printing	3-9

Chapter 4
System Components

Overview: System Components	4-1
System Architecture	4-2
Servers	4-3
Image Server	4-4
MICR Server	4-6
Research Server	4-8
Recognition Server	4-10
Capture Transport	4-12
Transport Features	4-12
Capture Transport Controller	4-14

Workstations 4-16
 Workstation Software 4-18
 Local Area Networks (LANs) 4-20
 Ethernet Specifications 4-20
 LAN Hardware 4-20
 LAN Software 4-20

Chapter 5
Training and Services

Overview: Training and Services 5-1
 Professional Services 5-2
 Base Services 5-2
 Optional Services 5-3
 Base Implementation Service 5-4
 Service Description 5-4
 Service Deliverables 5-5
 Benefits 5-5
 Ramp-Up Assistance 5-6
 Service Description 5-6
 Service Deliverables 5-6
 Benefits 5-6
 Recognition Tuning 5-7
 Service Description 5-7
 Service Deliverables 5-7
 Benefits 5-7
 File Migration 5-8
 Service Description 5-8
 Service Deliverables 5-8
 Benefits 5-8
 System Administration Training 5-9
 Service Description 5-9
 Service Deliverables 5-9
 Benefits 5-9
 Project Management 5-10
 Service Description 5-10
 Service Deliverables 5-12
 Benefits 5-12
 Enhanced Training 5-13
 Service Description 5-13
 Service Deliverables 5-14
 Benefits 5-14
 Host Interface 5-15
 Service Description 5-15
 Service Deliverables 5-15
 Benefits 5-15
 Customization 5-16
 Service Description 5-16
 Service Deliverables 5-16
 Benefits 5-16

Document Analysis and Design	5-17
Service Description	5-17
Service Deliverables	5-18
Benefits	5-18
Workspace Planning and Design	5-19
Service Description	5-19
Service Deliverables	5-19
Benefits	5-20
Disaster Recovery	5-21
Service Description	5-21
Service Deliverables	5-21
Benefits	5-23
Professional Services “On-Call”	5-24
Service Description	5-24
Service Deliverables	5-24
Benefits	5-24
Image Planning/Strategy Consulting	5-25
Service Description	5-25
Service Deliverables	5-25
Benefits	5-25
Audit/Tune-Up Consulting	5-26
Service Description	5-26
Service Deliverables	5-26
Benefits	5-26

Revision Record

Document Title

ImageMark Advantage 1.0 Product Information

Revision 01.00.00 (August 2000)

Page No.	Remarks
All	First Printing

Introduction

Overview

Introduction 1-1

What is ImageMark Advantage? 1-2

- Client/Server Components 1-3
 - Servers 1-3
 - Client Workstations 1-4
- Transports and Transport Controllers 1-4
- Local Area Networks (LANs) 1-4
- How Image-Based Processing Works 1-6

Reducing Operating Costs 1-8

- Single Source Solution 1-8
- Reduced Keying Labor 1-8
- Improved Keying Productivity 1-9
- Faster Transaction Balancing 1-9

Increasing Operating Efficiency 1-10

- Faster Data Capture 1-10
- Reduced Labor Expense 1-11
- Reduced Research Expense 1-11
- Ease of Use 1-11
- Operational Flexibility 1-11

New Products and Enhanced Services 1-12

- CD-ROM Delivery 1-12
- Image Statements 1-12

Providing Scalability Benefits 1-13

- Scalable Processors 1-13
- Scalable Transports 1-13
- Scalable Workstations 1-13
- Combination Servers 1-13
- Expanding Your System 1-13

Open-System Benefits	1-14
Industry Standards	1-14
Industry-Standard Processors	1-14
Industry-Standard Operating Systems	1-14
Industry-Standard Communications	1-14
Standards-Compliant Images	1-14
Oracle Relational Database	1-14
Host Compatibility	1-15

Data Security and Recovery Options	1-16
Standard Data Security and Recovery Features	1-16
Mirrored Disk	1-16
Standby Disk	1-16
Uninterruptible Power Supplies	1-16
Tape Backup and Restore Facilities	1-16
Optional Data Security and Recovery Features	1-17
Multi-site Operability	1-17
Dual Purpose Transport	1-17

Preparing for ImageMark Advantage	1-18
Equipment Requirements	1-18
Space Requirements	1-18
Installation Requirements	1-18
Base Service	1-19
Optional Services	1-19

 Overview

Introduction

This book provides an overview of NCR ImageMark Advantage. It tells you what NCR ImageMark Advantage does, the benefits it provides, and how it automates proof and encode processing of over-the-counter work, inclearings, and pre-encoded items. Additionally, ImageMark Advantage automates research, signature verification, customized production of printed or electronic (CD-ROM) statements, and provides a wide array of image delivery products including fax, print, and e-mail delivery.

This book also provides detailed information about the hardware and software components used in ImageMark Advantage and describes the training and services that NCR provides to help you implement ImageMark Advantage in your environment.

 Who This Book is For

This book is intended for decision makers in financial institutions who are considering converting their check processing operations to an image-based system, or who are looking to supplement an existing image-based system with enhanced functionality and capabilities. It is also used by NCR sales specialists.

 Summary of Chapters

This chapter, *Introduction*, introduces you to this book and to the ImageMark Advantage system. It describes the benefits that ImageMark Advantage provides and briefly explains how this system works. This chapter also provides an idea of the system and infrastructure planning required for ImageMark Advantage and the way that ImageMark Advantage can fit into your financial institution's long-term strategy for image-based check processing.

Chapter 2, *Data Capture and Item Processing*, explains in detail how ImageMark Advantage is used to process checks. It explains, in sequence and context, the tasks that operators perform using each ImageMark Advantage client/server software package.

Chapter 3, *Research, Archive, and Delivery Operations*, describes how the Research, Archive, and Delivery components of ImageMark Advantage work.

Chapter 4, *System Components*, describes the ImageMark Advantage hardware and software components of the client/server architecture in detail.

Chapter 5, *Training and Services*, describes the training programs and other services that NCR provides to help your staff make a transition from conventional check processing to ImageMark Advantage.

What is ImageMark Advantage?

NCR's ImageMark Advantage is a scalable, Oracle client/server, Windows NT-based image processing solution that offers a complete suite of core check processing applications, including:

- Image Capture Processing (POD, inclearing, sorting)
- Image Archive/Research Applications

Ancillary applications that complement the core check processing system include:

- Power Encode
- Courtesy Amount Recognition / Legal Amount Recognition
- Image Statements
- CD Delivery
- Signature Verification
- Image Delivery (fax or print)

ImageMark Advantage is a complete, end-to-end image-enabled item processing solution that includes hardware, software, services, and support, and has been developed to utilize the NCR scalable family of transports using the WiselP interface.

ImageMark Advantage allows banks to reduce operating costs, while offering enhanced revenue generating products and solutions that can assist banks in retaining current customers and attracting new ones.

The three core components, Capture, Research/Archive, and Delivery Applications, are built on a common Oracle database structure. Because of this architecture, ImageMark Advantage can be easily integrated and seamlessly updated as new applications are designed and developed, offering a total item processing strategy that provides open, adaptable, system-based solutions.

Under ideal conditions, ImageMark Advantage transports capture images and codeline data from checks and deposit slips at burst rates from 500 to 1825 documents per minute, depending on the transport selected. The images and data are then stored electronically in the Advantage database.

Recognition software automatically recognizes printed and handwritten courtesy amounts and legal amounts on checks and deposit slips.

From this point on, paper handling is reduced drastically. Operators at specialized workstations complete data and balance transactions from the electronic images alone. Most physical documents are handled again only if they have to be encoded or re-sorted.

The following section briefly describes the components that make up ImageMark Advantage. The rest of this chapter explains how image-based technology can provide major cost savings and productivity increases for your organization.

Client/Server Components

To achieve major productivity advances while remaining cost-effective and affordable, ImageMark Advantage uses client/server architecture and distributed processing. Instead of doing all the work on one central processor, ImageMark Advantage distributes tasks among servers and client workstations connected by local area networks (LANs).

Servers

Servers provide common services such as data management and amount recognition. ImageMark Advantage servers are comprised of NCR multiprocessor computers with disk array servers for short-term data and image storage.

The size and type of server hardware required for any given customer configuration is dependent on volume, processing windows, and any unique customer requirements.

In the ImageMark Advantage logical architecture there are four different types of server functions. Each of these functions can be consolidated on different physical servers in varying combinations. The four main server functions include:

- **Image server**
- **MICR server**
- **Research server**
- **Recognition server**

Client Workstations

ImageMark Advantage client workstations are used by operators to process documents. Workstations are NCR personal computers with specialized image item processing peripherals, and run under Microsoft Windows NT.

Workstations may be required for the following functions: balancing, amount keying, research, reject repair, and system administration. The number of workstations for any given configuration is dependent on the customer requirement.

Operators use Power Encoding to encode and sort physical documents once all required processing has been done on their previously captured images.

Transports and Transport Controllers

Transports for ImageMark Advantage are NCR 7780 Item Processing Transports and optionally, 7790/7795 High-Speed Item Processing Transports, depending on customer needs. For more information on transports, refer to the NCR 7780 Item Processing Workstation Product Information Book (B004-0000-0109) or the NCR 7790 and NCR 7795 High-Speed Item-Processing Transports Product Information Book (B004-0000-0013).

Operators also use workstations to control the transport operation, including MICR and image capture, encoding and sorting of documents, and to display check images and codeline data.

Local Area Networks (LANs)

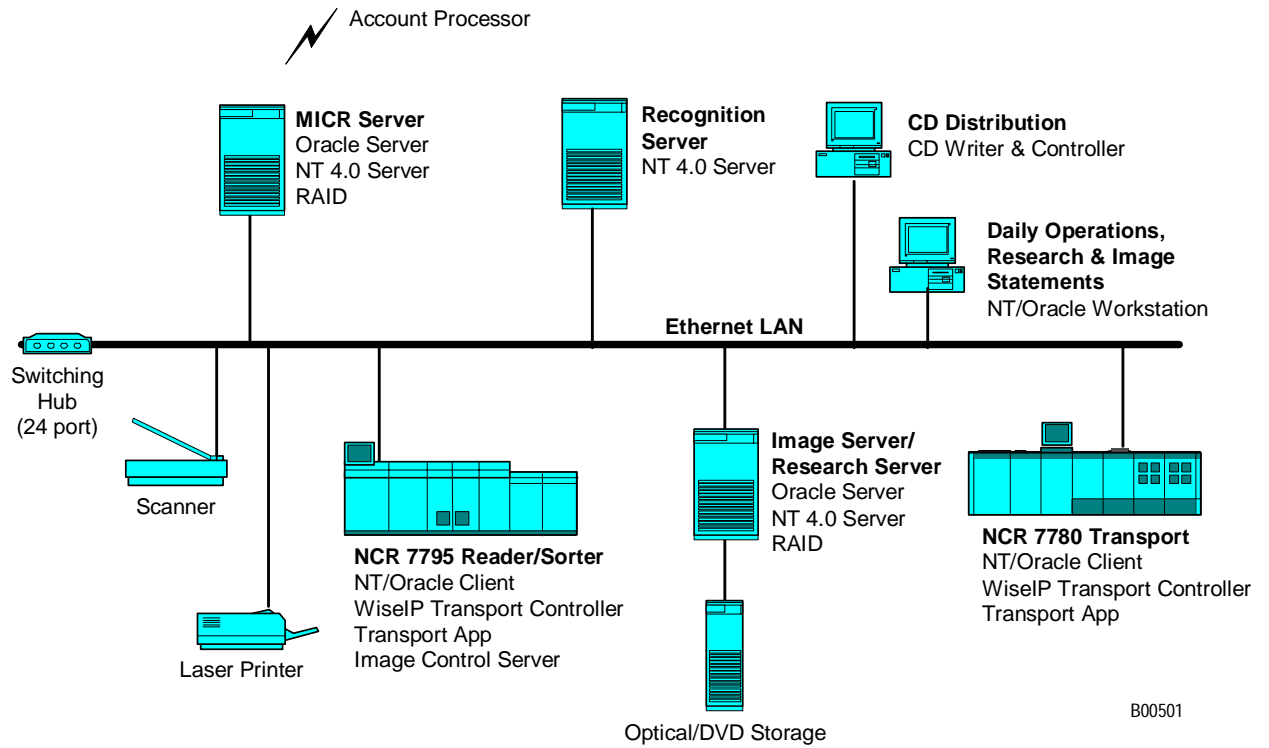
LANs connect all computers—clients and servers—together. These networks let the servers exchange information with, and provide service to, each other.

All of the servers are connected to one another through 100 MB local area networks. These LANs consist of the hardware that physically connects the servers and the software that lets them exchange data, images, and other information. A dedicated LAN also connects the transport controller to the image file server.

The LANs enable users to do the following:

- Share images and other files
- Share resources, such as printers and storage devices
- Increase productivity by obtaining faster access to data

ImageMark Advantage Components



How Image-Based Processing Works

In a conventional, paper-based check processing system, each operator performs all processes on each check on a single-pocket workstation. Throughput is limited by the speed at which the operator can key amounts. When the operator must stop to correct codeline information or balance transactions, amount keying comes to a halt.

In contrast, ImageMark Advantage streamlines proof-and-encode by distributing tasks among specialized servers. The following overview explains the basic concept. For a more detailed description, see Chapter 2, *Data Capture and Item Processing*.

- 1 Document preparation is the first step in ImageMark Advantage operations flow. Any staples or paper clips are removed from the checks and deposit slips. The documents are jogged in preparation for image and codeline capture.
- 2 After preparing the checks and deposit slips for processing, operators capture document images and codelines on capture transports at burst speeds of 500 to 1825 documents per minute (dpm), depending on the transport selected.

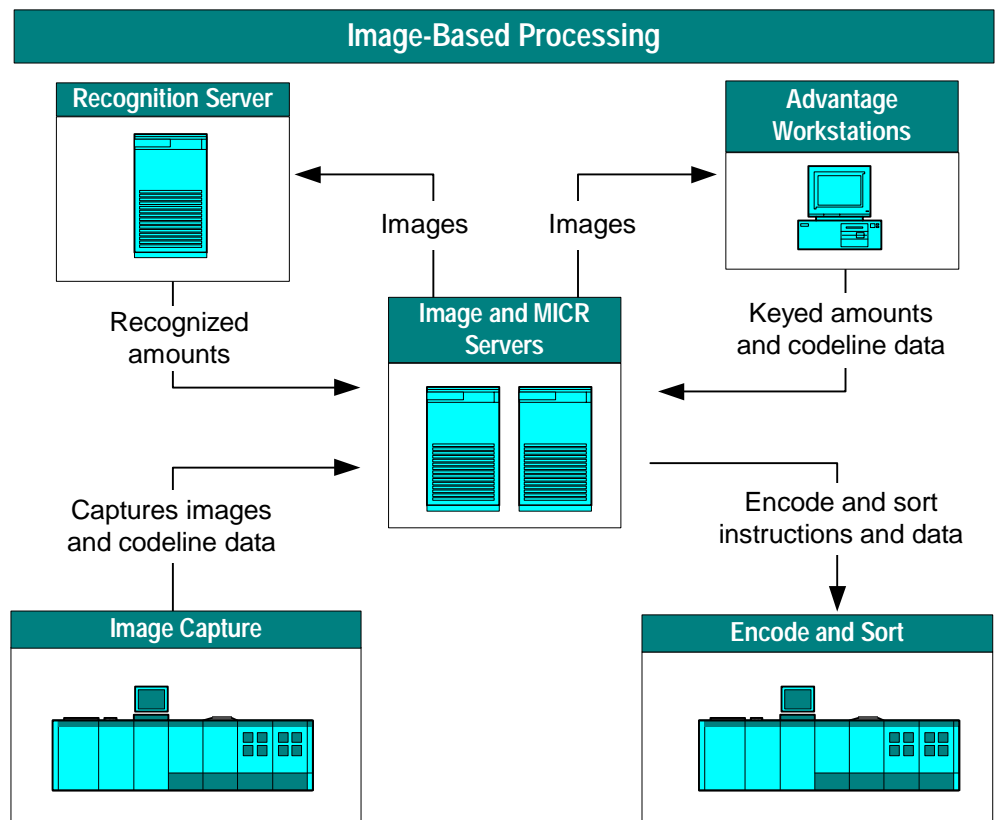
The images and codeline data from each capture transport are sent to the Image server and MICR server respectively, where they are stored.

From this point on, all processing is done using the electronic images and data from the database. The physical documents are not handled again unless they need to be encoded or resorted. Piggyback handling or other special conditions may also occasionally require the operator to work with the paper check.

- 3 Unattended, the recognition software recognizes printed and handwritten courtesy amounts in checks and deposit slips. On personal checks, it also uses the legal amounts to confirm the courtesy amounts. The recognized values are stored in the database, reducing manual keying substantially.
- 4 For checks still requiring amount entry or reject repair, ImageMark Advantage sends images and data to ImageMark Advantage workstations. The operators can perform these tasks much more quickly working from images than working from paper. The keyed amounts and corrected codelines are added to the database.

- 5 If transaction balancing is required, operators do this work on workstations as well. Once again, ImageMark Advantage software greatly streamlines the task, taking full advantage of the Windows-based environment, and the new information is added to the database.
- 6 The document records are now complete. Using these records, software on the ImageMark Advantage system matches codelines on the transport against the database to power encode and sort documents on NCR transports. ■

Image-Based Processing



B00519

Reducing Operating Costs

ImageMark Advantage provides many benefits compared to traditional check processing systems. It reduces labor costs, increases revenue, and increases operator productivity in your over-the-counter check processing operations.

Single Source Solution

ImageMark Advantage is a complete, end-to-end image processing solution that is fully supported by NCR. Because NCR provides all the hardware, software, and services required to implement and maintain the system, your business needs are met in the most cost-effective manner possible.

In addition to the hardware and software, NCR provides:

- Systemedia
- Professional and Customer Services
- Business Continuity/Back-up services
- Ability to combine in-house and outsource solution components

Reduced Keying Labor

ImageMark Advantage software uses artificial intelligence algorithms to recognize handwritten as well as printed courtesy amounts in images of checks and deposit slips. It also uses the legal amounts of checks to confirm the courtesy amounts. Depending on the quality and design of your documents, ImageMark Advantage can substantially reduce manual keying in over-the-counter check processing operations.

Improved Keying Productivity

When manual codeline completion and amount keying are still required for reject repair or other special situations, workstations and software maximize operator productivity. Instead of keying from physical documents, operators work from images displayed on high-resolution screens. The operator's keying rate is thus independent of transport speed. In amount keying operations, the screen can display two checks at a time, thus letting operators "look ahead" just as on a conventional transport.

Faster Transaction Balancing

The ImageMark Advantage intelligent, image-based balancing software speeds up transaction balancing substantially. Running on high-performance computers under MS Windows NT, this software displays images of checks, deposit slips, and other information needed to balance transactions. The software automatically generates information for advice notices.

