

**Barcode & OCR Package
- Intelligent Version**

User's Manual Part I

**Barcode & OCR Package - Intelligent Version
Version 4.5**

**User's Manual - Part I
© Copyright Ricoh Europe PLC 2026
All Rights Reserved**

Ricoh Europe PLC

Preface



Barcode & OCR Package - Intelligent Version

User's Manual - Part I

Version Number 4.5.0.20260625

Ricoh Support Information

Ricoh Europe PLC
P.O. Box 114
1180 AC Amstelveen
The Netherlands
Tel: +31-(0)20-5474-111
Fax: +31 (0)20-5474-222
Web page Europe: <http://www.ricoh-europe.com>
Web page Support: <http://www.ricoh-support.com>

License Agreement

This is a legal agreement. By installing this software, you accept all the terms and conditions of this agreement. This Ricoh Europe PLC ("Ricoh Europe PLC") License Agreement accompanies the Ricoh Europe PLC Barcode & OCR Package - Intelligent Version ("Software") and related materials in writing or electronic format ("Documentation").

Grant of License

Upon your acceptance of this agreement, Ricoh Europe PLC grants to you a non-exclusive royalty-free license, with the right to install and use the Software. Each licensed component may be installed on a single print server, and the administrative applications and client components/applications may be installed on an unlimited number of computers connected with the same network.

Copyright

All the intellectual property rights in the Software are owned by Ricoh Europe PLC, and the software is protected by copyright laws and international treaty provisions. Therefore, you must treat the Software as any other copyrighted material except that you may make one copy of the Software solely for backup or archival purposes, as long as you otherwise comply with the terms of this Agreement. You may not copy the Documentation accompanying the Software for any reason whatsoever.

Restrictions

You may not rent or lease the Software. You may, however, transfer your rights under this Agreement on a permanent basis, provided you assign all your rights under this Agreement to the transferee, transfer to the transferee all copies of the Software, all Documentation and retain no copies in any format or on any media, and the transferee agrees to be bound by the terms of this Agreement. Any transfer of the Software must include the most recent update and all prior versions of the Software. You may not modify, adapt, translate,

reverse-code, de-compile, or disassemble the Software, or make any attempt to discover the source code to the Software, save that nothing under this Agreement shall affect your rights under the European Software Directive Number 91/250EEC.

Limited Warranty

Ricoh Europe PLC warrants that the Software will perform substantially according to the Documentation for thirty (30) days from the date of installation. Ricoh Europe PLC does not warrant that the operation of the Software will appear precisely as described in the Documentation or that the Software will be free from errors.

RICOH EUROPE PLC EXCLUDES ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF SUITABILITY AND FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE SOFTWARE AND ITS ACCOMPANYING DOCUMENTATION.

Limitations of Liability

Ricoh Europe PLC's entire liability and your exclusive remedy shall be, at Ricoh Europe PLC's option, either (1) return of the price paid, or (2) repair or replacement of the Software that does not meet Ricoh Europe PLC's limited warranty and which is returned to Ricoh Europe PLC with proof of purchase within forty-five (45) days from the date of purchase. This limited warranty is void if failure of the Software resulted from accident, abuse, or misapplication. Any replacement of the Software will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer.

IN NO EVENT SHALL RICOH EUROPE PLC BE LIABLE FOR ANY DAMAGES WHATSOEVER (INCLUDING WITHOUT LIMITATION, DIRECT, INDIRECT, INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES FOR LOST PROFITS, LOST SAVINGS, BUSINESS CORRUPTION, OR OTHER PECUNIARY LOSS) ARISING OUT OF THE USE OR INABILITY TO USE THE SOFTWARE OR DOCUMENTATION; EVEN IF RICOH EUROPE PLC HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

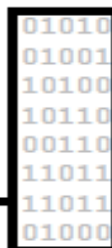
Governing Law and General Provisions

This Agreement is governed by the laws of The Netherlands. If any part of this Agreement is found void and unenforceable, it will not affect the validity of the balance of the Agreement, which shall remain valid and enforceable according to its terms. You agree that the Software will not be shipped, transferred, or exported into any country or used in any manner prohibited by any export laws, restrictions, or regulations. This Agreement may be terminated if you fail to comply with any term or condition of this Agreement. This Agreement may only be modified in writing signed by an authorized officer of Ricoh Europe PLC

Third Party Trademarks

Microsoft and Windows are registered trademarks of Microsoft Corporation. Adobe is a registered trademark of Adobe Corporation. HP is a registered trademark of HP. Other company, product, or service names may be trademarks or service marks of others.

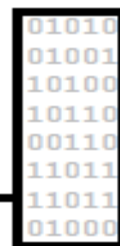
Table of Contents



1. INTRODUCTION.....	7
1.1 Conventions Used in This Manual.....	7
1.2 Documentation for the IBS solution.....	8
1.3 The Product and its Components.....	9
1.4 The Mechanism.....	10
1.5 System Requirements.....	10
1.5.1 Device Requirements.....	11
1.5.2 Issuing System Requirements.....	11
1.5.3 IBS-CC and Managing Station Requirements.....	11
1.5.4 Network Requirements.....	11
1.6 Supported Devices.....	11
1.7 Supported System Base Media Types.....	11
1.8 Supported Barcode Types.....	12
1.9 Licensing.....	12
1.10 Status Read-back Integrity.....	12
1.11 Installation.....	12
1.12 Testing.....	13
1.13 Removal.....	13
1.14 Upgrading.....	13
1.15 IBS interoperability & compatibility information.....	14
2. IBS ON THE DEVICE.....	15
2.1 IBS Installation.....	15
2.2 Required Environment.....	16
2.2.1 Requirements of the Device.....	16
2.2.2 IBS Application Version.....	16
2.3 IBS Installation Procedure.....	17
2.4 Check for IBS Installation.....	17
2.4.3 For Architecture Type Bj Models with Installation Flow Type V.....	18
2.4.4 For Architecture Type Bc3 Models with Installation Flow Type VI.....	19
2.4.5 IBS Status Indication Files on the HDD Directory List.....	19
2.5 Testing IBS.....	20
2.5.1 Test Documents.....	20
2.5.2 Testing IBS Outside the Issuing System.....	21
2.6 IBS Removal.....	21
2.7 IBS Upgrading.....	21
2.8 IBS parameters and configuration.....	22
2.8.1 IBS related Ports on the Device.....	22
2.8.1.1 Diprint Port.....	22
2.8.1.2 IBS Communication Port.....	22
2.8.2 IBS Parsing mode: Byte mode vs Block mode.....	22
2.9 IBS status and error codes.....	23
3. IBS CONTROL CENTER (IBS-CC).....	24
3.1 Introduction.....	24
3.1.1 Managing Station System Requirements.....	24
3.1.2 Distribution of IBS-CC.....	25
3.1.3 Documentation of IBS-CC.....	25
3.2 Installation of IBS-CC.....	25
3.3 Removal of IBS-CC.....	26
3.4 Upgrading IBS-CC.....	26
3.5 Configuring IBS-CC.....	26
3.5.2 Timeouts & Retries.....	26
3.5.3 Alternative Diprint ports.....	27
3.5.4 Alternative IBS Communication Port.....	27
3.6 The User Interface of IBS-CC.....	27

3.6.1	Navigation in IBS-CC	29
3.6.1.1	Filter Functions	29
3.7	Operating IBS-CC	30
3.7.1	Device Discovery [IBS-CC: Scan]	31
3.7.2	Installation of IBS on the Device [IBS-CC: Install]	31
3.7.3	Licensing [IBS-CC: License]	31
3.7.3.1	Order License	31
3.7.3.2	Install License	32
3.7.4	Testing [IBS-CC: Test]	32
3.7.5	Removing IBS from the device	32
3.7.6	Upgrading IBS on the device	32
3.7.7	Debugging: [IBS-CC: Debug]	32
3.7.8	Forms: [IBS-CC: Forms]	33
3.7.9	Quicksets: [IBS-CC: Quicksets]	33
3.7.10	Upload a File on a device	33
3.7.11	Configuring IBS on the device	33
4.	LIMITATIONS	34
4.1.1	Limitations regarding the Issuing System	34
4.1.2	Limitations regarding Barcoding	34
4.1.3	Limitations regarding IBS on the device	34
4.1.4	Limitations regarding IBS-CC and the Managing Station	35
4.1.5	Other Limitations	36
5.	TROUBLESHOOTING AND SUPPORT	37
5.1	Troubleshooting	37
5.2	Support	38
A.	APPENDIX	39
A.1	IBS Error Codes	39
A.2	List of Figures	43
A.3	List of Tables	43
A.4	Appendix D: Device models	44
INDEX		46
GLOSSARY		48

Chapter 1



1. Introduction

The "Barcode & OCR Package – Intelligent Version", a.k.a. "Intelligent Barcode Solution" (**IBS**), is a piece of software which was developed in order to print barcodes on supported printing devices, using only PCL (PCL5) commands.