Increasing Operating Efficiency

By distributing processing tasks among specialized client/server systems, ImageMark Advantage increases the efficiency of your processing operation as a whole.

Faster Data Capture

More data can be captured more quickly. Checks are processed on item processing transports at burst speeds of 500-1800 documents per minute (depending on the transport used), with no manual keying and fewer operators required for the capture operation.

The NCR 7780 is unique in the industry: it has been designed from the start to capture high-quality images of over-the-counter work with maximum reliability and efficiency. The NCR 7780 offers you better price/performance ratios and superior image quality.

The High Performance Hopper of the 7780 has advanced document handling features such as short tape outsort and double feed detect which reduce document jams and speed jam recovery and increase effective throughput. The low cost of the 7780 lets you buy additional units to ensure full redundancy without the excess capacity of a higher-volume transport. And as your business grows, you can add more 7780s in cost-effective increments.

The NCR 7790 and NCR 7795 High-Speed Item-Processing Transports can process documents while online to a remote or resident application server system, or while offline as a stand-alone High-Speed Item-Processing Transport. In addition, its design is operator-oriented. Screen messages indicate to the operator the system status at all times. The optional components of the High-Speed Item-Processing Transport allows your financial institution to configure them to meet the special requirements of your sites.

Reduced Labor Expense

ImageMark Advantage uses advanced imaging and recognition technologies to automate and streamline Proof-of-Deposit and inclearing. This eliminates manual proof labor activities and the costs associated with maintaining proof machines.

Reduced Research Expense

Savings are also achieved through reduced time and labor spent on research activities such as printing and receiving copies of items, researching customer information, and settling cash letter adjustments.

Ease of Use

ImageMark Advantage's graphical user interface provides customers with an intuitive and easy to learn research mechanism. The research tools within the ImageMark Advantage solution are user-friendly and cost-effective. As with the core check processing application, there is a common look and feel, which leads to greater end user productivity and substantial reduction in training time required for new employees. Enhanced operator support is also provided through a comprehensive online help system, graphical icons for common operator tasks, and easy to navigate drop-down menus to control application functions.

Operational Flexibility

Scalable architecture and client/server technology deliver the power and flexibility a financial institution will require to keep pace with its growth. Using the Oracle database for information management lets a bank easily add customers. Future products and hardware can be quickly integrated into the system as well, because NCR uses common components across applications. The NT operating system imparts a common look and feel across the system that equates to less employee training, lower costs, and increased efficiencies.

New Products and Enhanced Services

ImageMark Advantage improves current customer services and allows banks to offer new products, including CD-ROM Delivery and Image Statements. These improvements in products and services attract new customers and strengthen customer loyalty and satisfaction.

CD-ROM Delivery

ImageMark Advantage CD Delivery is a sophisticated and scalable application that allows banks to produce a CD of check images for a customer instead of returning the physical checks. Banks can also create customer reports and statements to accompany the check images. Operator selected customer data, transactions and images are stored on CD-ROM along with the self-executable program for viewing the images. CD Delivery allows users to have access to the check image database for research and check clearing information.

Image Statements

With ImageMark Advantage Image Statements, the financial institution can provide its customers with printed images of their checks along with their account statements, instead of sending the checks themselves. These statements can be customized with bank-specific images and logos.

Image statements help financial institutions distinguish themselves from the competition and show their technological leadership.

Financial institutions can use image statements to generate revenue in several ways:

- By charging a fee for the image statement service.
- By raising the fee for customers who want to continue having physical checks returned to them (negative incentive revenues).
- By charging advertisers to embed marketing messages targeted at a specific demographic group within your customer base.

The ImageMark Advantage Image Statements application cuts the costs of producing statements in two ways:

- It reduces the burden that statement preparation places on your reader/sorter and mainline check processing infrastructure.
- It reduces paper handling and postage costs.

Providing Scalability Benefits

The open, client-server architecture of ImageMark Advantage lets you scale your system to fit and grow with your item processing needs. This same scalability also lets you distribute Advantage operations to regional sites or concentrate them at central sites.

Scalable Processors

All ImageMark Advantage servers and workstations come from the NCR/WorldMark family of scalable, industry-standard processors. With NCR/WorldMark, you can add processing power and peripherals in cost-effective, incremental steps.

Scalable Transports

For capturing document images and data, ImageMark Advantage uses the NCR 7780 and 7790/7795 item processing transports. ImageMark Advantage architecture lets you choose the optimal number of transports for your work volumes and applications. As document volumes grow, you can expand your system capacity in manageable increments.

Scalable Workstations

For completing document data on screen, ImageMark Advantage uses Windows NT-based workstations. Each workstation can be used for codeline completion, amount entry, transaction balancing, or capture reconciliation. This flexibility lets you assign the optimal number of workstations to each of these tasks, in accordance with the composition of your work. If this composition changes, you can easily adjust the number of workstations assigned to each task.

Combination Servers

In certain circumstances, the Image and Research operations can be combined on a single server. For more details, see Chapter 4, *ImageMark Advantage Components*.

Expanding Your System

A typical system has:

- one 100 MB LAN for all the components
- one Image server, one Research server, one MICR server, and one Recognition server
- one transport and 4-5 workstations

More transports, servers, and workstations can be added as customer needs dictate.

Open-System Benefits

To protect your existing investment in item processing, ImageMark Advantage has been designed as an open system based on well defined, widely accepted industry standards.

Industry Standards

All ImageMark Advantage components use industry standard processors, operating systems, and communications. Industry-standard solutions have also been adopted for processing Advantage images and interacting with the Advantage database.

Industry-Standard Processors

All ImageMark Advantage workstations and servers belong to the NCR/WorldMark family, based on high-performance microprocessors with PCI based servers.

Industry-Standard Operating Systems

ImageMark Advantage Servers and Workstations run under Microsoft Windows NT.

Industry-Standard Communications

ImageMark Advantage uses TCP/IP for its local area networks, while providing SNA and TCP/IP WAN communications to host systems.

Standards-Compliant Images

ImageMark Advantage uses the TIFF image file format and industry-standard image-compression algorithms (CCITT G4 (T.6)). That makes it easier to use our images with your other image-based systems in the future.

Oracle Relational Database

Because ImageMark Advantage maintains all codeline data in an Oracle database, each application can extract and reformat data easily using standard SQL queries.

Host Compatibility

ImageMark Advantage protects your existing investment in host check processing software. ImageMark Advantage provides a complete interface to more than 23 standard host interfaces.

For other host environments, NCR can provide professional services to create a reformatter, which can readily extract and reformat this data using Oracle commands because ImageMark Advantage consolidates all codeline data in an Oracle Relational Database.

ImageMark Advantage supports TCP/IP WAN communications to other host systems.

Data Security and Recovery Options

To protect your item-processing system's operation against interruptions, ImageMark Advantage has a range of standard and optional data security and recovery options.

Standard Data Security and Recovery Features

Each ImageMark system has standard data security and recovery features. Mirror and Standby hard disks and uninterruptible power supplies on servers protect your site's operating environment. Reconfigurable subsystems and Redundant Array of Independent Disks (RAID) controllers protect your data.

Mirrored Disk

All database disks are mirrored (two disks) to internal RAID to maximize their availability and protection. The disks are hot-pluggable, which means that if one disk fails in the mirrored pair, the failed disk can be manually removed and replaced while the system continues to run uninterrupted. Also, a failed disk can rebuild from the second disk in the mirrored pair, returning it to its fully mirrored condition. The system can use either RAID 1 or RAID 5, and both configurations can be mirrored.

Standby Disk

The Image server, MICR server, and Research server have available drive bays to configure additional disks as standby disks. If one disk in the mirrored pair fails, the RAID controller automatically switches from the failed drive to the standby drive and initiates a rebuild of the failed disk. This operation puts the system back to its fully mirrored condition.

Uninterruptible Power Supplies

All ImageMark servers have uninterruptible power supplies to prevent data loss in the event of a power failure to the site.

Tape Backup and Restore Facilities

ImageMark Advantage comes with easy-to-use software that enables the system administrator to back up the file systems and Advantage databases to tape. This provides data security in the unlikely event that both hard disks fail on the same subsystem. These backup tapes can be stored both on site for ease of recovery and off site for added security.

Optional Data Security and Recovery Features

For additional security, ImageMark Advantage offers the following options.

Multi-site Operability

If you have ImageMark Advantage systems at more than one site, it is possible to physically move the operations for a processing day from one site to another. Running documents from two sites on one ImageMark system is a complex task. Contact your NCR representative for more information.

Dual Purpose Transport

If you have a fully configured 7780 transport, it can perform capture, power encode, and sorting. This means that if one of these operations becomes backlogged, you can use another transport to reduce the backlog.

Preparing for ImageMark Advantage

Introducing ImageMark Advantage means a fundamental change in the way you process checks and requires considerable planning and preparation. NCR offers a variety of professional services and training programs to help financial institution management and systems staff implement ImageMark Advantage successfully.

Chapter 5, *Training and Services*, describes these programs and services in detail. The following sections give a brief overview of the issues involved.

Equipment Requirements

In planning for ImageMark Advantage, you will have to analyze expected processing volumes in detail. The quantities and kinds of items you will be processing determine how many of each subsystem you need in your ImageMark Advantage network.

Space Requirements

An ImageMark Advantage system can actually take up less floor space than the conventional proof workstations that would be needed to process the same volume of documents.

Installation Requirements

Before installing ImageMark Advantage, you must determine how network cables will be routed, where hubs will be located, and how many devices, such as extenders and repeaters, need to be installed. For detailed instructions on planning network hardware for ImageMark Advantage, your NCR professional services provider can assist in determining your individual needs.

You must also plan the software side of the network (network addresses, node names, and so on) and other installation requirements.

Base Service

To help your staff make the transition to processing efficiently and effectively with an ImageMark Advantage solution, NCR offers ImageMark Advantage Base Service. This implementation package familiarizes your employees with the actual ImageMark Advantage system installed at your site by providing coverage in the following key areas:

- Project Coordination
- Equipment Hot Staging
- Installation
- Training

The Base Service provides:

- capability to increase the bank's revenue with added services
- trained operations and support personnel
- faster, low-risk implementation
- ongoing support infrastructure

Optional Services

To help your organization make a smooth transition to ImageMark Advantage, NCR offers a variety of optional training and professional services, including:

- Ramp-Up Assistance
- Recognition Tuning
- File Migration
- System Administration Training
- Project Management
- Enhanced Training
- Host Interface
- Customization
- Document Analysis and Design
- Workspace Planning and Design
- Disaster Recovery
- Professional Services "On-Call"
- Image Planning/Strategy Consulting
- Audit/Tune-Up Consulting Service

For more information about these and other ImageMark Advantage training and services, see Chapter 5, *Training and Services* in this book.


Chapter 2

Data Capture and Item Processing

Overview

Data Capture and Item Processing 2-1

Item Processing Workflow 2-2

Preparing Documents 2-8

Capturing Documents 2-10

Recognizing Check and Deposit Slip Amounts 2-12

Completing Document Data 2-13

 Amount Entry 2-14

 Reject Repair 2-16

Balancing Transactions 2-18

Encoding and Sorting 2-20

Printing Advice Notices 2-22

Generating Reports 2-23

 Daily Operations Reports 2-23

 End-of-Day Reports 2-24

Archiving Data 2-26

Administering the System	2-27
Managing System Workflow	2-27
Managing System Resources	2-27
Controlling System Access	2-27


Overview

Data Capture and Item Processing

To capture check images and perform data capture, ImageMark Advantage divides the job into several specialized tasks. These tasks are performed using the ImageMark Advantage components described in Chapter 4 of this book, *ImageMark Advantage Components*.

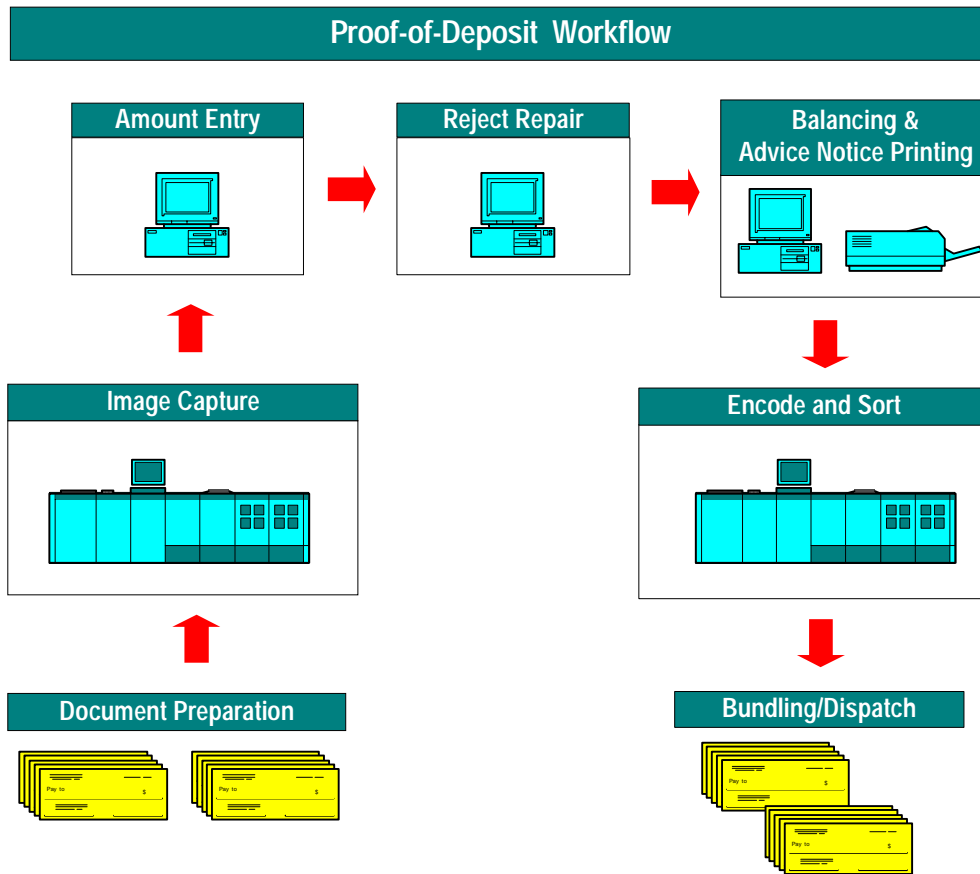
This chapter describes the different types of item processing workflows in ImageMark Advantage, and how each of these tasks is performed at a typical site. It tells what the operators, hardware, and software do to complete each task and how the work flows from one task to the next.

Item Processing Workflow

ImageMark Advantage has three data capture processing workflows:

- proof-of-deposit
- inclearings
- cycle sort

Proof-of-Deposit Processing Workflow

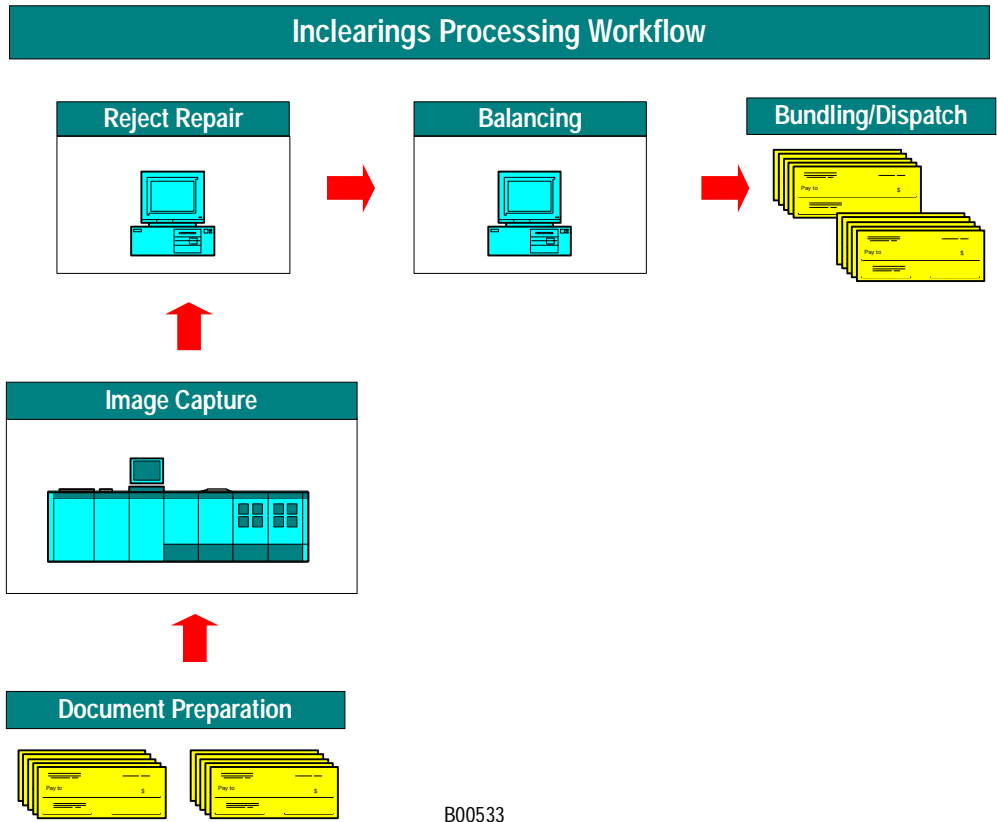


B00518

Proof-of-Deposit processing in ImageMark Advantage involves the following operational steps:

- 1 Physical items are received and prepared for processing at a **Document Preparation** workstation. Operators record the incoming work and groom the documents for subsequent processing.
- 2 Operators use the **Capture** application (in POD processing mode) on the transport to capture document images and codelines and sort physical items into specific pockets depending on item type.
- 3 Operators use the **Amount Entry** application to complete missing amount fields for any items that were not successfully read by the recognition software, keying in the amount and other missing item data as required.
- 4 Operators use the **Reject Repair** application to complete any missing codeline fields for items by keying fields for rejected codelines or missing fields that could not be read during the capture process.
- 5 Operators use the **Balancing** application to correct the document records for any out-of-proof transactions and prepare advice notice statements for printing.
- 6 After all document records have been updated and corrected, operators use the **Encode and Sort** application on the transport for final processing and pocketing. ■

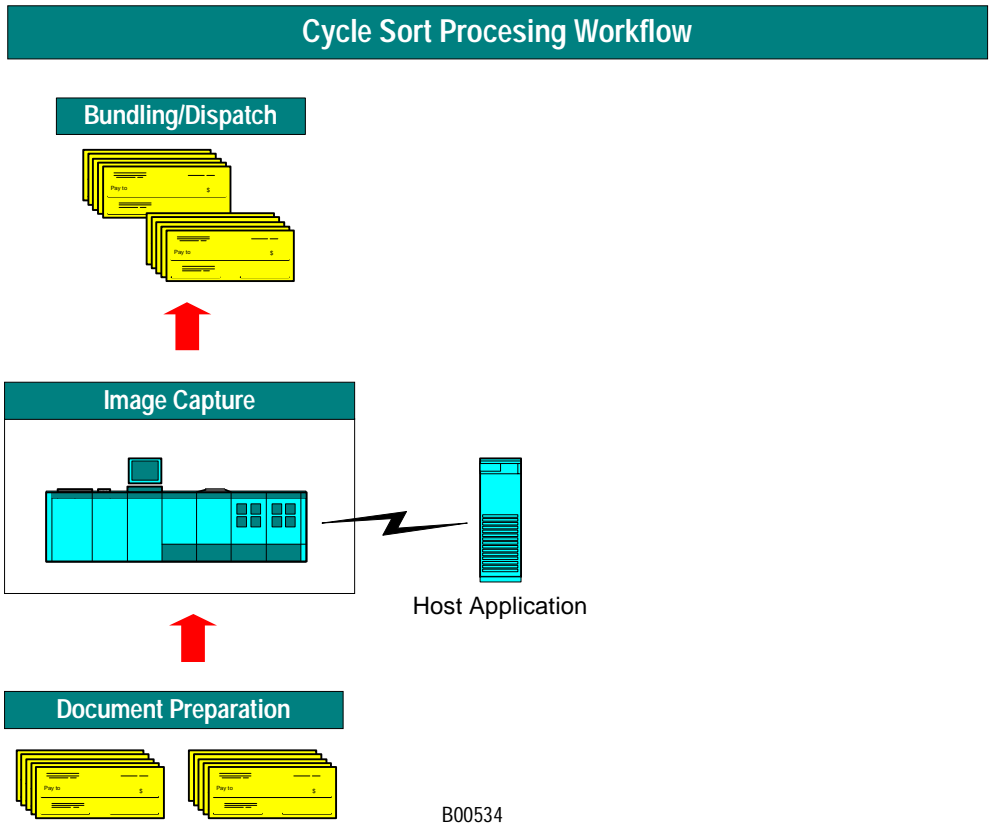
Inclearings Processing Workflow



Inclearings processing in ImageMark Advantage involves the following operational steps:

- 1 Physical items are received and prepared for processing at a **Document Preparation** workstation. Operators record the incoming work and groom the documents for subsequent processing.
- 2 Operators use the **Capture** application (in Inclearings processing mode) on the transport to capture document images and codelines and sort physical items into specific pockets depending on item type.
- 3 Operators use the **Reject Repair** application to complete any missing codeline fields for items by keying fields for rejected codelines or missing fields that could not be read during the capture process.
- 4 Operators use the **Balancing** application to correct the document records for any out-of-proof transactions. ■

Cycle Sort Processing Workflow



Cycle Sort processing in ImageMark Advantage involves the following operational steps:

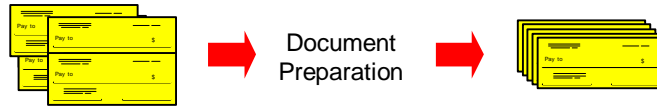
- 1 Operators prepare physical items for processing at a **Document Preparation** workstation.
- 2 Exception Item Pull records are received from the host application.
- 3 Operators use the **Capture** application (in Cycle processing mode) on the transport to process and sort documents into the correct pockets. ■

Preparing Documents

Incoming bundles of documents (typically deposit slips and checks) are taken first to document preparation. The tasks performed here are as follows.

- 1 Operators record the incoming work in their financial institution's receipt and log system, if any.
- 2 The bundles are taken to document preparation stations, where operators separate the adding machine tapes and cash letters from the checks and deposit slips. The operators also groom the documents (remove staples and paper clips, put damaged documents in carriers, and so on).
- 3 Operators organize the checks and deposit slips into blocks or batches of work. ■

Preparing Documents



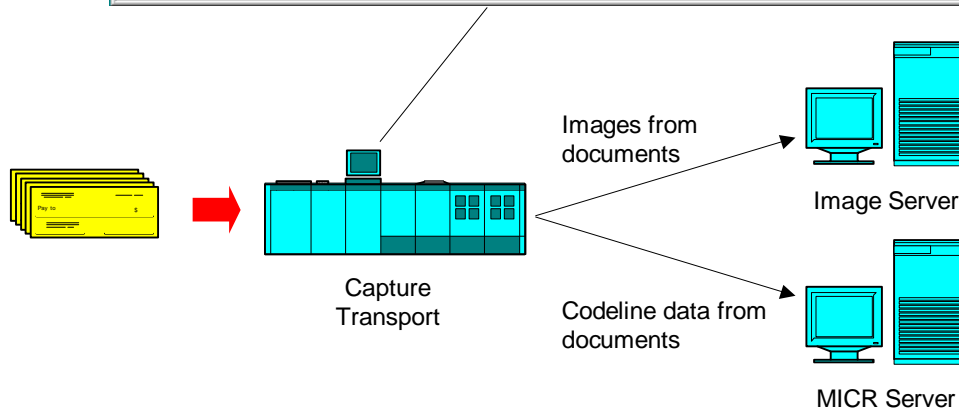
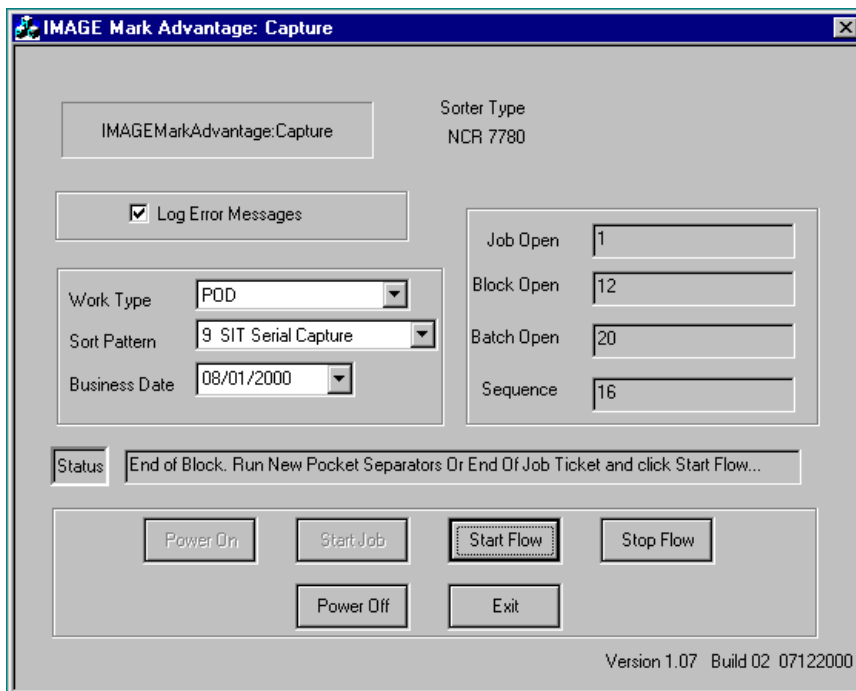
B00530

Capturing Documents

The trays of documents are taken to the transport for capture.

- 1 The operator jogs documents on a jogging machine, then loads them into the hopper on the transport. The operator starts the capture application on the transport.
- 2 As directed by the capture application, the transport moves documents down the track to the image-lift/reader module. The document images and codeline data are captured.
- 3 The transport sends the captured images to the Image server and codeline data to the MICR server.
- 4 The software analyzes the codelines of the documents and determines the type of each document. The codeline data is broken into fields. For each field, it determines whether any codeline data has been read and if there are any missing or reject characters.
 - If no data has been read, the software assigns the document to a reject distribution.
 - If the codeline has been read and does not have any incomplete fields or reject characters, the software determines the document's distribution based on parameters set by the bank.
 - If the codeline has incomplete fields or reject characters, the software assigns the document to a reject distribution.
- 5 Capture finishes processing and updates the document records.
 - Documents with determined distribution are endorsed and pocketed on the transport in accordance with the instructions for each distribution. Image Capture software also gives the distribution number to add to each document record.
 - Documents whose codeline could not be read, or which contained incomplete fields or reject characters, are sent to a reject pocket. The capture software then marks these documents' records for reject repair by an operator at a workstation connected to the Image server.
- 6 The operator removes the documents from the transport and places them in trays. Documents from non-reject pockets may be later encoded and sorted; the reject documents are repaired and processed on a workstation connected to the MICR server. ■

Capturing Document Images and Codeline Data



B00520

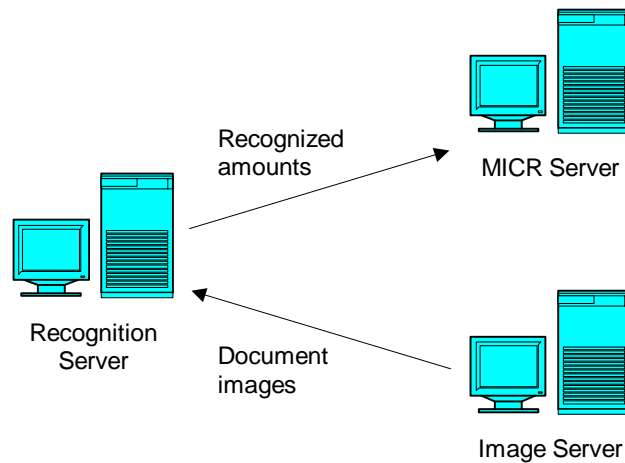
Recognizing Check and Deposit Slip Amounts

After document images and codeline data have been captured, the database contains image and MICR data for each document processed on the transport.

The software now performs the recognition process.

- 1 The images of checks, deposit slips, and cash tickets are passed to the Recognition Server. This server uses advanced recognition algorithms to recognize handwritten and printed amounts on the check and deposit slip images and cash tickets.
- 2 If the amount information is read and the confidence exceeds the predetermined confidence level, the amount is automatically entered into the database and amount entry is not required. ■

Recognizing Check Amounts



B00521

Completing Document Data

After document images and data have been captured and courtesy amounts have been recognized, the document data records are completed by operators at ImageMark workstations.

ImageMark Advantage includes conventional item processing functions such as hot key field replacement. It also includes image processing manipulation, which lets operators rotate, flip, and zoom document images as necessary to read the information they contain. All keying is done from images, which is significantly faster than keying from paper.

The two completion activities performed by ImageMark Advantage operators are:

- Amount Entry
- Reject Repair

Amount Entry

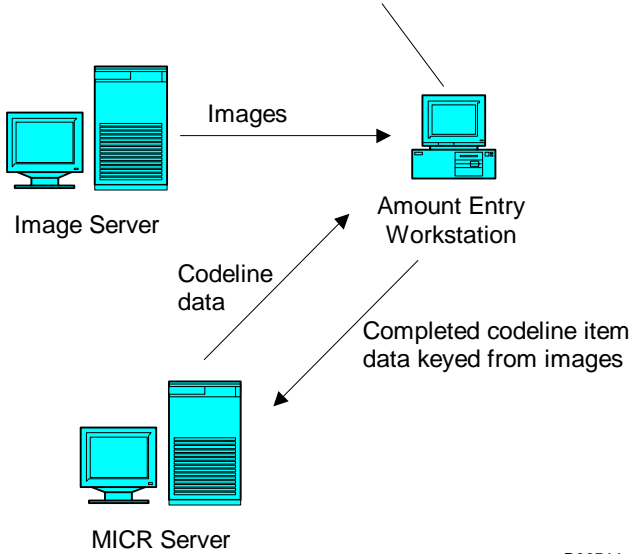
Operators perform amount entry for any items that were not successfully read by the recognition software, keying in the amount and other missing item data as required.

- 1 The operator starts the ImageMark Advantage Amount Entry application.
- 2 Amount Entry displays images and data for checks whose amounts were not recognized or whose amounts are suspected to be incorrect in out-of-balance transactions. The application displays check images two at a time. This feature lets operators “look ahead” just as they do on a conventional transport, and so enhances their productivity.
- 3 The operator reads the amounts in the check images and keys them into the amount item field.
- 4 Once the amount is keyed, Amount Entry sends the corrected amounts back to the MICR server where they are used to update the document records in the database. ■

Note: For normal ImageMark Advantage operations, operators only key the amounts at this point. If, however, you wish to have operators key in other MICR information as well, you can change the keying mode of the application from “Amount Entry” to “Data Entry”.

Entering Amounts

Amount Entry	Reject Repair	Balancing	Batch Corrections	Block Totals
<div style="border: 2px solid red; padding: 5px;"> <p>10 FIRST LAST ADDRESS DATE 1999 049</p> <p>PAY TO THE ORDER OF <u>Sam Honda</u> \$ <u>80.00</u></p> <p><u>Eighty</u> DOLLARS</p> <p>BANK TWO <u>Signature</u></p> <p>⑆ 16 10000751004900175520 ⑈ 0408</p> </div>				
<p>4 FIRST LAST ADDRESS DATE 1999 134</p> <p>PAY TO THE ORDER OF <u>Quik Cleaners</u> \$ <u>11.00</u></p> <p><u>Eleven</u> DOLLARS</p> <p>BANK OF WATERLOO <u>Signature</u></p> <p>⑆ 16 100001710134001160592 ⑈</p>				
<p>Job: Block: 13 Key Block: 0 Mode: <input checked="" type="radio"/> Amount Entry <input type="radio"/> Data Entry</p> <p>Batch: 657 Sort Pattern: 0</p> <p>Item Data: Check# 0408 RT # 161000075 Account # 00175520 Tran Code Amount 80.00</p> <p>Filter: All Items Unsorted <input checked="" type="checkbox"/></p> <p>Image: (F1) Flip (F2) Rotate (F3) Invert (F4) Zoom + (F5) Zoom - (F6) Restore</p> <p>Auto Zoom: <input type="checkbox"/> Zoom to Area Save Zoom Area</p>				



B00516

Reject Repair

A workstation operator performs reject repair by keying fields for rejected codelines or missing fields that could not be read during the capture process. The system sends the following types of items to the pocket reserved for rejects:

- items that the transport could not read
- items that the sort pattern rejects for reasons designated by the user. An example might be that the account number failed check digit verification.

Rejected items must be repaired so that the database will be complete.

- 1 The operator starts the ImageMark Advantage Reject Repair application.
- 2 Reject Repair displays images of the checks whose codelines were rejected in the capture operation. The application also displays whatever codeline information was captured successfully and indicates to the operator which fields still need to be keyed in.
- 3 The operator completes the missing and incomplete fields. The new item data is sent back to the MICR server.
- 4 At the MICR server, the system accepts the operators changes and checks again for missing fields and reject characters.
- 5 Once the codeline is correct and complete, software on the MICR server determines the document distribution and updates the document record in the database. ■

Repairing Rejects

Amount Entry
Reject Repair
Balancing
Batch Corrections
Block Totals

Image

(F1) Flip

(F2) Rotate

(F3) Invert

(F4) Zoom +

(F5) Zoom -

(F6) Restore

Save Zoom

Zoom to Area

FIRST LAST
ADDRESS

DATE 1999 049

PAY TO THE ORDER OF Sam Honda \$ 80.00

Eighty XX DOLLARS

BANK TWO Signature

⑆ 16 1000075 ⑆ 0049 ⑆ 00 1755 20 ⑆ 0408

Block: 4003
Key Block: 4003
Sort Pattern: 402
POD - 7790
Batch: 1951

Batch	Seq #	Serial #	P44	RT #	Account #	TC	Amount	Pkt	Rej
1951	227		0	161000075				9	41
1951	228	8185	0	161000075	3119777			9	41
1951	229		0	161000075	6027890		0.00	9	41
1951	230	00255940	0	161000075	0095492			9	41
1951	231	014215	0	161000075	0014009790			9	41
1951	232	0008063714	0	161000075	20925			9	41
1951	233	4575	0	161000075	1976352			9	41

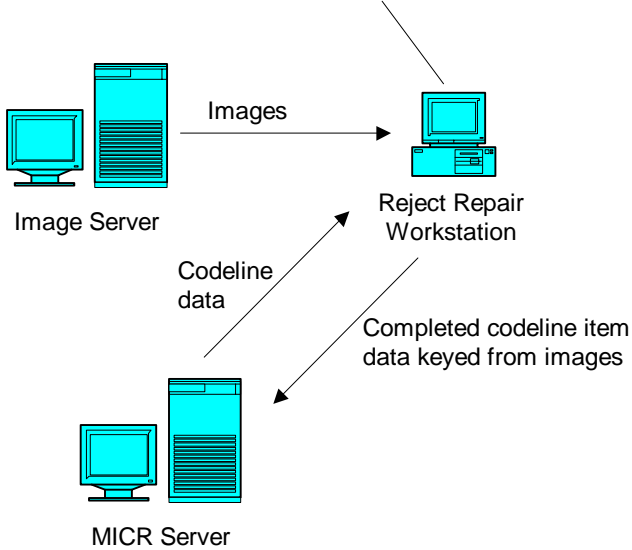
Rejection Reason

REJECT:Missing amount.

Batch Summary

Encoded Batch Amount: .00

Rejects Left: 108



B00517

Balancing Transactions

Once amount entry and reject repair keying are complete, the ImageMark Advantage database contains complete codeline data, including amounts, for every document processed. The next step in document completion is to balance any out-of-proof transactions.

Operators perform this task on workstations, using the ImageMark Advantage Balancing application. This software contains item and image processing functions plus advanced features (like color coded item displays, intelligent balancing, and audio annotations) to help operators identify erroneous amounts and correct the transactions.