The purpose of this manual is to serve as a primary reference for the administrator with information related to the IBS product, its deployment and configuration.
Where necessary, supplementary documentation is being referred to.

To install, remove, configure IBS and handle licensing operations, the tool "**IBS Control Center**" (**IBS-CC**) is needed. IBS-CC is explained in chapter 3 "IBS Control Center (IBS-CC)" below. Please read it carefully before installing IBS.

IBS-CC installation can now be done by the administrator himself, without the need for help from a Ricoh CE.

Note: (HDD vs eMMC vs SSD)

Wherever in the IBS product UI and in this document the term "HDD" is used for a storage medium, besides hard disk, it is also to encompass

- Internal Storage (a.k.a. eMMC) in the case of an ARM.sGW controller, and
- SSD (solid-state drive) in the case of an Intel6.GWL controller.

1.1 Conventions Used in This Manual

Throughout the manual, you will find the following icon and typography conventions.



NOTE:

Most references to chapters, sections, tables, and figures are clickable hyperlinks.
To return to the previous position, click <Alt>+ "<-->".

Icon Conventions

At relevant points in the manual, icon symbols will appear to show you important information regarding Barcode & OCR Package - Intelligent Version.

Below are the icons used throughout this manual and their meanings:

Table 1-1: Icon Conventions

**NOTE:**

This symbol indicates precautions for operation and important points to consider when working with the software.

**WARNING:**

This symbol indicates potentially harmful situations to your computer's software that could result in damage or unnecessary work flow for your server.

**IMPORTANT:**

If this instruction is not followed, damage to the server or the data could occur. Please read carefully before continuing.

Typography Conventions

The typography conventions used throughout this manual are as follows:

- **Courier** is used for computer code to implement.
- An **arrow** (→) indicates the selection of a menu point and the following menu choice.
For example, **File → Open** would mean to select File then choose Open from the menu choices.
- **Bold** lettering indicates buttons, combo boxes, check boxes, and other dialogue box elements, as well as files, menus, and directions to open files and menus.
- <Angle Brackets> are considered placeholders within the text.
For example, <IP address> would be the particular IP address.

Figure Conventions

Red rectangles indicate the part of a figure that is referred to in the surrounding text.

All screenshots in this document were made with Windows XP and GW controller devices. For newer Windows versions or for devices with a different controller type (e.g. GWNX) they may look different.

1.2 Documentation for the IBS solution

This manual, "IBS User's Manual - Part I", is to serve as the primary document for IBS. For further information on this solution see the related manuals listed below.

Table : Documentation for IBS

Titel	File name	Description / Content / Purpose
ReadMe	readme.txt	Content of distribution medium, and last-minute Installation notes
User's Manual - Part I	IBS User's Manual - Part I .pdf	(this document): IBS product information & installation & configuration, using IBS-CC
User's Manual - Part II	IBS User's Manual - Part II .pdf	installing and configuring barcoding on an issuing system (e.g. SAP)
Barcode & OCR Printing - Technical Reference Manual	Technical Reference Manual .pdf	general information about barcoding and OCR printing (independent of IBS or SAP)
Barcode & OCR Printing - Device Information	Device Information .pdf	device model specific information about barcoding and OCR printing (independent of IBS or SAP)
		-- <u>SAP documentation</u>
Volume 1	Volume 1 .pdf	general information about SAP printing and Device

		types (independent of IBS)
Volume 2	Volume 2 [ZA0x] .pdf	specification of Ricoh's SAP Device type
Volume 2B	Volume 2B .pdf	barcoding under SAP
Volume 3	Volume 3 [DCxxx] .pdf	device model specific information

They are located on the distribution medium in the folders "\doc\\" and "\SAP\doc\\"", respectively.

If you cannot find one of these documents, please consult your Sales representative for further information.

For supplemental documentation related to IBS-CC, please refer to section 3.1.3 "Documentation of IBS-CC" on page 25 below.

1.3 The Product and its Components

IBS is divided into several components, which reside and act at 3 different locations:

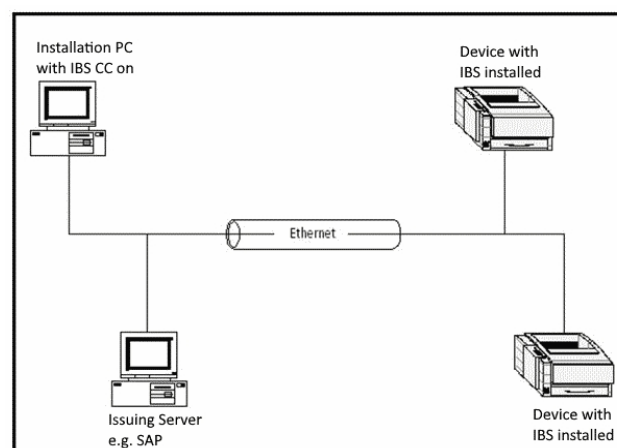
Table 1-2: Components of IBS

Location	Components	Description
Managing Station	IBS-CC	A Windows-based configuration tool for installing and configuring IBS on the devices. Also used for licensing purposes. Refer to chapter 3.
Device	IBS (base) IBS (main) CONVERT	The device-based part of IBS, which converts IBS pseudo PCL font select commands sent to the device to barcodes on the printed documents. Refer to chapter 2.
Issuing System	(system-specific)	In the case of SAP systems (R/3, mySAP ERP), this is an SAP spool server with an SAP "Device type", plus a tool to support the TCP raw printing. Refer to the IBS User's Manual - Part II.

System Diagram

The following diagram shows their connectivity.

Figure 1-1: System Diagram



1.4 The Mechanism

Printing barcodes using IBS is fairly easy. IBS can be used by all applications that are capable of inserting the corresponding IBS PCL font select commands into the spooled PCL data stream.

When a print job is sent to a printing device with IBS installed and active, it gets intercepted and processed by IBS.

If the data is PCL5, it gets further analyzed, and any barcoding related or other special commands get processed.

For data other than PCL5, IBS normally enters **pass-through mode**, where no modification is applied. For some kind of data this may fail; refer to [LIM88B].

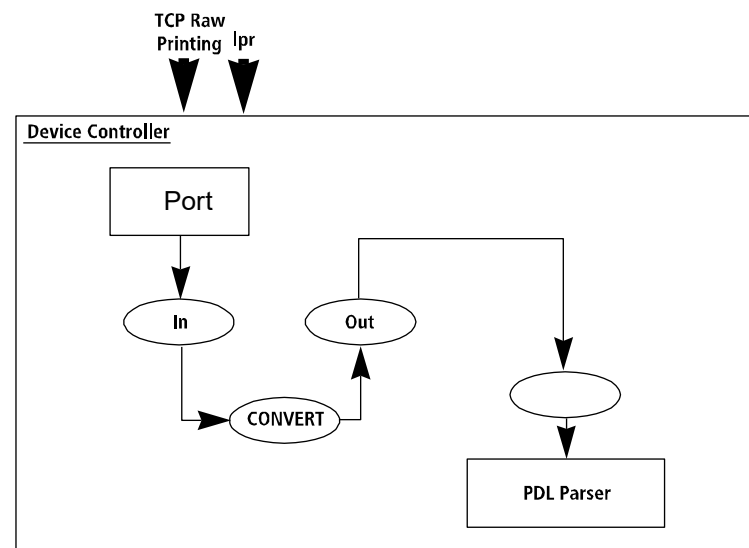
Print jobs for barcode printing can be sent via any port such as the TCP raw printing or the lpr port. The job is converted internally within the device and is then sent to the "Printer application" and its "PDL Parser".

The **"gpsfilter"** mechanism of the device's printer controller ensures the correct propagation of the print job data to the Printer application, and the correct routing of status read-back data in the reverse direction. IBS acts as a **"gps filter"**. Note that at any given time only 1 gps filter may be active on the device.

Note that network traffic to any printer port (e.g. 5001) or via any print protocol (lpr, ftp, rsh, ...) will thus be subject to the filtering.

The following diagram visualizes the connectivity situation at the device when the IBS solution is used with Architecture Type B Models.

Figure 1-2: Architecture Type B Models



Note: (Variants Bj, Bc3)

There are 3 variants of Architecture Type B models:

- Type **Bj**: is Java-based (component "IBS"), plus a small C-based core (component "IBS.gps").
- Type **Bc3**: works Java-less; it has 4 components, all C-based;

The use of just "B" refers to all variants collectively.

For some operations with Type Bj models 2 sub-variants need to be distinguished:

- the previous Type **Bjx** has a basic UI, whereas
- the newer Type **Bjs** has no UI.

The use of just "Bj" refers to both sub-variants collectively.

1.5 System Requirements

For each component and their locations, specific requirements exist regarding the installability of IBS and its run-time environment. These are specified hereafter.

1.5.1 Device Requirements

For the supported device models, refer to section 1.6 "Supported Devices" on page 11 below.

For necessary device settings refer to section 2.2.1 "Requirements of the Device" on page 16 below.

For information about the interoperability and compatibility of IBS with other software running on the device, please refer to section 1.15 "IBS interoperability & compatibility information" on page 14 below.

1.5.2 Issuing System Requirements

A platform (of an Issuing System) is supported if the printing architecture and barcode mechanism allow for a certain degree of control over the PCL commands in the print job data.

The following Issuing System platforms are supported:

- SAP systems (R/3, mySAP ERP)

For how to configure barcoding on a specific Issuing System, please refer to the IBS User's Manual - Part II.

1.5.3 IBS-CC and Managing Station Requirements

Refer to section 3.1.1 "Managing Station System Requirements" on page 24 below.
More than one Managing Station may exist.

1.5.4 Network Requirements

None specific.

All networks with target devices need to be reachable from the Issuing System and from a Managing Station.

TCP must not be blocked (by firewalls, nor on the devices).

1.6 Supported Devices

IBS Control Center detects and shows all MFP and printer devices in a network, and whether they are IBS compatible.

For information concerning the supported device models, please refer to the table in Appendix D on page 44 below.

For the proper Model name for a given Device Class, refer to Volume 1.

For more detailed information on a particular Device Class, please refer to the corresponding Volume 3. Both documents can be found in the folder \SAP\doc\ on the IBS distribution medium.

For general device requirements refer to section 1.5.1 "Device Requirements" on page 11 above.

1.7 Supported System Base Media Types

IBS can be installed on HDD.

IBS-CC automatically detects whether one of these storage media is present on the device: HDD, SSD; eMMC.

For whether a given device model has a HDD as standard or as an option, please refer to Volume 3 of the corresponding Device class.

For further information, please contact Technical support.

1.8 Supported Barcode Types

For a list of supported barcode types and how to print these barcodes, please refer to the IBS User's Manual - Part II.

1.9 Licensing

IBS can be installed in Demo Mode free of charge. Barcoding works correctly, but the word "DEMO" is shown across or next to each barcode symbol, while ensuring that the barcode can still be scanned or read, and a watermark gets printed on each page.



NOTE:

If IBS is installed in Demo Mode, a watermark will be printed on each page of every print job sent to this printer.

Note: When printing in Demo mode, the formatting of a page may get disrupted by an extra line break, which may even cause an extra page break. Refer to [LIM47D].

To remove these marks, an IBS license must be purchased.

IBS-CC facilitates the licensing process.

For how to order and install a license, please refer to section 3.7.3 "Licensing " on page 31.

1.10 Status Read-back Integrity

Status read-back is a means to control the reliable and successful printout of a job's pages on the target device. To achieve this, the device has to report on possible success or error conditions of the job and of the device.

Status read-back integrity means that IBS does not inhibit that mechanism.

IBS has PCL-based status read-back integrity, with the following limitations:

- PCL-based status read-back (~*s_X echo command) may not work on some devices.
- PCL-based status read-back via LPT or USB is not supported.

Note:

In case of complex jobs and/or slow devices, the diprint "timeout" value may need to be adjusted.

E.g. if the last page is complex, the connection may get closed before it has been ejected.

The default is 15 sec.

This is configurable via telnet; refer to section 2.8.1.1 "Diprint Port" on page 22 below.

To set it to e.g. 60 sec, use the syntax "diprint timeout 60".

Note: When in block mode, IBS may inhibit status read-back also on other ports.

1.11 Installation

There are three locations for the various components to be installed in order to use IBS.

Different procedures must be followed, depending on which part is to be installed.
The IBS components need to be installed in the given order.

Table 1-3: Components to be Installed

Location	Component	Instructions
1. Managing Station	IBS-CC	To install IBS Control Center, please refer to section 3.2 "Installation" on page 25 below.
2. Device	IBS (base) IBS (main) CONVERT	Use IBS-CC to install IBS. Refer to section 2.1 "IBS Installation" on page 15, and to section 3.7.2 "Installation of IBS on the Device [IBS-CC: Install]" on page 31 below. In case of problems, please contact Technical support.
3. Issuing System	(system-specific)	Please refer to the IBS User's Manual - Part II.

1.12 Testing

Refer to section 2.5 "Testing " on page 20 below.

1.13 Removal

For removal information for each component and location, please refer to the following table:

Table 1-4: Components to be Removed

Location	Component	Instructions
Managing Station	IBS-CC	For removing IBS Control Center, please refer to section 3.3 "Removal" on page 26 below.
Device	IBS (base) IBS (main) CONVERT	Use IBS-CC to remove IBS. Refer to section 2.6 "IBS Removal" on page 21, and to section 3.7.5 "Removing IBS from the device" on page 32 below. In case of problems, please contact Technical support.
Issuing System	(system-specific)	Please refer to the IBS User's Manual - Part II.

1.14 Upgrading

For upgrading information for each component and location, please refer to the following table:

Table 1-5: Components to be Upgraded

Location	Component	Instructions
Managing Station	IBS-CC	For upgrading IBS Control Center, please refer to section 3.4 "Upgrading IBS-CC" on page 26 below.
Device	IBS (base) IBS (main) CONVERT	Refer to section 2.7 "IBS Upgrading" on page 21, and to section 3.7.6 "Upgrading IBS on the device" on page 32 below. In case of problems, please contact Technical support.

Issuing System	(system-specific)	Please refer to the IBS User's Manual - Part II.
----------------	-------------------	--

1.15 IBS interoperability & compatibility information

This section states which settings and software on the device are compatible or may be incompatible with IBS. IBS-CC normally checks these conditions before installation, and may issue a warning or abort the installation.

SSL / Encryption

There is no interference between IBS and SSL. Also the processing of IBS-specific command sequences embedded in the print job and the applying of convert.ini settings are not impaired, as decryption takes place before the convert filter.

Authentication

If authentication is enabled on a device, the issuing system must provide for injecting the necessary credentials into the print job data stream.

Other software

For information about the interoperability and compatibility of IBS with other software running on the device, refer to the following notes:

Note: (Interoperability of IBS and Streamline NX (SLNX) v2)

If both SLNX v2 and IBS are used on the same device, no support can be given in case of problems. If the problem persists after removing IBS or after removing SLNX Embedded, of course, support can be given.