- 1 The operator starts the ImageMark Advantage Balancing application, which then lists transactions that are currently out of balance.
- 2 The operator selects one of these transactions, and the system displays images of the associated checks, and deposit slips from the ImageMark Advantage database.
- 3 Using these images, the operator determines the cause of the out-of-balance condition.
- 4 Using the keyboard or mouse, the operator corrects fields or makes the required adjustments. For example, the operator may move an item or insert an adjustment (a “virtual item” to represent a missing physical item) to bring the transaction into balance.
- 5 For each adjustment, the operator identifies the adjustment information, related document images, and customer name and address (from the Research server) for any advice notices that will be required. These advice notices are printed at the end of the day.
- 6 When balancing is completed, updates are added to the document records in the ImageMark Advantage database. Adjustments for teller or customer errors are used to generate printed advice notices. ■

Balancing Transactions

Seq #	Rel	Serial #	P44	RT #	Account #	TC	Amount	Pkt	Rj	C/D
3	0	0	161000075	0998243	96	54.19	1	0	D	
4	0	0	161000075	0000334	96	117.77	1	0	D	
5	0	024543	161000075	0002545	96	117.77	1	0	D	
6	0	0	161000075	0998980	96	122.60	12	0	D	
7	0	7681	161000075	0268052	96	30.26	1	0	D	
8	0	010601	161000075	0002677	96	122.08	1	0	D	
9	0	0323	161000075	0287863	96	40.12	1	0	D	

TXN	Count	Amount		
Credits	0	0.00		
Debits	320	429,887.04		
+ / -		-429,887.04		
Encoded Batch Amount = .00				
BATCH	CRD	Amount	DBT	Amount
Captured	0	0.00	320	429,887.04
Adjusted	0	0.00	0	0.00
Total	0	0.00	320	429,887.04
Difference		0.00		-429,887.04

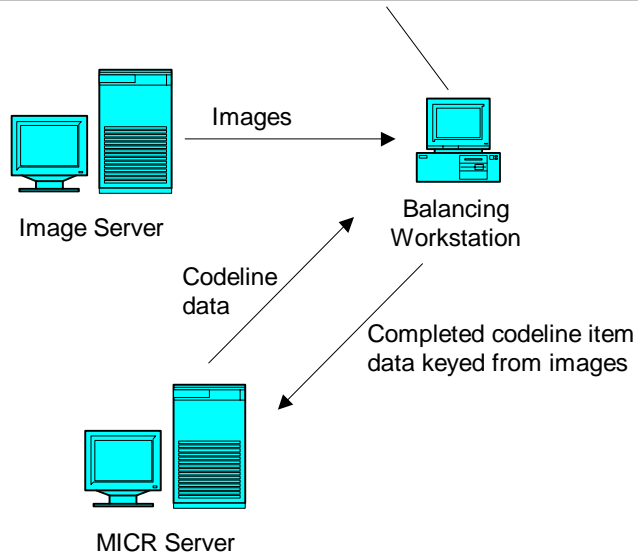
FIRST LAST ADDRESS 049 DATE 1999

PAY TO THE ORDER OF Sam Honda \$ 80.00

Eighty DOLLARS

BANK TWO Signature

⑆ 16 1000075 0049 00 1755 20 ⑈ 0408



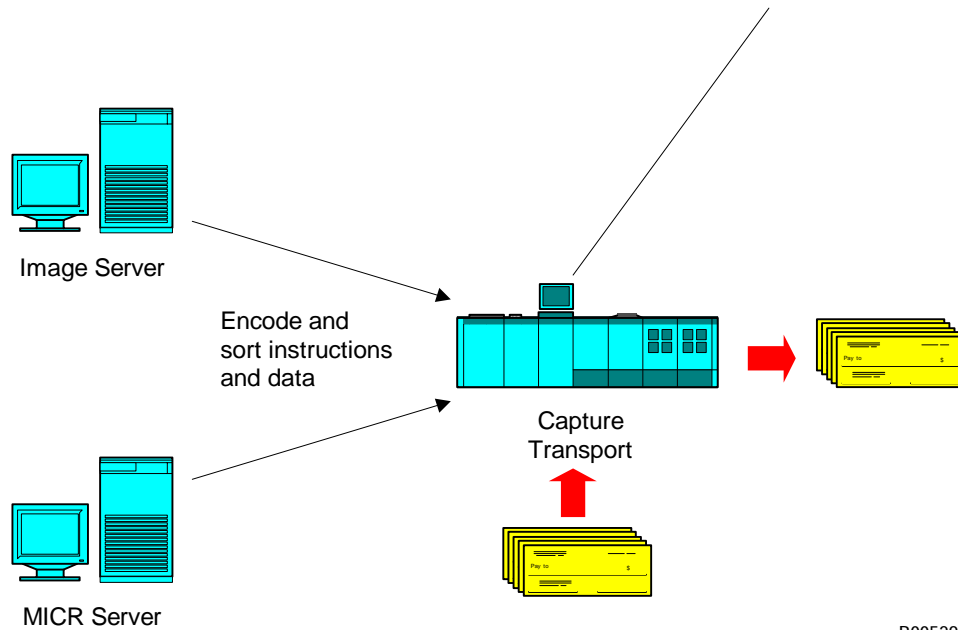
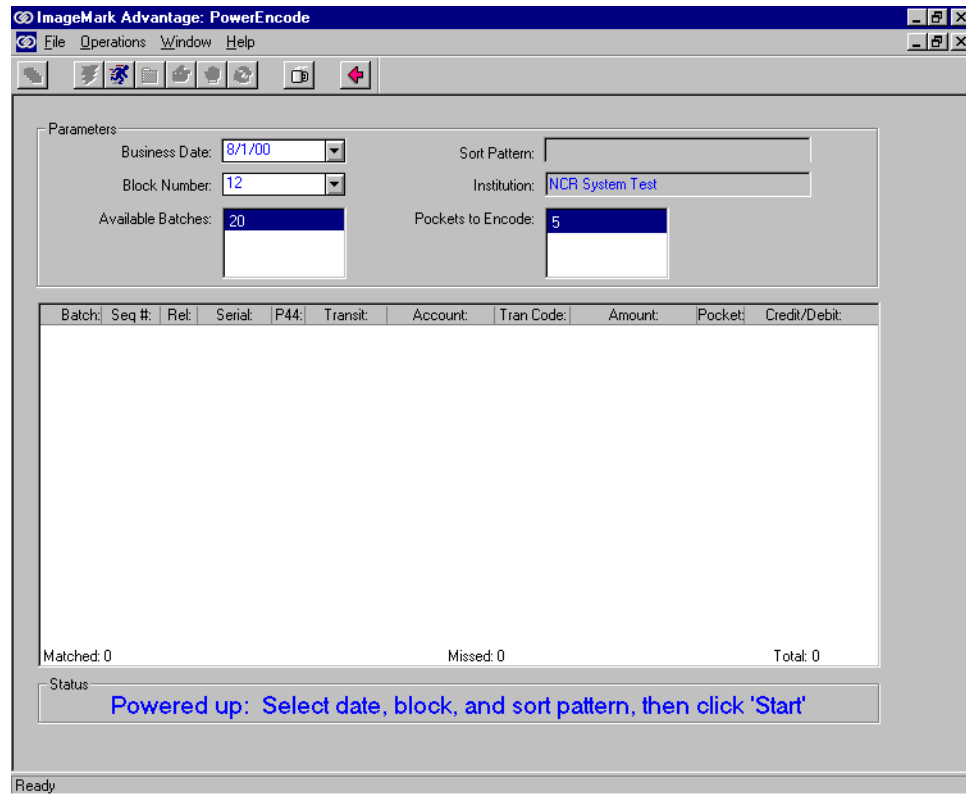
B00531

Encoding and Sorting

Once reject repair, amount entry, and balancing have been performed, the ImageMark Advantage database contains complete records for all documents.

- 1 The transport operator starts the encode and sort application.
- 2 The transport operator selects the work to process.
- 3 The operator selects the sort pattern to use.
- 4 The transport operator takes the trays of documents and loads them into the transport hopper.
- 5 The transport operator selects the “flow button” to start running documents.
- 6 The transport moves the documents down the track to the reader module. There, each document's current codeline is read. The software matches this actual codeline with the completed codelines stored in the database, by looking at documents forwards and backwards within a specified number or range, to make sure it has the right document. (Match criteria are flexible and user-specified through parameterization.) If a unique match is found, the item is automatically encoded and placed in the appropriate pocket.
- 7 If the item was not a unique match, or a reject was found in the codeline, the item goes in the reject pocket.
- 8 To process items that did not match, the operator selects “read and key” mode and loads the reject items into the hopper. “Read and key” mode attempts to rematch the items against a smaller list.
- 9 For each item not matched in the “read and key” mode, the document image is displayed on the transport controller screen. The operator selects the item from the list of unencoded items and the item is then encoded and pocketed. The item can be skipped if required. ■

Encoding and Sorting



B00529

Printing Advice Notices

Some of the adjustments made during the Balancing operation, such as customer or teller errors, require advice notices to be sent out to customers or tellers. Advice notices can be customized by the bank with customer defined templates that can be modified for any frequently used format and may include check images along with the advice notice text. These advice notices are printed at the end of the processing day.

Generating Reports

Once all processing for the day has been completed, ImageMark Advantage operators can generate summary reports that detail processing activities. Reports can be brought up for viewing on the workstations and can be printed to an attached printer.

There are two types of reports that operators can generate:

- Daily Operations
- End-of-Day

Daily Operations Reports

Daily Operations reports provide ImageMark Advantage operators with information about all items captured during the day's processing activities.

The Daily Operations reports include:

- **Master List reports** — provide summaries of specific processing information by a particular job, by all jobs in a specific sort pattern, by block, or by business date

These reports include general information detailing report ID, run date and time, sort pattern ID and description, key block ID, block number, and batch number. The reports also include batch recap information detailing batch numbers with encoded item amounts, totals and counts of debit and credit items captured and adjusted. Codeline, MICR, and processing status information is also detailed for each item in the report.

- **Details List reports** — provide summaries of specific processing information for all items in a bundle by job or by pocket

These reports include general information detailing report ID, run date and time, item source institution name and endpoint number, destination institution ID, name, and endpoint number, sort pattern ID and description, pocket number, bundle number, and block number. The reports also include bundle recap information detailing total amounts, first amount, last amount, item counts, pocket numbers, bundle numbers, endpoint descriptions and numbers, and tracer information.

- **Cash Letter Recap reports** — provide summaries for all bundles sent to an endpoint by single or all pockets in a job, by individual endpoint, or by a group of endpoints

These reports include general information detailing report ID, run date and time, destination institution ID, name, and endpoint number, source institution name, address, and endpoint number. The reports also include pocket information detailing pocket numbers, bundle numbers, item counts, and total amounts.

End-of-Day Reports

End-of-Day reports provide ImageMark Advantage operators with supplemental information about the item processing activities of their system. Often, this data is archived and used later for historical analysis.

The End-of-Day reports include:

- **Endpoint Analysis reports** — provide bundle information for all endpoints across all jobs to give a summary of the distribution of transit items

These reports include general information detailing report ID and run date and time. For each sort pattern ID within the endpoint, the sort pattern ID, key block number, and pocket number are reported. For each bundle, the bundle number, bundle count, and bundle amount are reported.

- **Reject Analysis reports** — provide a summary report of the types of rejects encountered during processing

These reports include general information detailing report ID, run date and time, job number, number of items in the job, total number of rejects encountered, and a percentage of items rejected. For each reject, reject number, reject reason, count of occurrences, and percentage of all rejects encountered are reported.

- **Application Totals reports** — provide a summary of the application totals and the different application volumes encountered for all jobs during processing.

The reports include general information detailing report ID, run date and time, job number, total count of all applications, and the total amount of all applications. For each application, the application name, count, total amounts per application, and percentage of all rejects encountered are reported.

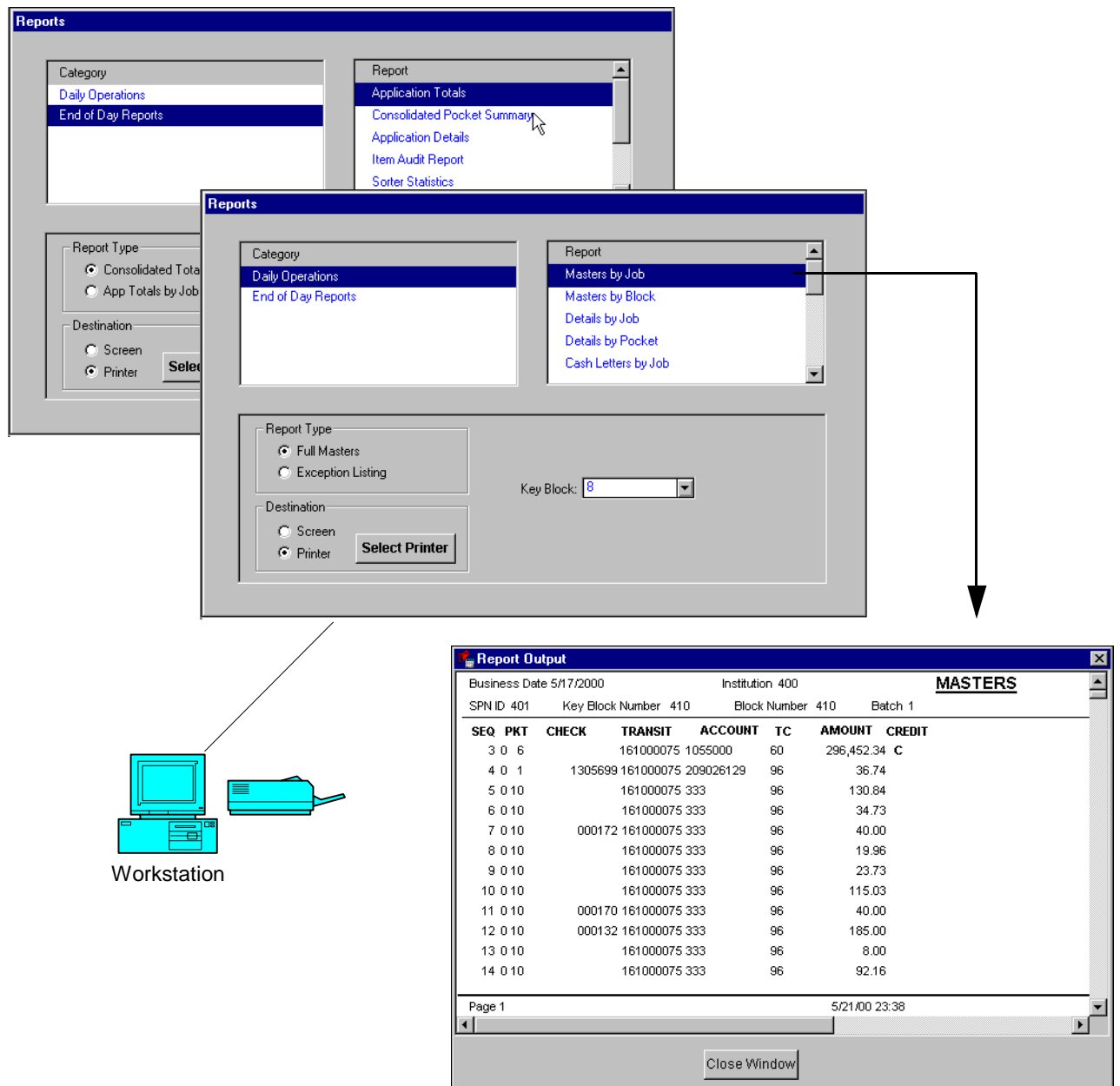
- **Application Details reports** — provide a summary of the application details.

The reports include general information detailing report ID, run date and time, job number, total count of all applications, and the total amount of all applications. The report also includes additional application details.

- **Consolidated Pocket Summary reports** — provide a summary of the pocketing information and how specific item types were pocketed.

The reports include general information detailing processing date, institution, and total item counts for all debit and credit items. For each item type, number of items sent to specific pockets, item count, and amount are reported.

Generating Reports



To view or print ImageMark Advantage operations reports, operators:

- 1 Start the report application.
- 2 Select the report category.
- 3 Select whether they want to display or print the report.
- 4 Open the report. ■

Archiving Data

When all physical processing work is done, the capture application creates a “dump” (*.dmp*) file of the Oracle database for each job. A “dump” file contains all of the data except the images.

The MICR server does not have the capacity for long-term data storage; data is usually erased at the end of each business day. Optical or DVD backups are stored offline, and the dump files are loaded onto the Research server for Research and Statement functions.

Administering the System

Managing System Workflow

During processing, the system administrator can monitor the status of each block and batch of work. This gives an indication of how many batches are waiting at each stage of completion. The system administrator can then dispatch operators to the required workstation applications to process the work in an efficient fashion.

Managing System Resources

The system administrator is responsible for backing up the system, maintaining system functionality, and adding and configuring new hardware and software.

Controlling System Access

The system administrator can create roles or activities, add and delete users, and grant specific permissions to users.

Chapter 3

Research, Archive, and Delivery Operations

Overview

Research, Archive, and Delivery Operations 3-1

Research 3-2
 Account Inquiry 3-2

Signature Verification 3-4
 Scanning 3-4
 Verification Process 3-4

CD-ROM Distribution 3-5
 CD Format 3-5
 CD Generation 3-5
 CD Viewing 3-7

Image Statements 3-8
 Statement Format 3-8
 Statement Generation 3-8
 Statement Printing 3-9



Overview

Research, Archive, and Delivery Operations

This chapter describes how staff at financial institutions use ImageMark Advantage to research and archive document data and images and to deliver image-based customer services. The chapter provides an idea of how work processes will be organized and what equipment and software applications staff and customers will use to do each part of their jobs. Research is used to locate, view, retrieve, make annotations, and deliver specific items that have been processed by ImageMark Advantage.

Research

Customer data, transactions, and images are stored on magnetic disk, and can be stored on optical disk or DVD as near online or offline archive depending upon age. ImageMark Advantage allows users to have access to the check image database for research and check clearing information. A variety of search criteria can be entered to retrieve check images and data. Delivery through networking or CD-ROM delivery makes Research easy to use with minimal investment.

In addition to viewing, printing, and faxing, ImageMark Advantage uses OLE (Object Linking and Embedding) automation to move front and back images of multiple items along with the MICR data into predefined templates of Microsoft Word and Microsoft Excel.

Account Inquiry

Operators access the item search interface to:

- Search for specific items by date or MICR information
- Set up search criteria for use with other searches
- Perform a search based on criteria entered previously

Once the item is located, the operator can:

- Correct MICR data that was not corrected during processing
- Display the front and back images of the item
- Manipulate the images of the item
- Mark or unmark the item as an exception
- Verify the signature on the item
- Add and display annotations
- Search for a particular transaction
- Export the transaction information to Microsoft Word, Microsoft Excel, or e-mail

Account Inquiry Screens

Item Search

Institution: Any Bank Site: All
 From Date: 5/9/00 To Date: 5/9/00
 Run #: Work Type: All
 Block #: Branch: Teller:

Range: Minimum Maximum
 Amount
 Tran Code
 Account
 FRB-ABA
 Check #
 Sequence
 Pocket
 Bank ID
 Endpoint ID
 Application ID

Ticket: Block Batch Regular Item
 Sorter: High Speed Low Speed All types

Item Query Results

Bus Date	Run	Block#	Seq	R Sq	Bank ID	Check#	RT#	Account	Amount	TC	Pkt	App	C/D	O/T	Ex	Cod
05/09/2000	1	1	1	0	1234	0	161000075	493570	50.00	44	6	0	Dbt			
05/09/2000	1	1	2	0	1234	0	161000075	102369	50.00	0	5	0	Cr			
05/09/2000	1	1	3	0	1234	0	161000075	0	186.16	0	3	0	Dbt			
05/09/2000	1	1	4	0	1234	0	161000075	15	186.16	0	5	0	Cr			
05/09/2000	1	1	5	0	1234	0	161000075	197777	200.00	44	6	0	Dbt			
05/09/2000	1	1	6	0	1234	0	161000075	15	200.00	0	5	0	Cr			
05/09/2000	1	1	7	0	1234	0	161000075	0	3,570.00	0	3	0	Dbt			

Item(s) 1 to 4 of 56 Credit Amount = 9,758.61 Debit Amount = 9,758.61 Net Amount = .00 ** To Sort, Right Click column heading **

Item Query Results

Bus Date	Run	Block#	Seq	R Sq	Bank ID	Check#	RT#	Account	Amount	TC	Pkt	App	C/D	O/T	Ex	Cod
05/09/2000	1	1	1	0	1234	0408	161000075	00175520	80.00	44	6	0	Dbt			
05/09/2000	1	1	2	0	1234	0	161000075	102369	50.00	0	5	0	Cr			
05/09/2000	1	1	3	0	1234	0	161000075	0	186.16	0	3	0	Dbt			
05/09/2000	1	1	4	0	1234	0	161000075	15	186.16	0	5	0	Cr			

Item(s) 1 to 17 of 56

FIRST LAST
ADDRESS
DATE 1999 049

PAY TO THE ORDER OF Sam Honda \$ 80.00
Fifty XX DOLLARS
BANK TWO Signature
⑆ 1234 1000075 ⑆ 0049 ⑆ 00 ⑆ 75520 ⑆ 0408



Signature Verification

Scanning

An operator physically scans the signature card for each account and the signature card image is stored on the Research server. The signature card is stored by account number so that it can be easily retrieved when required.