Note: (Interoperability of IBS and Streamline NX (SLNX) v3)

If both SLNX v3 and IBS are used on the same device, no support can be given in case of problems. If the problem persists after removing IBS or after removing SLNX Embedded, of course, support can be given.

Note: (Interoperability of IBS and Global Scan NX (GSNX))

It is possible to use GSXN and IBS on the same device. No limitations are known.

Note: (Interoperability of IBS and Enhanced Locked Print (ELP))

It is not possible to use Enhanced Locked Print v2 (ELP NX) and IBS on the same device.

(It should be possible, however, with v1.)

The presence of ELP NX is detected by IBS-CC before attempting to install IBS.

If IBS gets installed nonetheless, it will fail to start.

CAVEAT: ELP NX is by default contained in some firmware packages and may thus get installed tacitly.

In that case, if IBS was already installed on the device, a device failure (Service call, SC) may occur.

In any case, to get IBS to work, ELP NX needs to be uninstalled; it is technically not possible to just deactivate it.

Note: (Interoperability of IBS and RSI Control+)

It is not possible to use RSI (RICOH Smart Integration) Control+ and IBS on the same device.

Note: (Interoperability of IBS and PDL Filter)

It is not possible to use the device's PDL Filter and IBS on the same device.

Chapter 2



2. IBS on the device

This chapter contains information about IBS on the device, namely its installation, testing, removal, upgrading, and configuration.

IBS on the device is running as an Extended Feature, information about which can be seen and which can be stopped and restarted, from the device's operation panel or from Web Image Monitor (WIM). For the corresponding procedures refer to the device's Operating Instructions. Please observe the following specific behaviour.

Note: (Components: BOCR and BOCR.gps) [Architecture Type Bjx only]

For Architecture Type Bj, it appears as 2 separate Extended Features, named "BOCR" (Java-based part) and "BOCR.gps" (C-based part).

Note: (Components: IBS.bootup and IBS.gps) [Architecture Type Bc3 only]

For Architecture Type Bc3, it appears as 2 separate Extended Features, named "IBS.bootup" and "IBS.gps" (both C-based).

Note: For devices with Smart Operation Panel (SOP) the list of Extended Features may contain a lot of entries. Thus the IBS related entries may be scattered across different pages, whence scrolling may be necessary to see each entry.

Note: (Stopping and re-starting IBS)

In order for the status change to become effective, the device must be rebooted.

Note: (IBS information screen) [Architecture Type Bjx only]

The Extended Feature "BOCR" has no proper information screen; refer to limitation [LIM41D].

Note: (No UI for Architecture Type Bjs) [Architecture Type Bjs only]

There is no IBS related UI on the device panel. Corresponding operations need to be performed via Web Image Monitor (WIM).

2.1 IBS Installation

The information described in this section only refers to the installation of IBS in Demo Mode. Demo Mode means that the printed barcode will show the word "DEMO" on each barcode while ensuring that the barcode can still be scanned or read, and a watermark will be printed on the background of each page.

A license based on the device's serial number (a.k.a. machine id) must be obtained in order to enable Non-demo Mode, i.e. fully functional IBS. For information on the licensing procedure refer to 3.7.3 "Licensing [IBS-CC: License]" on page 31 below.

Different installation procedures are required for different models.
IBS-CC automatically picks and installs the correct components.

**NOTE:**

For any possible additional information regarding installation, please check for applicable Installation Notes (*i...) or (*j...) or (*F...) in the file "readme.txt".

Refer also to section 2.3 "IBS Installation " on page 17 below.

If the installation with IBS-CC fails, please contact Technical support.

2.2 Required Environment

This section describes the minimum requirements of the environment in order to install, remove or upgrade the IBS application on the device's HDD.

2.2.1 Requirements of the Device

For most of the requirements, IBS Control Center will automatically detect and report if one of these is not fulfilled, on an otherwise IBS compatible device.

For possible limitations, please refer to chapter 4 "Limitations" on page 34 below.

The following requirements apply for the devices on which you wish to install IBS.

- The device must be connected to an IP **network**.
- An **IP address** has to be assigned (ideally static, without DHCP).
- For the minimum required **firmware**, please contact Technical support.
Particularly for IBS "v4" and "v3" installations it is crucial to have IBS compatible firmware installed. IBS-CC checks this automatically upon installation and will otherwise inhibit an attempt to install IBS. Observe also [LIM48DB].
- For the minimum required device **memory** (RAM), please contact Technical support.
- **PCL5** must be present. For some models PCL5 is an optional feature; please contact Technical support.
Note: IBS-CC automatically checks whether PCL5 is present on the device.
- For Architecture Type Bj, the correct version of the **Java(TM)** platform (a.k.a. Java-SDK, SDK/J, Java VM) must be present on the device.
- For the PjL commands of the installation files and of print jobs to be properly executed, obey the following WIM settings under "Device Management" --> "Configuration" -->:
 - "Printer" --> "Permissions for Printer Language to Operate File System" : "PjL" must be set to "Permit".
 - "Security" --> "Extended Security" :
"Change Firmware Structure" (if exists) must be set to "Do not Prohibit".
Otherwise the commands would get printed out.
- For the installation one of these 3 **protocols** (and related **ports**) must be enabled on the device and on the network:
 - diprint (9001 or other),
 - ipps (443),
 - lpr (515).
- For printing via **USB**, the WIM setting "System" -> "Print Compressed Data" must be set to "Off".

2.2.2 IBS Application Version

IBS-CC contains the latest available versions of installation files for every Device Class supported. For the minimum required version of each IBS component, please contact Technical support.

2.3 IBS Installation Procedure

You will need to have Administrator rights in the network and on the devices you will be working with.

IBS-CC ensures that the correct version of each component gets installed.

For Architecture Type Bj and Bc3 device models, only HDD-based IBS systems can be installed.

Note: For **bulk** installation of IBS on multiple devices, observe the following:

It is not possible to select multiple devices and start their installation with a single click.

Instead, using IBS-CC, you first need to start the installation on one device; then, as soon as it has started, while it is still on-going, you can already select the next device and start its installation, and so on.

Thus multiple installation processes can be started, but they will run one after the other, not simultaneously.

For the installation of legacy device models, or in case of problems, please contact Technical support.

Installation Order

For each device, the IBS components on the device need to be installed in the following order.

① Prepare the device.

Before starting the installation on a device, make sure it has been properly prepared, as specified above.

Possibly change the Diprint port on the device; refer to section 2.8.1.1 "Diprint Port" on page 22 below.

Observe the other requirements specified above; refer to section 2.2.1 "Requirements of the Device" on page 16 above.

② Apply possible firmware updates on the device.

③ Install IBS on the device, using IBS-CC; refer to the procedure below.

④ Print a test page.

Procedure

Make an IBS-CC device discovery on the network where the devices reside.

For each device on which you want to install IBS:

Select the device.

Then start the installation (for details refer to IBS-CC documentation).

Note: The "Additional information" section on the IBS-CC [Install] screen shows the current device status and alerts, which may hint to potential problems during installation.

The remaining steps are performed automatically by IBS-CC.

IBS-CC applies the sub-steps in the correct order.

To check whether the installation was successful or not, refer to the following section.

2.4 Check for IBS Installation

There are several possibilities to check for the successful installation of IBS on a device.

Using IBS-CC

- Print a test page.

- Re-scan the network or the particular device, and check whether the IBS related fields on the devices pane are populated with the correct version numbers.

Without using IBS-CC

- Print the HDD Directory List
(refer to section 2.4.5 "IBS Status Indication Files on the HDD Directory List" on page 19 below).
- Check the Extended features with WIM or on the device panel.
The sub-sections below describe the steps to take to check for a particular device whether the IBS application is properly installed there, without using the IBS-CC application, e.g. if IBS-CC cannot properly determine this, by merely using WIM (Web Image Monitor).
Depending on the different model architecture types and installation flow types (IV, V), the procedures slightly differ.

2.4.3 For Architecture Type Bj Models with Installation Flow Type V

In order to check if an application has been installed, removed, or upgraded, go to the device main entry web page of Web Image Monitor (WIM) and select **Extended Features Info** in the Extended Feature Settings section. This web page will display any and all applications installed on the current device.