Verification Process

When an operator questions the signature of an item during research, the operator can bring up the customer's signature card for a visual of their signature on file.

The verification process is a manual operation. The workstation operator selects an item and displays the image. If signature verification is required, the operator clicks on the Signature Verification icon and the card image will appear in a new window on the workstation screen. Online signature verification enhances productivity because operators can now perform this function without leaving their workstation.

If the signatures do not match, you can mark the item as an exception and resolve the issue with the customer.

CD-ROM Distribution

The ImageMark Advantage CD-ROM Distribution software enables banks to distribute MICR data and images to their customers on a compact disc. Processing centers can also use CD-ROM distribution to deliver item data to other banks, making the transfer of MICR data and the corresponding images more efficient.

You can deliver statements, item data, and images to customers on a CD using the CD Distribution software. There are two software packages:

- **CD Builder** — Use this application to create a customer CD.
- **CD Viewer** — Customers use this application to review the data you deliver on CD. This includes the item data and corresponding images and statements file for each account.

CD Format

The CD generated by this interface is self-contained and includes search tools and an Image Viewer. The Image Viewer is read-only; images on the CD cannot be altered by the customer.

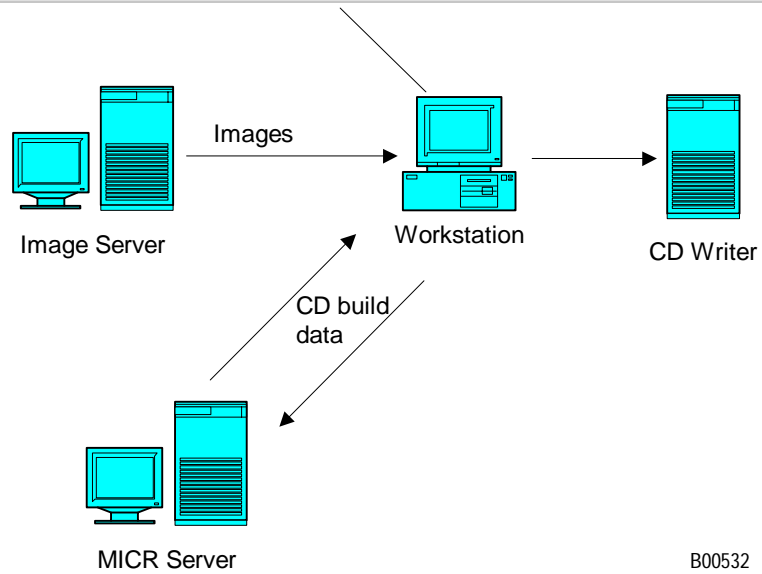
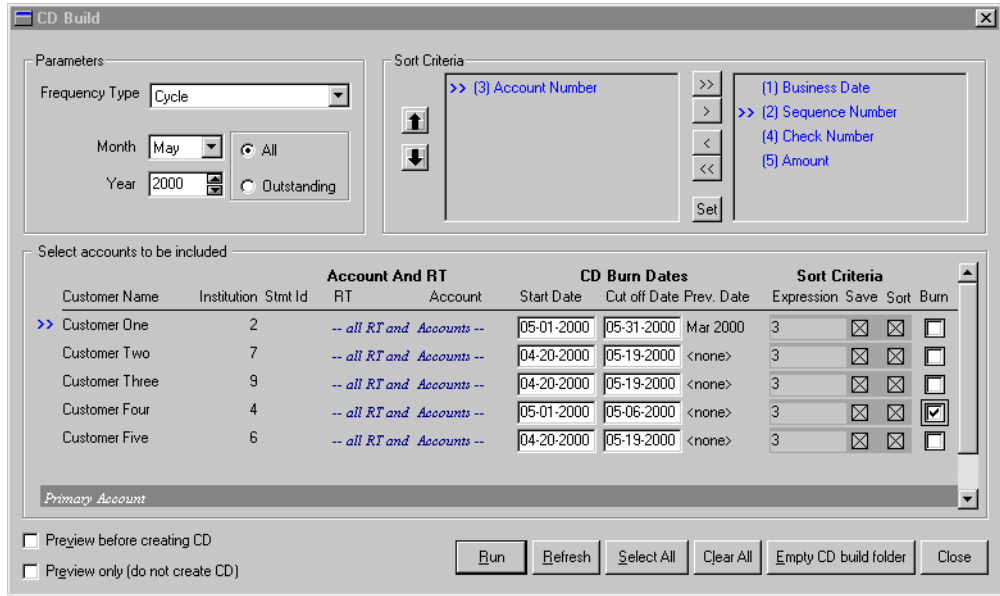
CD Generation

CD generation is handled on a CD Distribution workstation linked via LAN to the Research server and the Image Server.

To create a CD an operator performs the following steps:

- 1 The operator starts the CD Builder software application.
- 2 The operator loads a writable CD into the correct drive.
- 3 The operator selects a specific, previously defined customer and data range from the database. Data can be sorted by such criteria as business date or amount. The operator can also preview the items and corresponding images before building the CD.
- 4 The CD Distribution software packages the MICR database, images, and CD Viewer together.
- 5 The application transfers the data from the database to the CD. ■

Generating a CD



B00532

CD Viewing

Once the CD is created and distributed to the customer, the customer can run the application include on the CD to search for specific item records and display images of checks for the items.

Viewing a CD

The screenshot shows a software application window titled "CHEXel:Distribution - Independence". The window contains a table of item records and a check image.

Date	Routing & Transit	Account	Amount	Check# C/D
06-27-2000	161000075	00175520	80.00	0408 Dbl
06-22-2000	161000075	0145000749	200.00	3617 Dbl
06-23-2000	161000075	0145000749	100.00	3616 Dbl
06-27-2000	161000075	0145000749	50.00	3615 Dbl
06-20-2000	161000075	0145000749	586.00	3613 Dbl
06-20-2000	161000075	0145000749	59.95	3612 Dbl
06-16-2000	161000075	0145000749	19.95	3611 Dbl

Item(s) 1 to 7 of 12 Cr Amt = .00 Db Amt = 1,944.51 Net Amt = -1,944.51 * Right Click heading to Sort *

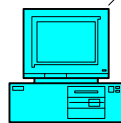
FIRST LAST
ADDRESS
DATE 1999 049

PAY TO THE ORDER OF Sam Honda \$ 80.00

Eighty DOLLARS

BANK TWO Signature

⑆ 161000075⑆0049⑆00⑆75520 ⑆ 0408



Customer

Image Statements

The ImageMark Advantage Statements software simplifies the creation and production of customer statements. Text statement data and statement data files are taken from the host and combined with images taken from the Image server.

Statement Format

Statements are formatted based on the bank's templates and letterhead. Templates can be in Microsoft Word or Microsoft Excel, and are customizable to fit the bank's letterhead. Statements can be organized for print using the following image variables:

- Image front and back
- Image front only
- Number of images per page
- No images

Statement Generation

Statements are generated on a workstation linked via LAN to the Research server and the sorter.

- 1 An operator loads statement data from the sorter's host, including:
 - Account number
 - Transaction data
 - Business date
 - Number of items
- 2 The operator retrieves the images corresponding to the statement data from the Research server.
- 3 Unmatched items are placed in a crippled list.
- 4 The operator can use the automated search function within the Statements software to find crippled items by searching for all possible matches from the database based on operator-specified MICR and date ranges; however, if no match is found, the operator must perform the search from the Research software module.
- 5 A Statement file is created and named based on the processing cycle and the processing date. ■

System Components

Overview	
System Components	4-1

System Architecture	4-2
---------------------------	-----

Servers	4-3
Image Server	4-4
Hardware Configuration	4-4
Software Configuration	4-5
MICR Server	4-6
Hardware Configuration	4-6
Software Configuration	4-7
Research Server	4-8
Hardware Configuration	4-8
Software Configuration	4-9
Recognition Server	4-10
Hardware Configuration	4-10
Software Configuration	4-11

Capture Transport	4-12
Transport Features	4-12
Capture Transport Controller	4-14
Hardware Configuration	4-14
Software Configuration	4-15

Workstations	4-16
Hardware Configuration	4-16
Software Configuration	4-17
Workstation Software	4-18
Supervisor Service	4-18
Parameters	4-18
Amount Entry	4-19
Reject Repair	4-19
Balancing	4-19
Image Statements	4-19
Research	4-19
CD Distribution	4-19
Advantage End of Day Utility	4-19

Local Area Networks (LANs)	4-20
Ethernet Specifications	4-20
LAN Hardware	4-20
LAN Software	4-20


Overview

System Components

This chapter provides detailed information about the hardware and software components that make up ImageMark Advantage.

Note: This chapter provides hardware specifications for each ImageMark component. The hardware specifications listed represent minimums required for use based on sites running fewer than 100,000 items total per day. With continuous technological improvements, the hardware components provided are likely more powerful than the minimums specified.

Note: This chapter does not specify release levels for software components. For lists that specify the required release level for each software component that you must install, contact your NCR sales representative.

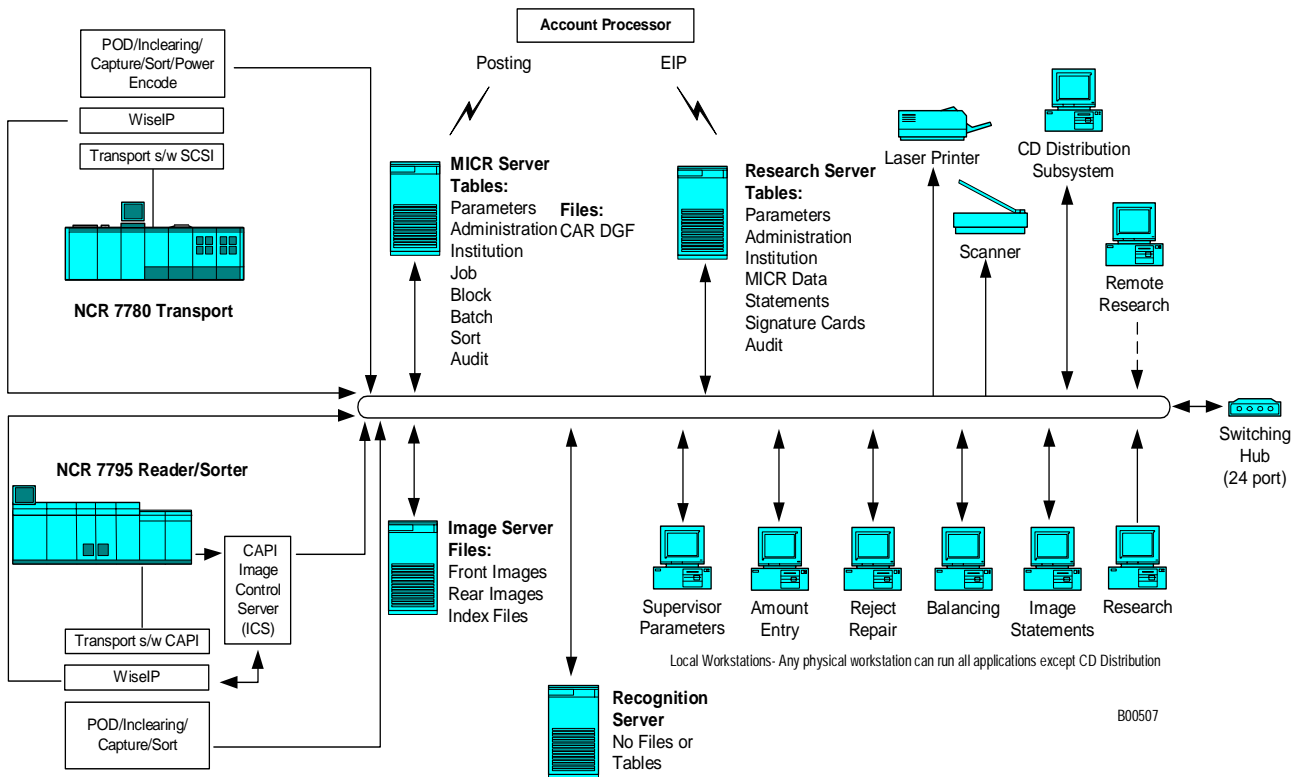
Note: The hardware presented in this document is representative of the hardware that was available at the time of publication. Because of continuing technological change and hardware advances, what is actually configured for your ImageMark Advantage solution may not be the same as what is shown in this chapter. Your NCR sales team has access to sophisticated modelling tools which will generate the exact hardware configuration you require based on your processing requirements.

System Architecture

NCR's ImageMark Advantage system distributes tasks among server and client subsystems connected by Ethernet local area networks (LANs).

The following diagram shows an example of each type of component, including the main hardware and software components and the basic LAN connections.

System Architecture



Servers

In the ImageMark Advantage logical architecture there are four different types of server functions:

- Image server
- MICR server
- Research server
- Recognition server

These functions may be consolidated on the same or different physical servers in varying combinations, depending on processing requirements.

Image Server

The Image Server stores all image files and their associated index files for the system. The Image server stores images from previous days, weeks, and months on RAID, as well as mass storage devices such as optical jukeboxes and DVD-RAM. In most instances it will also be the Research server.

Primary functions of this server include:

- front image file storage
- rear image file storage
- image index file storage

Hardware Configuration

At a minimum, a typical Image Server will be an NCR S25 or NCR 4455 configured as follows:

- 512 MB RAM
- 2 x 700 MHz Pentium III Processors
- PCI Bus
- Three channel AMI RAID adapter with 64 MB cache
- 100 BaseT ethernet network adapter
- 6 x 18 GB internal disk drives
- 20/40 GB DAT tape drive
- CD-ROM
- 17" color monitor
- 2-button mouse

Optionally, depending on your processing requirements, the Image Server may also have the following optional components:

- DVD-RAM or magneto-optical external library
- additional internal or external RAID depending on the volume of items you will be processing and your RAID retention period

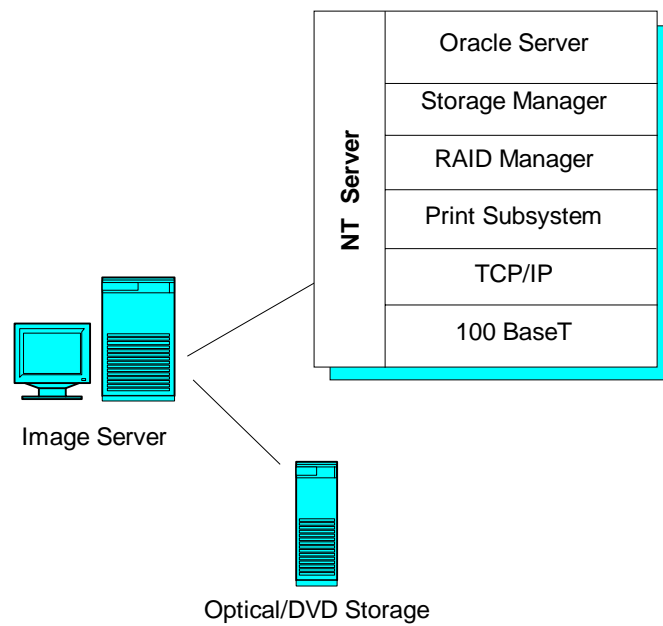
For advice on configuring Image server hardware to meet your specific requirements, consult your NCR sales representative.

Software Configuration

The Image Server is configured with the following software:

- **Windows NT Server** — serves as the operating system for the server
- **Oracle Server** — database software
- **RAID Manager** — manages RAID storage devices
- **Ethernet (TCP/IP)** — network connectivity software
- **Print Subsystem** — controls the print functions
- **Storage Management** — manages optical/DVD storage of item images

Image Server Software



B00523

MICR Server

The MICR server is the main capture database engine that handles the storage of item data and operational control information.

Primary functions of this server include:

- receiving and storing document MICR data from capture
- processing SQL requests for document data from recognition as well as the supervisor, amount entry, reject repair and balancing workstation applications
- receiving update data from the workstations
- storing parameters
- access security
- transmitting data to the host processor system
- workflow management
- preparing data for certain end of job/day reports to be printed
- receiving and storing power encode processing results data

Hardware Configuration

At a minimum, a typical MICR Server will be an NCR S25 or NCR 4455 configured as follows:

- 512 MB RAM
- 2 x 700 MHz Pentium III Processors
- ISA Bus
- Three channel AMI RAID adapter with 64 MB cache
- 100 BaseT ethernet network adapter
- 6 x 18 GB internal disk drives
- 20/40 GB DAT tape drive
- CD-ROM
- External 56K modem
- 17" color monitor
- 2-button mouse

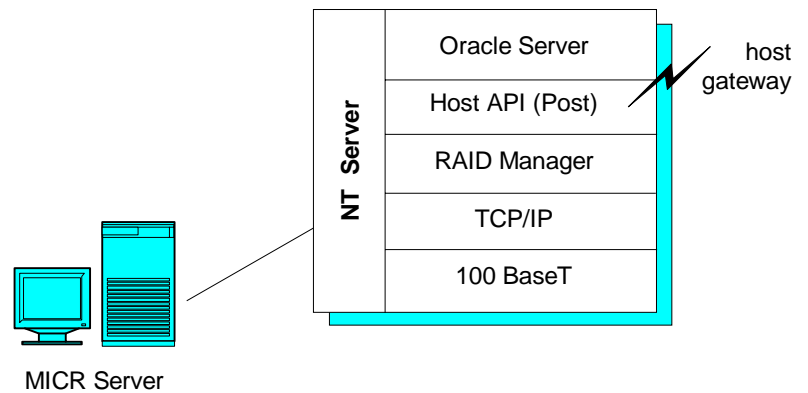
For advice on configuring MICR server hardware to meet your specific requirements, consult your NCR sales representative.

Software Configuration

The MICR Server is configured with the following software:

- **Windows NT Server** — serves as the operating system for the server
- **Oracle Server** — database software
- **RAID Manager** — manages RAID storage devices
- **Ethernet (TCP/IP)** — network connectivity software
- **PC Anywhere 32** — host interface software used to send information such as posting to the host for document processing operations

MICR Server Software



B00522

Research Server

The Research Server houses the database tables including Institution, Master table, Research Parameters, Audit table and Signature Card index. In most cases this function will reside on the same physical server as the Image server.

Primary functions of this server include:

- receiving and storing document MICR data from the MICR server for longer term storage
- processing SQL requests for document data from the Research, Image Statement and CD Distribution workstation applications
- receiving update data from the workstations
- storing parameters
- access security
- transmitting and receiving data to/from the host processor system

Hardware Configuration

At a minimum, a typical Research Server will be an NCR S25 configured as follows:

- 512 MB RAM
- 2 x 700 MHz Pentium III Processors
- PCI Bus
- Three channel AMI RAID adapter with 64 MB cache
- 100 BaseT ethernet network adapter
- 6 x 18 GB internal disk drives
- 20/40 GB DAT tape drive
- CD-ROM
- 17" color monitor
- 2-button mouse

For advice on configuring Image server hardware to meet your specific requirements, consult your NCR sales representative.

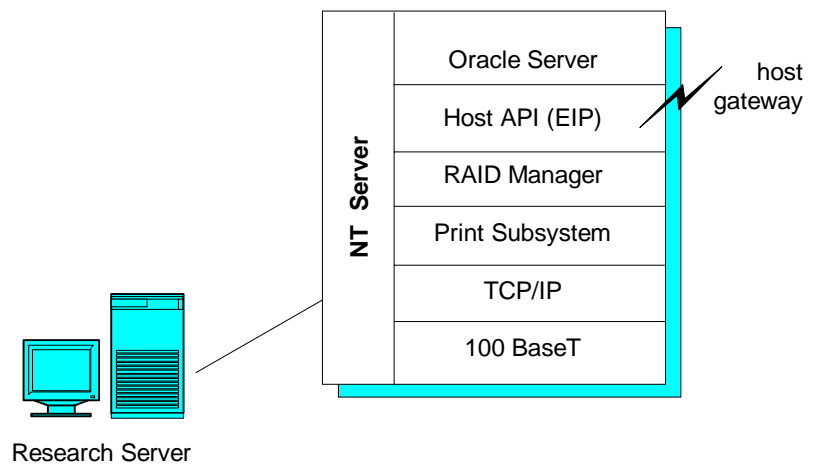
Note: If there are multiple sites connected to a central Research server (for example data centers), then the optical DVD-RAM or magneto-optical external library normally connected to the Image Server, would be connected to the Research server.

Software Configuration

The Research Server is configured with the following software:

- **Windows NT Server** — serves as the operating system for the server
- **Oracle Server** — allows the Research server to store document data, and to move document data to archive
- **RAID Manager** — manages RAID storage devices
- **Ethernet (TCP/IP)** — network connectivity software
- **Print Subsystem** — controls print functions for the server
- **Host API (Exception Item Pull)** — host connectivity software for exception item pull data

Research Server Software



B00524

Recognition Server

After the check image is captured, the image is sent to the Recognition server and run through multiple recognition algorithms which attempt to read the amount on the items. This information is sent to the MICR server. On the MICR server is a database that gathers and retains the check information (MICR and dollar amount) obtained by the CAR/LAR process.

The Amount Recognition software provides Numeric Hand-Print Recognition, Courtesy Amount Recognition, and Legal Amount Recognition.

- Numeric Hand-print Recognition allows the recognition of handwritten and printed numbers at fixed locations in images of standardized documents.
- Courtesy Amount Recognition uses NCR and Bell Labs recognition technologies to allow recognition of amounts at non-fixed locations on documents.
- Legal Amount Recognition uses the legal amounts of checks to validate the courtesy amounts.

The three components work together to recognize handwritten and printed amounts in checks and deposit slip images. This reduces labor because many items can be recognized automatically, thereby reducing manual keying of amounts by operators.

Primary functions of this server include:

- image decompression for recognition
- amount find, and character segmentation/recognition
- combining recognition results

Hardware Configuration

At a minimum, a typical Recognition Server will be an NCR S25, NCR 4455, or NCR 3234 (depending on your peak capture rate requirements) configured as follows:

- 128 MB RAM per processor
- 1 x 667 MHz Pentium III Processor per 7780 transport supported
- PCI Bus
- 100 BaseT ethernet network adapter
- 1 x 15 GB internal disk drive
- CD-ROM
- 15" color monitor
- 2-button mouse

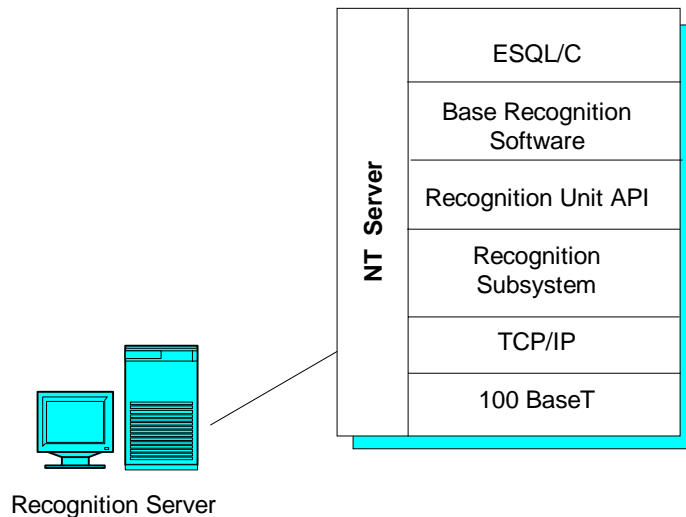
For advice on configuring Recognition server hardware to meet your specific requirements, consult your NCR sales representative.

Software Configuration

The Recognition Server is configured with the following software:

- **Windows NT Server** — serves as the operating system for the server
- **ESQL/C** — manages access to the database
- **Base Recognition software** — manages recognition requests and responses between the Recognition server and the Image and MICR servers
- **Recognition Unit API** — Application Program Interface layer for recognition functions
- **Recognition Subsystem Application software** — provides numeric hand-print recognition, courtesy amount recognition, and legal amount recognition and handles courtesy amount verification requests from the MICR server
- **Ethernet (TCP/IP)** — network connectivity software

Recognition Server Software



B00525

Capture Transport

Operators use transports to capture images of documents and read any data encoded on them. The transport controller processes the images and data as required by ImageMark Advantage, then stores the codeline data on the MICR server and the images on the Image server.

ImageMark Advantage supports the use of multiple transports where necessary. NCR 7780, 7790 and 7795 transports may be used in any combination depending on individual institutional requirements.

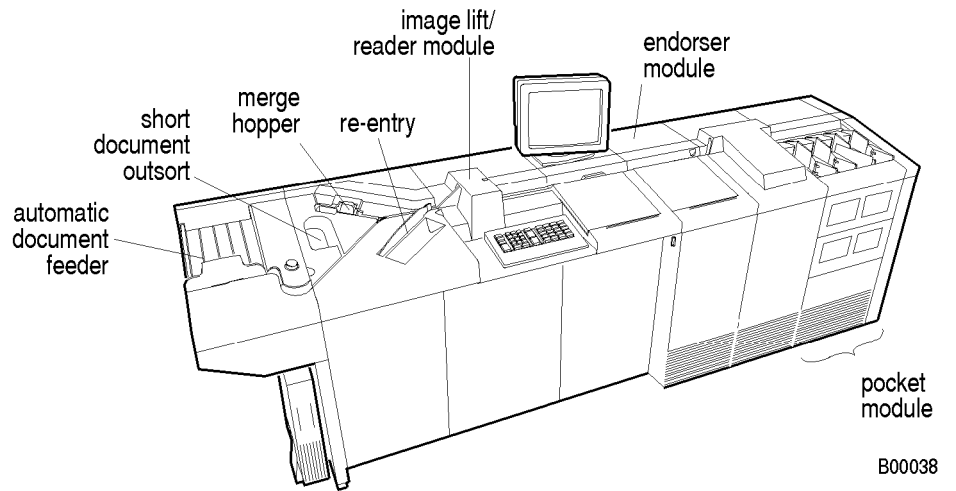
Depending on your specific site processing requirements, you can configure your site with any combination of NCR 7780, 7790, and 7795 transports to satisfy your unique processing needs. This versatility and scalability ensures that you will have the capture throughput you need and want. For advice on configuring your transports to meet your specific requirements, consult your NCR sales representative.

Transport Features

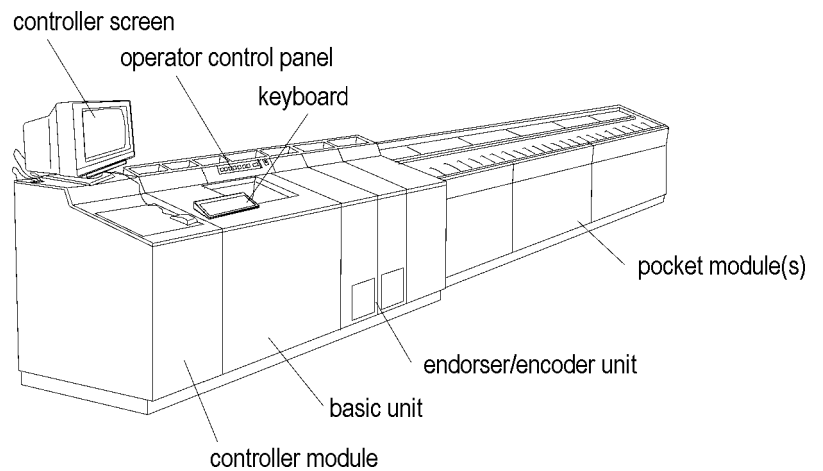
The NCR transports are equipped with an image-lift/reader module to capture document images and read codelines. The table below lists the standard features of the NCR 7780 and 7790/7795 transports.

Feature	7780	7790	7795
Image Capture	Yes	Yes	Yes
MICR Capture	Yes	Yes	Yes
Burst DPM	500	1150	1825
Power Encode	Yes	Yes	No
Endorse	Yes	Yes	Yes
Number of Pockets	4 to 40	8 to 40	8 to 48
Number of Pockets per Pocket Module	4	8	8

Sample 7780 Transport Configuration



Sample 7790 Transport Configuration



Note: The modular design of NCR transports lets you choose the exact features needed in your ImageMark Advantage environment. To learn more about transport features, contact your NCR sales representative or refer to the *NCR 7780 Item Processing Workstation Product Information* book and the *NCR 7790 and NCR 7795 High-Speed Item-Processing Transports Product Information* book.

Capture Transport Controller

The capture transport controller provides the interface between the transport running the capture application and the ImageMark Advantage MICR and Image servers.

Primary functions of the controller include:

- obtaining parameter information from the MICR server
- transmitting front image, rear image, and image index information to the Image server
- transmitting item data including MICR data to the database on the MICR server

Hardware Configuration

At a minimum, a typical transport controller will be an NCR 3234 configured as follows:

- 128 MB RAM
- 1 x 667 MHz Pentium III Processor
- PCI Bus
- 100 BaseT ethernet network adapter(s)
- 2 x 15 GB internal disk drive
- CD-ROM
- 17" color monitor
- 2-button mouse

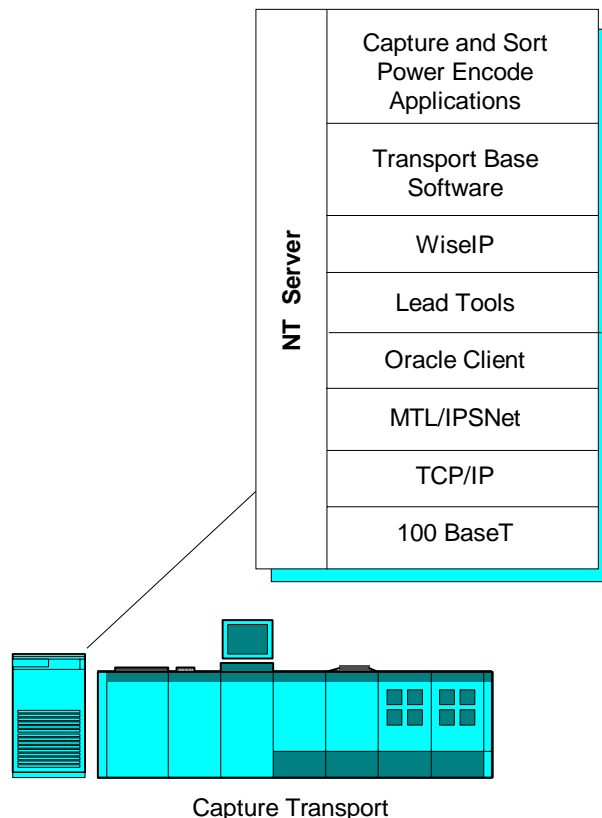
For advice on configuring transport controller hardware to meet your specific requirements, consult your NCR sales representative.

Software Configuration

The transport controller is configured with the following software:

- **Windows NT Server** — serves as the operating system for the controller and provides the graphical user interface for the capture and encode applications
- **Oracle Client** — lets the controller pass document images to the Image server, pass item data to the MICR server, and receive parameter information from the MICR server
- **Lead Tools** — allows images to be displayed to the transport operators
- **WiseIP** — interface software between the transport and the capture and encode applications (in the case of the 779x transports, WiseIP also provides the interface to the CAPI controller software)
- **Capture and Sort Applications, and Power Encode**— the ImageMark Advantage capture and encode applications
- **Transport Base Software** — the system download and diagnostic files that allow the controller to communicate with the transport
- **MTL/IPSNet** — network protocol software
- **Ethernet (TCP/IP)** — network connectivity software

Transport Controller Software



B00527

Workstations

A workstation is an NCR personal computer equipped with a monitor, keyboard, and software for processing information from document images.

Primary workstation functions include:

- Balancing
- Amount Entry
- Reject Repair
- Research
- Image Statements
- CD Distribution
- Report generation
- Advice Notice Printing
- Supervisor operations
- Parameter generation
- Image decompression for display

The number of workstations in your system depends on your specific requirements. You can dedicate groups of workstations to each of the above tasks, or you can install several software packages on each workstation, and let operators select the desired function under the supervisor security control.

Hardware Configuration

At a minimum, a typical workstation will be an NCR 3234 configured as follows:

- 128 MB RAM
- 1 x 566 MHz 128K Celeron Processor
- PCI Bus
- 100 BaseT Ethernet network adapter
- 1 x 15 GB internal disk drive
- 22" color monitor
- 2-button mouse

Optionally, depending on your CD Distribution requirements, your workstations may also have the following configurations:

- configured with an internal CD-RW drive for low volume CD Distribution (installed on a standard workstation)
- a Rimage High Performance Control Center for higher volume CD Distribution (installed on a separate workstation)

Note: At each site, one or more workstations are used to produce customer advice notices with the ImageMark Advantage Advice Notice software. To print out the advice notices, these workstations must be equipped with a laser printer or have access to one on the network.

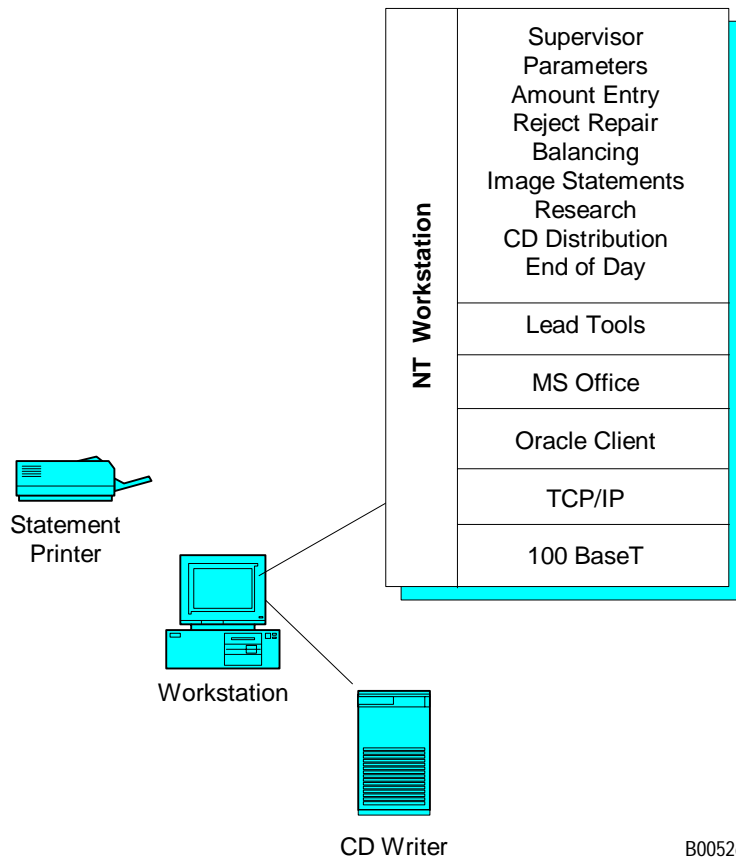
For advice on configuring workstation hardware to meet your specific requirements, consult your NCR sales representative.

Software Configuration

Depending on function, the ImageMark Advantage workstations may be configured with the following software:

- **Windows NT Workstation** — serves as the operating system for the workstation and provides the graphical user interface for the ImageMark Advantage applications
- **Oracle Client** — lets the workstation receive document images and data from the ImageMark Advantage MICR, Image, and Research servers and return document data to the MICR server
- **MS Office** — provides access to the programs used by ImageMark Advantage (including things like MS Word templates)
- **Lead Tools** — allows images to be displayed to the workstation operators
- **Supervisor, Parameters, Amount Entry, Reject Repair, Balancing, Image Statement, Research, CD Distribution, and End of Day** — the ImageMark Advantage applications
- **Ethernet (TCP/IP)** — network connectivity software

Workstation Software



B00526

Workstation Software

The ImageMark Advantage workstation software is modular and can be loaded on several workstations depending on the specific processing requirements and environment.

Supervisor Service

Supervisor Service keeps track of user accounts, user passwords, and user permissions within ImageMark Advantage. Operations supervisors use Base Access Security Management to specify which software can be accessed on each station. Supervisor Service lets supervisors create and customize access roles for various user types.

Parameters

Parameters software is loaded on the workstation. This tool allows the bank to customize the system to meet site-specific requirements. In particular, parameters can be used to complete the following tasks:

- define item types (expected codeline and image formats) for documents so that they can be identified and processed
- define sort patterns and recognition parameters

Parameters are easily customizable on-site and require no programming changes.

Amount Entry

The Amount Entry software allows operators to enter amounts and other information that is missing on the items that have been processed.