The "Status" must be

- **"Starting Up"** for "BOCR" ("Suspend"(!) on older models), and
- **"Waiting"** for "BOCR.gps".

Figure 2-3: Extended Features Information on WIM

Total Applications=4						
Selection	Extended Feature Name	Type	Status	Description	Version	Startup Location
#	BOCR	J	Suspend	BOCR (convert = v9.61)	2.00.0...	SD1
C	JavaTM Platform	C	Starting Up	Extended Features(JavaTM Platform)	10.07.02	SD1
C	Extended JS	C	Starting Up	Extended JavaScript for Browser SDK	1.11.00	HDD
C	BOCR.gps	C	Waiting	Barcode & OCR Package -Intelligent Ve...	2.00.0...	HDD

Note: For devices with Smart Operation Panel (SOP) the list of Extended Features on WIM may contain a lot of entries. Thus the IBS related entries may be scattered across different pages, whence scrolling may be necessary to see each entry.

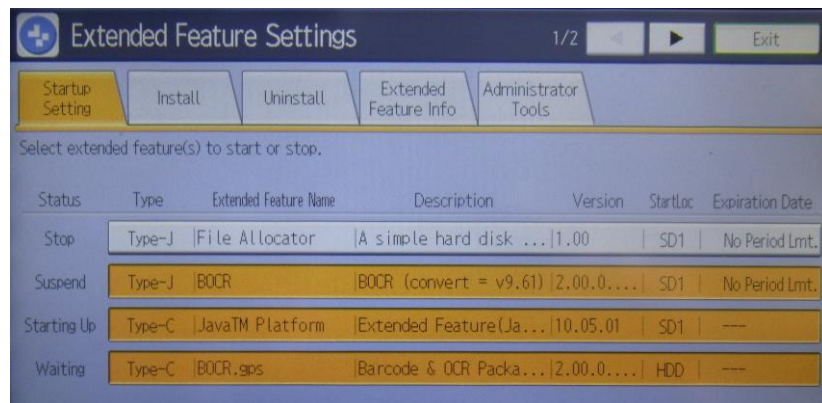
Alternatively, go to the device's operation panel and check the **Extended Feature Settings** screen. It can be accessed via [User Tools] (hard key) --> **"Extended Feature Settings"** (button) --> **"Extended Feature Settings"** (button). The corresponding entries are also labelled "BOCR" and "BOCR.gps".

Note: For devices with Smart Operation Panel (SOP) the list of Extended Features on the device panel can be reached via: Home screen --> **"User Tools"** (button) --> **"User Tools"** (screen) --> **"Machine Features"** (button) --> **"User Tools"(!)** (screen) --> **"Extended Feature Settings"** (button) --> **"Extended Feature Settings"** (button).

Note: The "Extended Feature Settings" button is only visible if at least one Java xlet application is active.

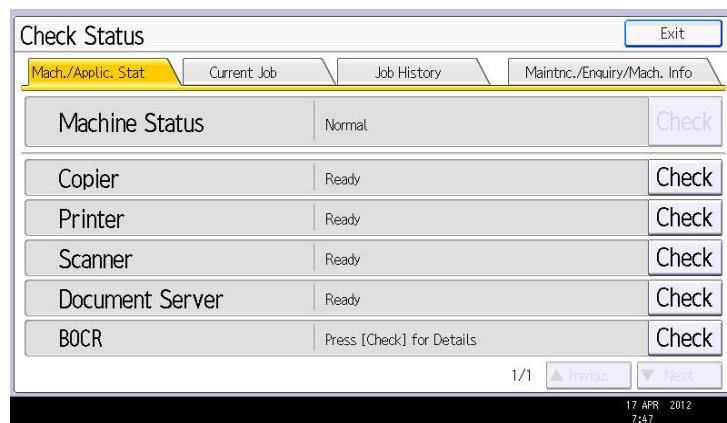
Note: For the entry labelled "BOCR", the version information of convert in "(convert = v...)" may be incorrect. In a support case, the actually running version of convert must be obtained from IBS-CC or from the PCL HDD Directory List (unless affected by [LIM44D]); refer to section 2.4.5 "IBS Status Indication Files on the HDD Directory List" on page 19.

Figure 2-4: Device Operation Panel: Extended Feature Information



If instead you press the **[Information]** hard key, this will only show the Java component, labelled "BOCR", not "BOCR.gps", and is hence less helpful. (Note also that the Check button is without function; refer to [LIM41D].)

Figure 2-5: Information on Device Operation Panel via [Information] key



2.4.4 For Architecture Type Bc3 Models with Installation Flow Type VI

In order to check if IBS is installed and active, go to the device's main entry web page of Web Image Monitor (WIM) and select **Extended Features Info** in the Extended Feature Settings section.

Alternatively, go to the device's operation panel and check the **Extended Feature Settings** screen. It can be accessed via **[User Tools]** (hard key) --> **"Extended Feature Settings"** (button) --> **"Extended Feature Settings"** (button).

Both IBS MOD files must be in status "Waiting":

- **"IBS Barcode & OCR Module"** (IBS.gps)
- **"IBS Bootup Module"** (IBS.bootup)

2.4.5 IBS Status Indication Files on the HDD Directory List

As the status and configuration data cannot be displayed neither on the device's Configuration page nor on the LCD display, the information is shown as "Status Indication Files" that can be seen on the HDD Directory List of the PCL configuration page in the folder **0:/pcl/ibs**.

This feature is applicable only for HDD- (and SSD-) based IBS systems. To see the status of IBS on a particular device, you need to print out the HDD Directory List from the LCD display on the device's operation panel.

Note: On some device models, this does not work properly; refer to limitation [LIM44D].

The information is visible as part of the file names of several Status Indication Files. On every device start or restart initiated on the device or from WIM or from IBS-CC, IBS (main) (re-)generates all Status Indication Files, with a current timestamp of the most recent device start or of the time the status change or error occurred. Most important is the file name, with the format displayed below. The Status Indication File mechanism is also used for error reporting. Each Status Indication File name gives the information in the following format:

<timestamp> (<keyword> = <value>), where:

<timestamp> ::= <yyyy-mm-dd hh:mm:ss>.

The following keywords are contained inside the Status Indication File name.

Table 2-1: Keyword Description

Keyword	Value
MODE_PUB	License Mode installed. (Demo Mode or Active Mode).
VER	Version numbers of IBS (base), IBS (main) and CONVERT , e.g. (VER=v2.12.0.00:v2.20.0.00:v11.80)
MODE	License Mode installed. (Demo Mode or Active Mode), e.g. (MODE= Demo Mode , (X:'9998RB30008')) or (MODE= Active 4095 , (X:'9998RB30008'))
TCPPORT_PRINTER	Diprint port. (Default: 9100)
TCPPORT_COMM	Communication port. (Default: 10001)
DEBUG_MODE	Debug Mode in effect. (Barcode/Crash Analysis/Off)
ERR_CODE	Error code. (See Section A.1 "IBS Error Codes" on page 39.)

For example, a version information would resemble the following:

2005-10-25 13:45:12 (VER=v3.4.0.1: v.3.4.0.1: v13.0)

Errors regarding the data stream or barcode parameters will not be reported through the Status Indication Files, but by means of a different mechanism (error code printed underneath the barcode). Refer to the IBS User's Manual Part II.

Procedure

Press the **Printer Features** button and then the **PCL Config. Page** or **PCL Config./Font Page** button, depending on the Device Class. The device will then print out the PCL configuration pages. Find the page whose header is called **PCL HDD Directory List**.

If, in the Directory column of the table, there is an entry called **/pcl/ibs**, the device has the IBS application installed. Otherwise, IBS is not installed. The actual files in the /pcl/ibs folder are dummy files indicating the IBS operation mode (Demo or Non-demo/Licensed), port number etc. in their names.

2.5 Testing IBS

You can print out a test document to check whether or not IBS is working correctly.

2.5.1 Test Documents

In IBS-CC go to "Test" and select one of the test jobs.

Test files can also be found in the folder "test files" on the distribution medium.

2.5.2 Testing IBS Outside the Issuing System

IBS can be used to print barcodes without having an SAP environment set up, if there is a PCL file (e.g. *.PRN) containing the proper print job data. This is useful for demonstration and for testing purposes. It allows IBS to show actual barcode output, and to verify that IBS has been correctly installed.

After installing IBS on a device, it is possible to send barcode data with one of the following commands from a DOS prompt window in a Windows environment.

Once IBS-CC has been installed, the test documents shipped with IBS are more easily printed from its user interface than with the below methods. Please refer also to section 3.7.4 "Testing [IBS-CC: Test]" on page 32 below.

lppPrint

The program **lppPrint.exe** resides in "C:\Program Files (x86)\IBS Control Center\". It uses the IPPS protocol.

The syntax is:

```
lppPrint -v -h <host name or IP address of the device> --uri "ipp" -f <file path>
```

To avoid typing in the parameters, use the "IPPS_PrintBarcodeTest..bat" as a template.

Tcpsend

The **tcpsend** program is shipped with the installation files of IBS. It uses the raw TCP protocol. For further information on this program, refer to IBS User's Manual - Part II.

If status readback is involved, the variant **tcpsendrb** needs to be used.

```
tcpsend <host name or IP address of the device> <Diprint port number> <file path>
```

lpr

Alternatively, you have an additional option: **lpr**. The syntax is:

```
lpr -S <host name or IP address of the device> -P lp <file path>
```

2.6 IBS Removal

This section contains information about the removal procedure of IBS on the device using IBS Control Center.

For the IBS-CC procedure, refer to section 3.7.5 "Removing IBS from the device" on page 32 below.

For information about legacy device models, please contact Technical support.

For the removal of the other components, refer to section 1.13 "Removal" on page 13 above.

Note: [for Architecture Type Bj only] For bulk installation operations like the removal of IBS from multiple devices, please contact Technical support. .

2.7 IBS Upgrading

This section contains information about the upgrading procedure of IBS on the device using IBS Control Center.

For the IBS-CC procedure, refer to section 3.7.6 "Upgrading IBS on the device" on page 32 below.

For the upgrading of the other components, refer to section 1.14 "Upgrading" on page 13 above.

Note: For bulk installation operations like upgrading of IBS on multiple devices, please contact Technical support.

2.8 IBS parameters and configuration

This section specifies the configurable parameters of IBS on the device.

2.8.1 IBS related Ports on the Device

IBS uses 2 specific TCP ports. These are:

- the Diprint port
- the IBS Communication port

IBS and IBS-CC do not use standard ports (except for the Diprint port) for communication. If one or more of the ports are already in use by another application, the conflicting ports need to be changed.

Table 2-2: Possible Port Values

Parameter	Description	Default	Min	Max
Diprint port	The port to send the barcode print jobs to.	9100	1024	65535
IBS Communication port	Port on the device for IBS-CC - IBS communication.	10001	10000	65535

2.8.1.1 Diprint Port

The Diprint port (9100, by factory default) is the TCP port on the device where TCP raw print data can be sent, e.g. with `tcp send`.

IBS-CC also uses this port for uploading files (License Key file, upgrades, fonts, ...).

In rare cases, it may need to be changed; e.g. if it is already used by another application.

For the procedure, please ask Technical support.

In that case, the new port number needs also to be registered on IBS-CC. Refer to section 3.5.3 "Alternative Diprint ports" on page 27 below.

2.8.1.2 IBS Communication Port

The TCP port on which IBS and IBS-CC communicate with each other.

The value must be 10000 or greater.

Configuring the IBS Communication Port on the Device

Changing the port is not possible from IBS-CC. Please contact Technical support.

2.8.2 IBS Parsing mode: Byte mode vs Block mode

Note: (Byte mode versus Block mode)

By default, IBS processes incoming data byte by byte. In order to speed up processing, the faster block mode may be activated. This requires that no status read-back is involved.

For information how to configure this mode, please contact Technical support.

2.9 IBS status and error codes

For how to retrieve the current status and error codes of IBS on a device, and for their interpretation, please refer to Appendix A.1 "IBS Error Codes" on page 39 below.

Chapter 3



3. IBS Control Center (IBS-CC)

To install and configure IBS on MFP and printer devices, use the **"IBS Control Center" (IBS-CC)**.

Section 3.1 "Introduction" on page 24 gives an overview of IBS-CC functionality and behaviour.

The IBS-CC software is contained in the folder \IBS-CC\ on the distribution medium; refer to section 3.1.2 "Distribution of IBS-CC" on page 25 below.

For documentation of IBS-CC, refer to section 3.1.3 "Documentation of IBS-CC" on page 25 below.

For the system requirements to install and run IBS-CC, refer to section 3.1.1 "Managing Station System Requirements" on page 24 below.

Sections 3.2, 3.3, and 3.4 explain its installation, removal and upgrading.

Section 3.5 describes settings and procedures to configure the behaviour of IBS-CC.

Section 3.6 describes the UI and appearance.

Section 3.7 describes the actual usage of IBS-CC, how to work with it, for the normal operation, namely installing IBS on the devices, and configuring IBS on the devices.

Section 3.7.7 is about debugging for troubleshooting.

3.1 Introduction

The **IBS Control Center (IBS-CC)** runs on the Managing Station; it is used to configure and manage the IBS systems on the devices.

3.1.1 Managing Station System Requirements

IBS-CC is installed on a Managing Station in the network.

A Windows PC in the network where IBS-CC is installed, and from where IBS systems on the devices can be managed, is referred to as a "Managing Station". There may be more than one.

You need one Managing Station to install IBS-CC onto, and this Managing Station must meet the following requirements.

It needs to have access to a local TCP/IP network, with access to all targeted devices.

The Managing Station must have a web browser properly installed, for the usage of Web Image Monitor (WIM) remotely on the devices.

The supported web browsers are:

- Microsoft Edge
- Google Chrome
- Mozilla Firefox

For the requirements of IBS-CC to PC hardware and Windows operating system, refer to the document "IBS_CC_Software_Installation.pdf" in the "doc" folder.

Note: If IBS-CC is to run on a Windows **Server**:

If the Windows "IE Enhanced Security Configuration" setting is "On", and if the device is not among the trusted devices of IE, the sending of print jobs from IBS-CC to the device may be blocked, e.g. upon IBS installation, of IBS test jobs, or to configure IBS.

In that case the following message may be shown:

"The device you are connecting to is being blocked by Windows IE Enhanced Security Configuration"

This behaviour of the Windows server can be changed on:

... --> Server Manager --> Local Server --> Properties --> "IE Enhanced Security Configuration".

3.1.2 Distribution of IBS-CC

IBS-CC is shipped on the distribution medium, e.g. a ZIP file. It also contains the IBS software that gets installed on the device.

It is located as "IBS_Control_Center-v-vv-vv-0.msi.zip" in the folder "\IBS-CC\" of the distribution medium, where "v-vv-vv-0" indicates the version number "v.vv.vv.0", e.g. "5-18-10-0".

3.1.3 Documentation of IBS-CC

IBS-CC has its own documentation, which this manual largely refers to.

Table : Documentation of IBS-CC

Link/Navigation	File / URL	Title	Description
"IBS-CC Online Help"	<< http://www.stethos.com/ibsc >>	IBS Control Center Home	Online information about IBS-CC settings and usage/operations (Scan, Install, License, Test, Debug, Forms, Quicksets) For its usage, i.e. e.g. the installation and configuration of IBS, context-sensitive help is available online and offline, via <F1>.
Manuals -> "IBS Control Center Installation Manual"	" IBS_CC_Software_Installation.pdf "	IBS-CC // IBS Control Center // Software Installation Manual	Information about installing IBS-CC
C:\Program Files (x86)\IBS Control Center\doc\	" IBS remote installation support checklist.pdf "	"IBS remote installation support checklist"	Installation of IBS via remote meeting tool (TeamViewer, Teams)
C:\Program Files (x86)\IBS Control Center\doc\	" IBS Installation Patch Connection.pdf "	"IBS installation – network patch connection"	Installation of IBS via "patch cable" between IBS-CC and device
	"ibs.mp4"; via: << http://stethos.com/en/ibs-cc-ricoh-nav >>	"Installation and deployment video" or "IBS Control Center - Installation, Test and Licensing"	Video: Information about using IBS-CC to install IBS (in English language)

3.2 Installation of IBS-CC

Run the installer "IBS_Control_Center-v-vv-v-0.msi".