Reject Repair

The Reject Repair software allows operators to correct codeline data for items that were rejected during processing.

Balancing

The Balancing software allows operators to reconcile out-of-balance transactions.

Image Statements

This package allows the operator to prepare statements for customers with images of their checks instead of returning the actual paper items. Contains server software that lets other ImageMark Advantage subsystems access and maintain data on cycles (processing days).

Research

The Research software allows operators to research items at customer requests or to complete statements.

CD Distribution

This software package allows the operator to create a self-contained CD-ROM which contains both MICR and image data for a customer. This CD contains a viewer.

Advantage End of Day Utility

The Advantage End of Day Utility lets system administrators and operations supervisors generate audit reports, exception-item reports, and advice notices.

For more information on the software functions, refer to the information in Chapter 2, *Data Capture and Item Processing*, and Chapter 3, *Research, Archive, and Delivery Operations*.

Local Area Networks (LANs)

All the components of your ImageMark Advantage system are connected to each other through local area networks (LANs). These LANs consist of the hardware that physically connects the subsystems and the software that lets them exchange data, images, and other information.

The ImageMark Advantage LANs enable users to do the following:

- share images and other files
- share resources, such as printers and storage devices
- increase productivity by obtaining faster access to data

Ethernet Specifications

The ImageMark Advantage LANs use Ethernet network protocols.

Specifications for Ethernet LANs are as follows:

- **Data throughput:** 10 and 100 megabits per second
- **Network protocol:** TCP/IP
- **Transaction standard:** IEEE 802.3

LAN Hardware

All the ImageMark Advantage servers and workstations are connected to LANs. The LAN hardware consists of the following components:

- A network adapter card in each computer
- A network drop cable that connects this card to an Ethernet hub
- One or more switching 10/100 BaseT Ethernet hubs, through which the computers communicate with each other

To extend the length of network cabling, you can also install repeaters, which amplify the signals and pass them along. If your environment contains more than one primary LAN, you can install devices called bridges to connect them.

LAN Software

ImageMark Advantage consists of Windows NT-based servers and client workstations. It therefore uses network software that follows the TCP/IP open network protocol, which lets these various subsystems communicate with each other. (For example, it lets a workstation retrieve images and codeline data from MICR, Research, and Image servers.)

Training and Services

Overview

Training and Services 5-1

Professional Services 5-2
 Base Services 5-2
 Optional Services 5-3

Base Implementation Service 5-4
 Service Description 5-4
 Project Coordination 5-4
 Equipment Hot Staging 5-4
 Installation 5-5
 Training 5-5
 Service Deliverables 5-5
 Benefits 5-5

Ramp-Up Assistance 5-6
 Service Description 5-6
 Service Deliverables 5-6
 Benefits 5-6

Recognition Tuning 5-7
 Service Description 5-7
 Service Deliverables 5-7
 Benefits 5-7

File Migration 5-8
 Service Description 5-8
 Service Deliverables 5-8
 Benefits 5-8

System Administration Training	5-9
Service Description	5-9
Service Deliverables	5-9
Benefits	5-9

Project Management	5-10
Service Description	5-10
Service Deliverables	5-12
Benefits	5-12

Enhanced Training	5-13
Service Description	5-13
Service Deliverables	5-14
Benefits	5-14

Host Interface	5-15
Service Description	5-15
Service Deliverables	5-15
Benefits	5-15

Customization	5-16
Service Description	5-16
Service Deliverables	5-16
Benefits	5-16

Document Analysis and Design	5-17
Service Description	5-17
Service Deliverables	5-18
Benefits	5-18

Workspace Planning and Design	5-19
Service Description	5-19
Service Deliverables	5-19
Benefits	5-20

Disaster Recovery	5-21
Service Description	5-21
Service Deliverables	5-21
Standard Package A	5-22
Standard Package B	5-22
Benefits	5-23

Professional Services “On-Call”	5-24
Service Description	5-24
Service Deliverables	5-24
Benefits	5-24

Image Planning/Strategy Consulting	5-25
Service Description	5-25
Service Deliverables	5-25
Benefits	5-25

Audit/Tune-Up Consulting	5-26
Service Description	5-26
Service Deliverables	5-26
Benefits	5-26



Overview

Training and Services

This chapter describes the training programs, professional services, and support services NCR offers to help your financial institution make a smooth transition to ImageMark Advantage and derive maximum benefit from ImageMark Advantage once you have it in production.

Professional Services

Fundamental changes in technology, process and infrastructure will occur within the bank when ImageMark Advantage is adopted. The capabilities of the solution will enable new revenue opportunities and service levels not achievable with traditional item processing capability. Image statements, CD-ROM generation, and on-line inquiry capability will bring new processes and functional operations within the bank. The transition is a critical part in the realization of the benefits of imaging.

This section describes the training and services that NCR offers for ImageMark Advantage.

Base Services

Based on our years of experience, NCR has assembled a “suite” of professional consulting, implementation, and training services. We have learned that all of these services are necessary if the benefits of the ImageMark Advantage system are to be realized. These services are designed to assist the bank in making a smooth, timely transition to imaging, with minimal disruption to the existing customer support infrastructure and internal operations management.

Base Services include:

- Project Coordination
- Equipment Hot Staging
- Installation
- Training

Optional Services

Optional services are intended to supply technical expertise to the bank to supplement their current staff capabilities. Optional services may be purchased in combination or separately. These services include:

- Ramp-Up Assistance
- Recognition Tuning
- File Migration
- System Administration Training
- Project Management
- Enhanced Training
- Host Interface
- Customization
- Document Analysis and Design
- Workspace Planning and Design
- Disaster Recovery
- Professional Services “On-Call”
- Image Planning/Strategy Consulting
- Audit/Tune-Up Consulting Service

Base Implementation Service

Service Description

The Base Implementation Service is a combination of services designed to implement the ImageMark Advantage solution. It consists of:

Project Coordination

This service delivers comprehensive project coordination, to ensure the ImageMark Advantage solution is delivered on time and within budget, and that it results in the increased capabilities of the solution for which it was intended.

The methodology utilized to deliver the service is known as GlobalPM, a standard in the information technology industry. Leveraging the experience of more than a decade of large-scale multi-vendor projects and the technology leadership of NCR corporation, GlobalPM provides the proven methodology and seasoned project coordinators to make projects successful.

The installation of the application components of the ImageMark Advantage solution is a complex undertaking. Qualified and experienced implementation specialist(s) will be assigned to ensure that the system is installed properly and meets customer expectations, with special attention to the production through-put requirements of the bank.

Equipment Hot Staging

Most of the components of the ImageMark Advantage solution are delivered to the NCR Lab / Staging facility. After the equipment is inventoried and validated against the order, the system is assembled and diagnostic routines performed on the hardware components. Then the platform and database software is installed and configured. Then the application software and any third party software is installed and the parameterization options are set and tested to the bank specifications. If customization has been purchased, the modifications are integrated and tested utilizing the bank test transactions. The entire system is then functionally tested end-to-end. Upon complete testing, the system is tagged, re-packed, and shipped to the bank site.

Installation

Upon arrival at the bank site, the system is placed in the proper location and all of the shipping materials are removed and placed in storage. The system is started back up after connecting to the banks LAN and the diagnostic routines run again to ensure that no damage occurred during shipping. Sub-system by sub-system, each component is re-tested and / or integrated into the bank environment. After all components have been assembled, the ImageMark Advantage solution is functionally tested with the bank system administrator. This step is complete when the bank system administrator signs the installation checklist.

Training

Two forms of training occur after the installation is complete, sessions that are targeted at the system administrator and sessions that are targeted at the end users of the ImageMark Advantage solution. The system administrator is guided through the processes on how to run the solution while the end users are guided through the processes of the applications purchased. In both cases the training will be a hands-on process utilizing the banks current equipment. It is assumed that all persons trained will have sufficient background in the bank's existing processes and have experience with the system that ImageMark Advantage is replacing. This step is complete when the bank system administrator and end users sign the training checklist.

Service Deliverables

The base service deliverables include:

- A coordinated and well managed implementation
- Implementation consultants with industry knowledge and expertise in all aspects of traditional item processing workflow and the implications of moving to an imaging environment
- Guidance and recommendations on the degree and impact of change on the people and process elements of a ImageMark Advantage implementation
- A business partner with knowledgeable resources to complement their own implementation team
- An installed and operational ImageMark Advantage solution

Benefits

The benefits of the base service include:

- Capability to increase the banks revenue with added services
- Trained operations and support personnel
- Faster low risk implementation
- On-going support infrastructure
- Proven Imagemark system customized to user specs

Ramp-Up Assistance

Service Description

The ramp-up assistance service provides additional expert conversion assistance to customers during the ramp-up process.

Factors such as high operator turnover, lack of customer-provided trainers dedicated to the ImageMark Advantage system, and/or lack of awareness of all the features and functions of the ImageMark Advantage solution contribute to the utility of this service. The service focuses on the operator and, in a hands-on setting, raises the operator's skill level quickly and efficiently through one-on-one assistance with problem solving and immediate feedback. The service enhances the operator's understanding of the solution by delving into its features and functions, reinforcing and/or introducing concepts and techniques, and providing quick resolution to questions and issues which occur during daily operations. This service can also be extended to the Research and Adjustments functions to investigate different techniques of researching items associated with ImageMark Advantage.

Service Deliverables

The deliverables include:

- Improved operator productivity leading to the potential for meeting deadlines more efficiently
- Dedicated resources focused on operator efficiency so operations management need not be distracted from their regular duties
- Potential reduction in the generation of unnecessary advice notices and adjustments, and time to resolve problems
- Increased awareness in realizing full value of ImageMark Advantage (using all of the capabilities of the system)
- Additional Implementation Consultant time on site during the ramp-up effort

Benefits

Expert level conversion assistance ensures the successful ramp-up of the solution. The service is sold in weekly modules to match the conversion assistance required by the customer.

Recognition Tuning

Service Description

The Recognition Tuning service analyzes documents within the workflow, identifies high volume items, and addresses these items specific needs, then tunes the ImageMark Advantage Recognition software to achieve maximum effective read rate levels. In conjunction with the Document Analysis & Design service, Recognition Tuning ensures that the bank obtains optimal performance from the recognition system. Recognition strategies are defined for high-volume document types to ensure the optimal number of document matches and accurate character recognition is achieved.

Recognition strategies can commence in a lab environment as soon as the bank makes batches of documents available. This service is most effective if follow-up engagements are planned so that strategies can be refined/redefined as document mixes and system workloads change/increase.

This service focuses on the recognition performance of the higher volume documents at the bank. These higher volume documents are identified from information collected during the Requirements definition. The service begins with the installation of the Recognition Analysis tools (included with the ImageMark Advantage software), then many images of the high volume documents are captured to create a recognition analysis database. The tools are then used to define and test various recognition strategies, on an item-by-item basis, in order to optimize the recognition results.

Most of this effort will be completed before the start of live production. However, it may be necessary to defer some of the recognition tuning for certain redesigned documents that are not sufficiently represented before live production. The bank's Recognition Tuning Analyst will work alongside the NCR consultant to augment his/her training.

Service Deliverables

Service deliverables include:

- Reinforcement of customer education
- Assistance in creating recognition strategies
- Finely-tuned recognition capture system

Benefits

The benefits of the Recognition Tuning Service include:

- Improved operator productivity
- Maximized character recognition read rates
- Fewer recognition reject rates

File Migration

Service Description

The file migration service provides the customer with the technical and operational expertise to convert the existing system information and imaged documents (if the current system is an imaging system) to the ImageMark Advantage system.

This involves the development of:

- A project workplan
- The technical specifications and methodology
- The physical conversion of the archive
- Estimate of the project cost

This is a complete turn-key service, but depending on the expertise level of the operational staff, some functionality may be completed by the customer.

Service Deliverables

The service deliverables include;

- A project plan (including cost estimates)
- Technical procedures
- Operational estimates
- Conversion schedule

Benefits

The bank receives assistance in converting its existing files, resulting in a more rapid assimilation of archive data than could be achieved without this service.

System Administration Training

Service Description

The System Administration Training service provides supplemental technical training to the bank's ImageMark Advantage System Administrator. This training provides in-depth, system-level knowledge of the system architecture, image database, workflow, system utilities, reports, daily back-up, plus startup and shutdown procedures. This will be delivered as a hands-on workshop for/with the ImageMark Advantage lead system administrator. It is intended to enhance the technical level of the system administrator for banks which may not have dedicated full time administrators or have experience turnover and need additional training.

This training can be delivered with the base Installation service or as a follow-on service.

Service Deliverables

The system administrator will be instructed in:

- Start up/shutdown procedures.
- Back-up/Restart procedures
- Ability to make ImageMark Advantage Application generator changes and apply them to the system
- Making/Testing sort pattern changes
- Assist/Test the acceptance test plan
- Be the central point of contact for, and work with, NCR global support to resolve operational problems

Benefits

The bank benefits from Systems Administration Training because a trained System Administrator is instrumental in achieving greater efficiency and system up-time.

Project Management

Service Description

The NCR Project Management service delivers comprehensive project management, to ensure the Imagemark Advantage solution is delivered on time and within budget, and that it results in the increased capabilities for which it was intended.

This service is proactive and is intended for customers with little or no on-site project management resources. The service is delivered primarily on-site and manages both the customers and NCR's delivery. The NCR project Manager reports directly to the management function of the customer.

The methodology utilized to deliver the service is known as GlobalPM, a standard in the information technology industry. Leveraging the experience of more than a decade of large-scale multi-vendor projects and the technology leadership of NCR Corporation, GlobalPM provides the proven methodology and seasoned project managers to make projects successful.

The Project manager is engaged very early in the process. Utilizing successful work breakdown structures from similar implementations, the PM works with the Implementation team to establish a detailed project implementation schedule.

An NCR Project Manager will coordinate NCR and bank resources in establishing and meeting the critical milestones, and in developing solutions to unforeseen problems. The NCR Project Manager becomes the primary point of contact between the bank and NCR.

The NCR Project Manager's responsibilities include the following:

- Develop and manage the overall Project using NCR's GlobalPM methodology
- Set expectations for project time frames, responsibilities, and deliverables with bank and NCR personnel
- Prepare project documents and presentations to conduct the Project kick-off meetings
- Orient the bank's Project team with the overall project requirements.
- Develop, maintain, and manage the project schedule and budget to meet expectations.
- Identify and obtain the critical NCR resources for the Project team and work with the bank in identifying personnel required
- Ensure that clear project objectives and expectations are uniformly understood.

- Coordinate equipment staging and delivery, NCR installation personnel and the development of the installation documentation.
- Coordinate equipment staging and shipment to meet the installation dates in the project schedule.
- Confirm receipt of delivered equipment and review the capture of serial numbers for asset tracking and maintenance support purposes.
- Participate in the development of each deliverable and perform quality assurance and present to the bank for acceptance and sign-off.
- Act as a key participant in the delivery of all the consulting, implementation, and education services to ensure that the bank's environment is prepared to accept a new image system, that the bank's resources are familiar with the ImageMark Advantage process and fully understand their future roles and responsibilities, and that system expectations are met.
- Schedule and coordinate training
- Conduct a post-training review to identify areas of focus for any additional training requirements.
- Make recommendations based on past experience (banking, banking operations, image implementations) to help make the implementation and on-going support more efficient and effective.
- Assist the bank in developing a communications strategy so that upon system implementation the bank's resources are familiar with the new system, its operation and its benefits.
- Prepare for and conduct weekly status meetings to discuss Project status, schedules, milestones, issues, budget and forthcoming activities.

The successful implementation of the ImageMark Advantage program depends on the coordination and completion of many activities over a period of time. Our approach utilizes our proven GlobalPM methodology, and provides highly trained professionals to plan, schedule, and control the complex elements of the project to ensure they are successfully implemented in accordance with the bank's time, cost, and performance objectives. A certified Project Manager will assume ownership of the coordination of all resources (bank, NCR, other vendors) to ensure that critical milestones are met and unforeseen problems are addressed by the responsible parties.

Service Deliverables

The service delivery includes:

- Detailed milestone and resource driven project plan
- Comprehensive risk management plans
- Interim schedule updates
- Project status reports and issue resolution tracking/status
- Effective change control process and documentation
- Customer satisfaction review and project close report

Benefits

The value of project Management includes:

- Delivery of the project on time, within budget, and to the bank's specific requirements
- Minimized risk of disruption by thorough implementation planning, risk analysis, and contingency planning
- Alignment of project plans & milestones to the bank's business objectives
- Better utilization of resources by organizing and focusing on project goals
- Single point of contact
- Coordinated/managed installation
- Milestone management

Enhanced Training

Service Description

This service provides the bank MIS and operations staff with an overview and understanding of the hardware and base software modules associated with an ImageMark Advantage solution. It focuses on MS-NT, system administrations, recognition tuning, and parameter generation. This service will provide formal training on the ImageMark Advantage solution. It is intended for customers that want more in-depth knowledge of the product, and ImageMark Advantage features and functions.

The training provides in-depth, system-level knowledge of the system architecture, image database, application workflow, system utilities, reports, plus startup and shutdown procedures.

All bank operations staff who will be involved with the new solution are trained. This service extends to all aspects of the system. Depending on the mix of application modules selected, the familiarization extends from capture through report and disk generation and includes document preparation, correction procedures, balancing, and administration training.

This service also provides the local customer operations staff with training on the operations of the various types of NCR transports. It highlights the transport functionality, error correction, and speed of operations (I.e. keying, balancing, etc.).

Operator training is a “train-the-trainer” program designed to teach the bank's training personnel how to process documents and how to conduct their own onsite training. Four positions are available and normally attendees are split between training specialists and senior operations staff.

Bank associates learn how to process documents in a “generic” ImageMark Advantage environment. Using a combination of individual one-on-one work and hands-on training, bank associates are introduced to the Imaging approach to all operations, from Document Preparation to Day 2 activities.

NCR Professional Service associates also assist bank associates in developing their own onsite training plan. Bank associates are provided with all training materials used in the training and can begin work to customize these materials for their own training standards during the session.

Service Deliverables

The bank's employees are professionally trained resulting in faster ramp-up and greater productivity. The training lasts one week (40 hours).

Benefits

The benefits of Enhanced Training are:

- A professionally trained operations staff
- Greater efficiency and up-time
- A staff that is prepared to functionally operate the ImageMark Advantage solution

Host Interface

Service Description

The NCR Host Interface service provides the consulting surrounding the software to reformat the transactions captured and balanced in the system, and convert them into a format acceptable to the account processing host. This service is required when new hosts are utilized and the solution does not have a previously developed interface. This service will require coordination with the host to obtain file formats and to accomplish reformat certification.

Service Deliverables

The service provides the consulting and the software program which reformats transactions into host processing formats.

Benefits

This service enables the bank to seamlessly fit ImageMark Advantage for all its existing check processing operations, regardless of the host format required.