For instructions and more information, please refer to the documentation of IBS-CC.



NOTE:

For installation on some Windows versions(you may need to have administrator rights (e.g.

via right mouse click on "setup.exe" -> "Run as administrator").

**NOTE:**

If you have an earlier version of IBS-CC installed, it gets automatically removed first.

It is recommended to always use the latest officially released version of IBS-CC - the most current version can handle even the oldest of devices supported by IBS.

**NOTE:**

On recent Windows versions, initially the "**User Account Control**" (UAC) will display the message "An unidentified program wants access to your computer", or similar, thus indicating that it has no digital signature from its publisher. Press **Allow** to continue. Afterwards, the "**Attachment Execution Service**" (AES) will issue a security warning "The publisher could not be verified", or similar. Press **Run** to continue.

Then the License Agreement will be displayed. Accept it by pressing **Yes**.

**NOTE:**

The default installation path for the "IBS Control Center\" subfolder is (on English language systems) "C:\Program Files (x86)\".

After the installation, IBS-CC can be started.
Documentation of IBS-CC

3.3 Removal of IBS-CC

For how to remove IBS-CC from the PC, please refer to the IBS-CC documentation in section 3.1.3 "Documentation of IBS-CC" on page 25.

Note: (Retention of Data and Settings)

Upon an uninstallation of IBS-CC, two items will not be removed but retained:

- a) Registry: all entries under "Computer\HKEY_CURRENT_USER\Software\welp\ibs"
- b) Folders & Files: all folders with customized Quicksets and Forms, Licenses, and Debug results, under "C:\ProgramData\IBS_CC\".

If no longer needed, they need to be removed manually.

Moreover, legacy installations of IBS v4.0 and older may leave remnant folders 0:\pj\ or 0:\GmbH\; they may be ignored or removed.

3.4 Upgrading IBS-CC

Running a newer version of the *.msi installation file will automatically overwrite a previous installation, if any. For how to obtain the latest version of IBS-CC, please refer to the IBS-CC documentation in section 3.1.3 "Documentation of IBS-CC" on page 25.

3.5 Configuring IBS-CC

The following items on IBS-CC can be configured.

3.5.2 Timeouts & Retries

Timeout and retry settings affect TCP communication used in several IBS-CC operations.

Related settings can be found in

- (menu) --> File --> Settings --> "Network settings", and
- (menu) --> File --> Settings --> "Settings for single-click installation".

For the meaning of each item, refer to IBS-CC documentation.

3.5.3 Alternative Diprint ports

If the Diprint port default value of 9100 had to be changed on one or more devices, up to 2 additional values can be specified for IBS-CC to try them out, under

(menu) --> File -> Settings --> "Network Settings" --> "Alternative Diprint ports in addition to 9100".

3.5.4 Alternative IBS Communication Port

From IBS v4.4, the former "Extensive scan" mechanism is no longer supported.

Instead, any port other than 10001 needs to be explicitly configured.

On IBS-CC this needs to be done under (menu) -> "File" -> "Settings" -> "General" -> "Scan options" ->

-> [X] "Use additional IBS communication port (10001 is always checked)".

For the prior configuration on the device, please contact Technical Support.

It needs to be carefully evaluated/checked if known IBS devices are missing in the result list.

If so, another additional IBS Communication Port may need to be configured.

3.6 The User Interface of IBS-CC

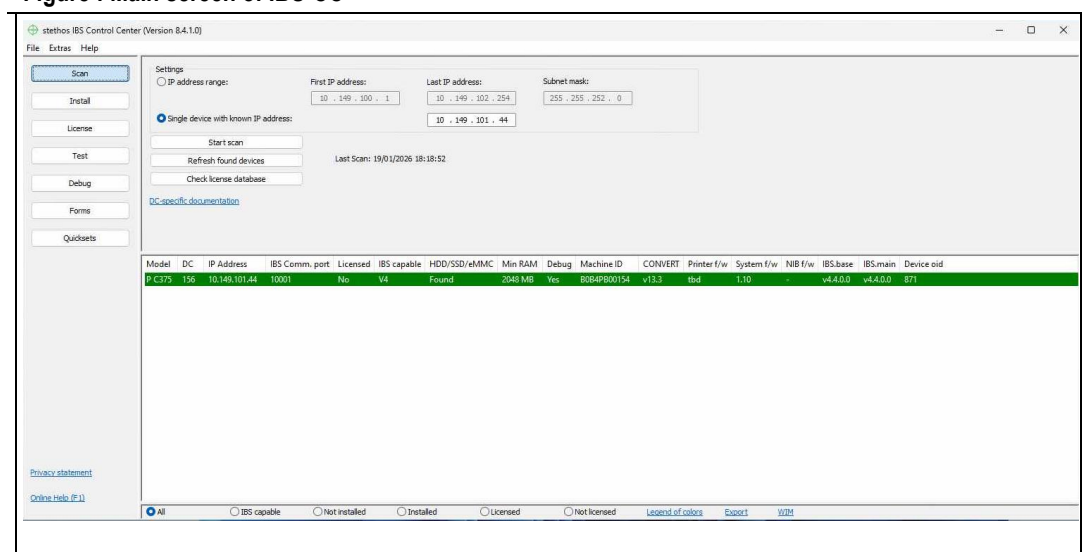
For the appearance (user interface) and the usage of IBS-CC (procedures), please refer primarily to the documentation of IBS-CC.

This section is to serve only as a brief overview, but on the other hand additional information may be given.

The main screen of IBS-CC has 3 parts:

- the **operations pane** on the left, with one button for each operation
- the **settings pane** at the top, with settings specific to the current operation
- the **devices pane** at the bottom, showing information about all devices found

Figure : Main screen of IBS-CC



Note: The following 2 links at the bottom will open in the default web browser of the PC ...

- "WIM" => ... the Web Image Monitor (WIM) page of the entry selected
 - "Export" => ... an HTML document containing a table with all the entries listed
- Moreover, each of the 6 filter views is exported into an HTML file in
 "C:\ProgramData\IBS_CC\temp\Scan_Devices_<filter>_<yyyymmdd>-<hhmmss>.html".

Moreover, it has a **menu** at the top, with the following structure:

Table : Menu structure of IBS-CC

- File
- Settings
- General
- Network Settings
- Settings for single-click installation
- Logs Control Center
- View
- Send E-Mail
- Exit
- Extras
- Open license files folder
- Read files from device...
- IBS News...
- Reboot device...
- Supported Devices...
- Uninstall IBS...
- License migration...
- Manage logs of single-click installations...
- Help
- About IBS Control Center
- Online Help...
- Usage video...
- Feedback...
- Chat with us...

Refer to IBS-CC documentation for their meaning.

Device information shown in IBS-CC

On the devices pane, on the windows "Scan" or "Install", the table of found devices shows the following information items, related to the categories Model, Device, IBS and Firmware.

Table 3-4: Device Information shown in IBS-CC

Pos	Field		Sample value	Category: Remarks
01	Model		MP xxxx SP xxxx	Model: Model name
02	DC		101 ...	Model: Device class
03	(opt.) Alias		"=DC 95"	Model: Alias DC
04	IP Address		172.11.22.33	Device: IP address
05	IBS Comm. port		10001 ...	IBS: the IBS-CC Communication port on the device. (Default = 10001)
06	Licensed		No Yes	IBS: Licence status
07	IBS capable		No Yes	Model:
08	HDD/SSD/eMMC		Found --	Device: where the IBS system is located.
10	Min RAM		1913 MB ...	Model:
12	Debug		No Yes	IBS: Current debug mode of the device. For further information, refer to "Debugging".