Customization

Service Description

The customization service provides the customer the ability to incorporate specific bank functionality into the ImageMark Advantage solution. The extent and magnitude of the changes are specific to the institution and depends on the perceived value of the modifications.

Service Deliverables

This service is delivered in the form of a custom application written and tested to user specifications. The cost for “customizing” the application is directly proportional to the cost of system, programming and testing effort required.

A special quote will be provided for each request.

Benefits

This service allows customer-specified functionality to be integrated into the ImageMark Advantage solution.

Document Analysis and Design

Service Description

The Document Analysis & Design (DAD) service provides a qualified professional to work with the bank to review documents and make recommendations for redesign. To take full advantage of the ImageMark Recognition software, documents over which your institution has control should be redesigned to improve image quality. In addition, documents should be enhanced to achieve improved automatic character recognition rates. The service provides a consistent methodology to allow the bank to take full advantage of the ImageMark Advantage recognition software. The DAD service addresses forms layout, field features, MICR encoding, and the Print Contrast Signal (PCS) characteristics on the bank documents.

The service begins with analyzing samples of documents currently being processed and continues through the implementation of document redesign recommendations. A detailed survey of some of the highest volume business checks, a sampling of personal checks, and other internal documents. During the engagement, each supplied document is cataloged and analyzed with respect to its state of image readiness. Items that can be made more image ready via redesign are identified, and suggested redesign specifications provided.

Redesign specifications will be attained which allow the bank to contact their print vendor of choice to initiate creation of document prototypes. On site discussions and introduction of standard specification formats allow the bank's personnel to continue to develop image-ready forms after the initial high-volume items are introduced. NCR will be available for 30 days after the closing report for telephone consultation to provide review and feedback for the first few forms specified by the bank. A forms specification database is provided, which requires a Microsoft Access application database to view.

Service Deliverables

The Document analysis & Design service deliverables include:

- Image readiness assessment of the bank's documents
- Assistance in definition of document revisions
- Recommendations on document revisions
- Training customer to perform this function on an ongoing basis

Benefits

The benefits of DAD are actually greater the earlier in the cycle the service is started. An early DAD engagement allows the redesigned documents to make their way into circulation before the ImageMark Advantage processing begins.

The value of this service includes:

- Maximized character recognition read rates
- Improved image quality for display, print, and compression purposes

Workspace Planning and Design

Service Description

The Workspace Planning & Design service will assist the bank in developing and modifying the layout of the proposed installation site to meet your unique processing and workflow requirements.

The bank's ImageMark Advantage system requires hardware components which may require a significantly different workspace design, including; work flow considerations, physical specifications, electrical changes, environmental requirements, and space allocations (e.g., transports, servers, clients, large monitors etc.). NCR will provide the bank with information and consulting to assist in developing a workspace environment that will effectively use the space available.

This process will include three on-site meetings, in addition to the research and design effort, to complete the Workspace Design service. The initial meeting will identify the essential contacts associated with the Workspace Design process, as well, as discussions about their specific roles in the design. Additional information will be provided to allow the bank to begin the process and select ancillary products to support the new system. A physical site survey will also be included during this visit. The bank will provide NCR with a site location diagram (blueprint, drawing, etc.) to be used for the site design, as well as specific workflow requirements and considerations.

NCR will provide from two to five alternatives or changes to the physical site design as required. The final decision will be the bank's to assure that specific requirements for operation are met. NCR does not assume responsibility for fire regulations, city ordinances, ancillary product vendors or other restrictions and conditions not under their direct control. The local NCR Customer Support Engineers will inspect and validate the actual design and site modifications.

Service Deliverables

Service deliverables include:

- Workspace Design planning meetings
- Site and design survey including site specification information
- Suggestions for ancillary vendor's equipment placement
- Workflow/physical layout plan
- Logical network layout for the local operations area
- Site validation by NCR Customer Engineers

Benefits

The value of Workspace Planning & Design include:

- Meeting the clearing deadlines due to a smooth, efficient workflow
- Operator harmony in the new “production-line” style environment

Disaster Recovery

Service Description

The Disaster Recovery service offering provides a processing platform for bank's to continue their mission critical operations when the institutions becomes paralyzed by a wide range of disruptions - ranging from natural disasters to maintenance downtime. The Disaster Recovery service has been tailored for all of NCR's products within the ImageMark solution set along with those of some of NCR's Partners.

NCR offers the most comprehensive disaster recovery solution in the industry. With more than 15 years experience, NCR has provided disaster recovery services directly or indirectly for more than 1,000 financial institutions.

Service Deliverables

The Disaster Recovery service offering consists of a fully equipped hot site facility ready for continuing the bank's processing in the event of a disaster (which may be caused by, though not limited to, fire, flood, weather damage, vandalism, power failure, etc.). The hot site is ready to meet emergency payment processing needs with a highly secure area to ensure the safety of the bank personnel and data. With all the necessary processing systems and communication lines in place, NCR will make sure that the bank's transition to this alternate site is as smooth as possible until the disruption has been resolved.

NCR provides:

- Detailed and Documented Planning with the bank in preparation for a possible disaster event
- Notification of and scheduling of annual tests to ensure rapid changeover in the event of a disaster

Specific to ImageMark Advantage, the Disaster Recovery options include:

Standard Package A

- One 7780 with controller, servers, workstations, and printers
- Hot site (located in Plainfield, Indiana, where the computer equipment and all other related machines in conjunction with the agreement are located and where emergency backup procedures would take place) and 16 hours a year SA service
- A systems technician trained in the operation of the system and peripherals, including, though not limited to, the operating system, loading and unloading files, libraries, managing the print and job queue, communications, item processing operations, imaging, and general systems operation
- Voice telecommunications and office space for bank personnel use
- The bank is responsible for additional servers, workstations, printers and all other non-standard hardware
- The bank is responsible for software, software licenses and software support
- NCR provides the Disaster Recovery solution when ImageMark Advantage is sold directly and with partners that fully support the ImageMark Advantage solution.

Standard Package B

- Two 7780's with controllers, servers, workstations, and printers
- Hot site (located in Plainfield, Indiana, where the computer equipment and all other related machines in conjunction with the agreement are located and where emergency backup procedures would take place) and 16 hours a year SA service
- A systems technician trained in the operation of the system and peripherals, including, though not limited to, the operating system, loading and unloading files, libraries, managing the print and job queue, communications, item processing operations, imaging, and general systems operation
- Voice telecommunications and office space for bank personnel use
- The bank is responsible for additional servers, workstations, printers and all other non-standard hardware
- The bank is responsible for software, software licenses and software support
- NCR provides the Disaster Recovery solution when ImageMark Advantage is sold directly and with partners that fully support the ImageMark Advantage solution

Benefits

The bank is assured of the integrity of the ImageMark Advantage System and all the data it has processed.

The value of this service includes:

- Dedicated Disaster Recovery processing facility, staff and equipment
- Highest level of bank support in the industry which includes test preparation, software loading, trouble shooting, communications setup
- Customer news letter
- Regular contact from NCR Disaster Recovery to review hardware and software configuration changes
- Regular requests for updated backup tapes
- Notification of and scheduling of annual tests
- Close proximity of the hot stage site to a major airport
- Federal Reserve agreement for presentment of checks
- Demo facility for ImageMark Advantage solution

Professional Services “On-Call”

Service Description

Professional Services “On-Call” is a post installation service which provides technical operational support to the ImageMark Advantage user on an as needed basis. The service focuses on those customers, which do not employ the technical in house expertise to perform vital or routine maintenance functions on the ImageMark Advantage solution. The service can also be utilized when operational problems need to be resolved by an on-site visit.

The service works in conjunction with NCR software maintenance. Support calls needing professional Services involvement will be transferred to and resources by the Professional Services “On-Call” support personnel. It is not a substitute for software maintenance.

The service will require dial-in modem support capability.

Service Deliverables

Professional Services “On-Call” support is available from 8-5(CST), M-F, excluding normal holidays.

Benefits

The bank has access to pre-established Professional Services support at a discounted price.

Image Planning/Strategy Consulting

Service Description

The Strategic Business Planning Service focuses on medium and large financial organizations and facilitates the definition and confirmation of a strategic direction for technology in payment solutions. The initial step in the process is to review the overall bank business objectives/priorities and relate these to Item Processing business objectives/priorities. With these objectives in mind a Business Plan is developed that focuses on measurable results and the advantages new technology can provide. Integration of new technologies that leverage the customer's existing platform and have a positive business case is a key deliverable. The resulting plan will be business-driven, not technology-driven, and immediately actionable.

Service Deliverables

The service deliverables include:

- Business plan
- Vision and Mission Statements
- Goals, objectives and critical success factors
- Strategies for achieving goals and objectives
- Identification of programs and projects to support the business plan
- Business cases to support the plan

Benefits

Benefits to the customer include:

- Strategic planning for payment solutions is linked to overall Business Plans and priorities.
- Tactical technology-related direction is set within the framework of the overall strategic plan.
- Business cases are documented to support funding decisions.
- Programs and projects are identified.

Audit/Tune-Up Consulting

Service Description

This is a post-implementation service which provides an extensive review of the item processing function. It gages the efficiency of the function and identifies opportunities for improvement. The service facilitates a review of the speed and accuracy of the item Process function and defines a correlation with processing deadlines and quality targets. Best practices are reviewed and compared to industry standards.

Areas of investigation include:

- Image quality and availability of over the counter transactions
- Effectiveness of capture procedures
- Balancing and error correction techniques
- Operator efficiency and training
- Staffing levels
- Turnover

The Audit/Tune-up service will be customized to meet specific customer needs.

Service Deliverables

The deliverables of the service include:

- Thorough on-site review and evaluation
- Written report of observations and problems
- Written recommendations

Benefits

The benefits to the customer include:

- Identification of problems and corresponding remedial actions
- Error reduction
- Improved deadline performance
- Quality of output and ripple-through improvements in downstream processing
- Cost reductions

Index

A

Adjustments

- advice 2-18
- advice notices 2-22
- balancing transactions 2-18

Advice notices 2-18, 2-22

Amount Entry 4-19

Amounts

- automated recognition 2-12
- balancing transactions 2-18
- entering 2-14

Applications

- Amount Entry 4-19
- Balancing 4-19
- CD Distribution 1-12, 3-5, 4-19
- End of Day Utility 4-19
- graphical interface 1-11
- Parameters 4-18
- Reject Repair 4-19
- Research 3-2, 4-19
- Statements 1-12, 3-8, 4-19
- Supervisor Service 4-18

Archive

- POD data 2-26

B

Backup

- POD 2-27

Balancing 2-18, 4-19

- advice notices 2-22
- transactions 1-9

Benefits

- ease of use 1-11
- faster data capture 1-10
- faster transaction balancing 1-9
- flexibility 1-11
- improved productivity 1-9
- industry standards 1-14
- open system 1-14

- reduced labor expense 1-11
- reducing labor 1-8
- scalability 1-13
- single-source solution 1-8

C

CD Distribution

- overview 1-12, 3-5, 4-19

Check processing

- amount recognition 2-12
- applications 1-2
- archiving data 2-26
- balancing transactions 2-18
- capturing documents 2-10
- data capture 1-10
- encoding documents 2-20
- entering amounts 2-14
- image-based processing 1-6
- item-processing transports 1-10, 4-12
- managing system resources 2-27
- managing system workflow 2-27
- preparing documents 2-8
- printing advice notices 2-22
- reject repair 2-16
- sorting documents 2-20

Checks

- amount recognition 2-12
- capturing data 2-10
- preparing documents 2-8
- reject repair 2-16
- researching 3-2

Considerations

- equipment requirements 1-18
- installation requirements 1-18
- space requirements 1-18

Costs

- improved productivity 1-9
- reduced labor 1-11

Courses

- operations 5-2

D

- Data security
 - dual-purpose transport 1-17
 - mirrored disks 1-16
 - multi-site operability 1-17
 - standby disk 1-16
 - tape backup 1-16
 - uninterruptible power supplies 1-16
- Deposit slips
 - amount recognition 2-12
 - capturing data 2-10
 - preparing documents 2-8
 - reject repair 2-16
- Documents
 - capturing 2-10
 - encoding 2-20
 - preparing 2-8
 - reject repair 2-16
 - researching 3-2
 - sorting 2-20

H

- Hardware
 - compatibility 1-15
 - data security
 - mirrored disks 1-16
 - standby disk 1-16
 - tape backup 1-16
 - uninterruptible power supplies 1-16
 - equipment requirements 1-18
 - industry standards 1-14
 - installation requirements 1-18
 - item-processing transports
 - dual purposes 1-17
 - NCR 7780 1-10, 4-12
 - NCR 7790 1-10, 4-12
 - NCR 7795 1-10, 4-12
 - LANs 1-4, 4-20
 - managing system resources 2-27
 - scalability 1-13
 - servers 1-3
 - system architecture 4-2
 - transport 4-12
 - workstations 1-4, 4-16
- Host systems
 - compatibility 1-15

I

- Image Statements 3-8
- ImageMark Advantage
 - applications
 - Amount Entry 4-19
 - Balancing 4-19
 - CD Distribution 3-5, 4-19
 - End of Day Utility 4-19
 - Parameters 4-18
 - Reject Repair 4-19
 - Research 3-2, 4-19
 - Statements 3-8, 4-19
 - Supervisor Service 4-18
 - benefits 1-8, 1-10
 - CD-ROM Delivery 1-12
 - components 1-3, 4-1
 - Data capture and item processing 2-1
 - equipment requirements 1-18
 - image-based processing 1-6
 - installation requirements 1-18
 - Item processing 2-1
 - overview 1-2
 - products 1-2
 - space requirements 1-18
 - Statements 1-12
 - system architecture 4-2
 - training
 - operations 5-2
- Images
 - amount recognition 2-12
 - capture 4-12
 - capturing 2-10
 - CD Distribution 1-12
 - image-based processing 1-6
 - servers 1-3, 4-3
 - signature cards 3-4
 - Statements 1-12
- Installation
 - requirements 1-18
- Item data
 - capturing 1-10, 2-10
- Item-processing transports
 - dual purposes 1-17
 - NCR 7780 1-10, 4-12
 - NCR 7790 1-10, 4-12
 - NCR 7795 1-10, 4-12
 - scalability 1-13

L
LANs

- Ethernet specifications 4-20
- functions 1-4
- hardware 4-20
- software 4-20

M
MICR data

- amount recognition 2-12
- archiving 2-26
- capturing 2-10
- reject repair 2-16
- servers 1-3, 4-3

Mirrored disk 1-16

P
Parameters 4-18**POD**

- archiving data 2-26
- balancing transactions 2-18
- capturing documents 2-10
- controlling system access 2-27
- encoding 2-20
- entering amounts 2-14
- generating reports 2-23
- managing system resources 2-27
- managing system workflow 2-27
- preparing documents 2-8
- printing advice notices 2-22
- recognizing amounts 2-12
- reject repair 2-16
- roles 2-27
- sorting 2-20
- system administration 2-27
- users 2-27

Professional services

- consulting 1-19
- migration 1-19
- training
 - operations 1-19

R
Recovery

- dual-purpose transport 1-17
- mirrored disks 1-16
- multi-site operability 1-17
- standby disk 1-16
- tape backup 1-16
- uninterruptible power supplies 1-16

Reject Repair 4-19**Reports**

- End of Day Utility 4-19
- generating POD reports 2-23

Requirements

- equipment 1-18
- installation 1-18
- space 1-18

Research

- overview 3-2, 4-19
- searching for items 3-2
- signature verification 3-4

Roles

- POD 2-27
- Supervisor Service 4-18

S
Security

- data
 - dual-purpose transport 1-17
 - mirrored disks 1-16
 - multi-site operability 1-17
 - standby disk 1-16
 - tape backup 1-16
 - uninterruptible power supplies 1-16
- POD 2-27
- Supervisor Service 4-18

Servers

- CAR 1-3, 4-3
- common services 1-3
- distributed processing 1-3
- image files 1-3, 4-3
- LAR 1-3, 4-3
- MICR data 1-3, 4-3
- Research 1-3, 4-3
- scalability 1-13

Signature cards

- displaying 3-4
- scanning 3-4

Index

verifying signatures 3-4

Statements

CD Distribution 3-5

formatting 3-8

generating 3-8

overview 1-12, 3-8, 4-19

printing 3-9

Statuses

managing workflow 2-27

Supervisor Service 4-18

T

Tape backup and restore software 1-16

Templates 3-8

Training

Education Coordinator 5-2

Financial Solutions Center 5-2

operations 1-19, 5-2

Transactions

balancing 2-18

faster balancing 1-9

Transport 4-12

U

Users

POD 2-27

Supervisor Service 4-18

W

Workflow 2-27

Workstations 1-4, 4-16

scalability 1-13



User Feedback Form

Title: ImageMark Advantage 1.0 Product Information

Number: B004-0000-0245

Issue: 01.00.00

Date: August 2000

NCR welcomes your feedback on this publication. Your comments can be of great value in helping us improve our information products.

Cut

Circle the numbers below that best represent your opinion of this publication.

Ease of use	5	4	3	2	1	0	5 = Excellent
Accuracy	5	4	3	2	1	0	4 = Good
Clarity	5	4	3	2	1	0	3 = Adequate
Completeness	5	4	3	2	1	0	2 = Fair
Organization	5	4	3	2	1	0	1 = Poor
Appearance	5	4	3	2	1	0	0 = Not applicable
Examples	5	4	3	2	1	0	
Illustrations	5	4	3	2	1	0	
Job performance	5	4	3	2	1	0	
Question resolution	5	4	3	2	1	0	
Overall satisfaction	5	4	3	2	1	0	

Indicate the ways you feel we could improve this publication.

- | | |
|--|---|
| <input type="checkbox"/> Improve the table of contents | <input type="checkbox"/> Add more/better quick reference aids |
| <input type="checkbox"/> Improve the overview/introduction | <input type="checkbox"/> Add more examples |
| <input type="checkbox"/> Improve the organization | <input type="checkbox"/> Add more illustrations |
| <input type="checkbox"/> Improve the index | <input type="checkbox"/> Add more step-by-step procedures |
| <input type="checkbox"/> Make it less technical | <input type="checkbox"/> Add more troubleshooting information |
| <input type="checkbox"/> Make it more concise/brief | <input type="checkbox"/> Add more detail |

Write any additional comments you may have below and on additional sheets, if necessary. Include page numbers where applicable.

Cut

Fold

If we may contact you concerning your comments, please fill in the information below.

Name: _____

Organization: _____

Company: _____

Address: _____

Phone: _____ Fax: _____

Thank you for your evaluation of this publication. Fold the form where indicated, tape (please do not staple), affix sufficient postage, and drop in the mail.

Fold



AFFIX
SUFFICIENT
POSTAGE
HERE

NCR WATERLOO

ATTENTION: USABILITY & INFORMATION ENGINEERING

580 WEBER STREET NORTH

P.O. BOX 1611

WATERLOO, ONTARIO, CANADA

N2J 4G5