13	Machine ID		SX1234567BQ	Device: Individual serial number of the device.
14	CONVERT		11.70 ...	IBS: Version number of the CONVERT module of the IBS system.
15	(opt.) Printer f/w (*v)		1.06 ...	Device: Printer/Firmware firmware version.
16	System f/w		1.06 ...	Device: System/Copy firmware version.
17	NIB f/w		18-40 ...	Device: NIB/NCS firmware version.
18	IBS.base		2.18.0.0	IBS: Version # of ibs.base;
19	IBS.main		2.18.0.0	IBS: Version # of ibs.main
20	(opt.) Java IBS V2 app		9_76_gwpS.zip ...	Model: Java part compatibility version
21	(opt.) Controller		-- "Intel6.GWNX" "ARM.sGW" "ARM-QB.sGW" "Intel6.GWL	[only from IBS v3.0] Controller (GWNX, sGW, GWL) & CPU type (intel, MIPS, intel6, ARM, ARM-QB)
22	Device oid		771 ...	Model: last part of SNMP MIB device oid, e.g. 1.3.6.1.4.1.367.1.2.1.1.6.771

Note: (*v) On the [Scan] screen all entries of this column are pre-populated with "tbd"; only on the [Install] screen and only once a device is selected there, the proper value will be retrieved and displayed.

Limitation [LIM53M]

Other than with former BOCRCT, the following information is no longer shown nor otherwise accessible in IBS-CC:

Error Status	The current error status of IBS on the device, or failed communication with the device. <u>Workaround:</u> For each device, the latest error code can be seen on the HDD Directory list, at the tag "ERR_CODE"; refer to section 2.4.5 "IBS Status Indication Files on the HDD Directory List" on page 19. In the case of communication failure, the device will simply not appear listed.
Diprint Port	The current Diprint port of the device (factory default = 9100). This value is needed for configuring the print destination on the Issuing system. <u>Workaround:</u> For each device this setting needs to be retrieved via telnet --> "diprint"; refer to section 2.8.1.1 "Diprint Port" on page 22, or section 3.5.3 "Alternative Diprint ports" on page 27. In order to avoid that, it is recommended to use the same value on all devices.

3.6.1 Navigation in IBS-CC

For how to navigate in IBS-CC, refer to IBS-CC documentation.

3.6.1.1 Filter Functions

At the bottom of the IBS-CC devices table, the following filters can be applied:

<u>Filter</u>		<u>Scope</u>
- (o) All		all devices found in network (IBS capable and non-capable)
- (o) IBS capable		IBS capable (IBS Installed & Not installed)
- (o) Not installed		IBS not installed or not running/active (installed but deactivated)
- (o) Installed		IBS installed (Licensed & Not licensed)
- (o) Licensed (Blue)		IBS correctly licensed (=> Installed => IBS capable) Limitation: Refer to [LIM85MD].
- (o) Not licensed (Green)		IBS running in demo mode, and suitable License file is present
- (o) Not licensed (Orange)		... and no suitable License file is present

3.7 Operating IBS-CC

This sections gives an overview of the operations in IBS-CC.

For full information refer to the corresponding IBS-CC documentation.

Prerequisites

All targeted devices need to be running in the correct operation mode and must not be busy otherwise.

The following operations can be performed from IBS-CC:

Table 3-6: IBS-CC operations

Item	Description
Search for devices on network	[Scan] button For details refer to section 3.7.1 "Device Discovery [IBS-CC: Scan]" on page 31 below.
Installation of IBS	[Install] button For details refer to section 3.7.2 "Installation of IBS on the Device [IBS-CC: Install]" on page 31 below.
Licensing (order license, install license key)	[License] button For details refer to section 3.7.3 "Licensing [IBS-CC: License]" on page 31 below.
Test	[Test] button - Print test sheets on selected devices. For details refer to section 3.7.4 "Testing [IBS-CC: Test]" on page 32 below.
Capture jobs	[Debug] button - Create and download detailed log files For details refer to section 3.7.7 "Debugging: [IBS-CC: Debug]" on page 32 below.
Configure Debug Mode	[Debug] button - Set the debug mode on selected devices. For details refer to section 3.7.7 "Debugging: [IBS-CC: Debug]" on page 32 below.
Get Debug Logs	[Debug] button -- Download debug logs from selected device to a folder on the PC. For details refer to section 3.7.7 "Debugging: [IBS-CC: Debug]" on page 32 below.

Use & manage Forms	[Forms] button For details refer to section 3.7.8 "Forms: [IBS-CC: Forms]" on page 33 below.
Use & manage Quicksets	[Quicksets] button For details refer to section 3.7.9 "Quicksets: [IBS-CC: Quicksets]" on page 33 below.
Upload a File	Upload files (fonts, program files, ...) to selected devices. For details refer to section 3.7.10 "Upload a File" on page 33 below.
Removal of IBS	Refer to section 3.7.5 "Removing IBS from the device" on page 32 below.

3.7.1 Device Discovery [IBS-CC: Scan]

As the first step, a network scan must be run, to find all the supported devices in the network. IBS-CC offers three options:

- (1) Search the **local network** only, i.e. where the Managing Station resides.
- (2) Specify an **IP address range** to be searched for devices.

Caveat: If this range is (accidentally or purposely) specified too big, the search may take very long.

- (3) Specify a **single IP address** to scan only for one **individual device**.

Limitation (Multiple networks) [LIM53M]

With IBS-CC it is not possible to explicitly specify a list of networks to be searched.

Limitation (Deferred display of results) [LIM53M]

The resulting list of devices found is only shown after completion of the search.

Note: (Network not reachable)

If all devices from a particular network do not appear in the resulting device list after performing the search:

① Check that the network's IP address and subnet mask were not mistyped. Otherwise, the network may not exist.

② Look at the configuration of the firewall or of the routers. If you have a particular configuration, some networks may be invisible.

If a network continues to not appear, contact Technical support and/or the local network administrator.

For timeout settings for IBS-CC Scan, refer to section 3.5.2 "Timeouts" on page 26 above.

3.7.2 Installation of IBS on the Device [IBS-CC: Install]

For the procedure how to install IBS on a device using IBS-CC, please refer to section 2.3 "IBS Installation" on page 17 above.

3.7.3 Licensing [IBS-CC: License]

Licensing comprises these steps:

- 1. Order a set of license vouchers (one "magic number" per device serial number).
- 2. Have IBS-CC generate the licences for all devices, each from its "magic number" and serial number.

3.7.3.1 Order License

For the procedure how to order a license, please refer to IBS-CC documentation.

Device Discovery

3.7.3.2 Install License

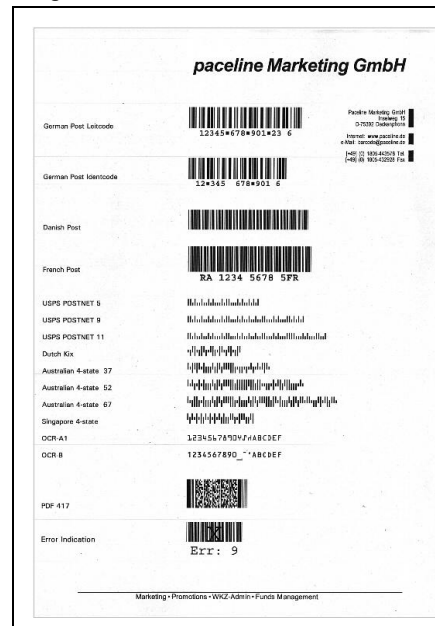
For the procedure how to install the license, please refer to IBS-CC documentation.

Device Discovery

3.7.4 Testing [IBS-CC: Test]

To check that IBS is working correctly, you can choose from several test documents. One sheet is shown below as an example.

Figure 3-1: Test Sheet



Note: This test sheet cannot be printed if authentication is active on the device.

3.7.5 Removing IBS from the device

In IBS-CC navigate to (menu) --> Extras --> "Uninstall IBS...", and follow the instructions.

3.7.6 Upgrading IBS on the device

IBS needs to be completely removed and reinstalled.

3.7.7 Debugging: [IBS-CC: Debug]

To obtain debug information, IBS-CC supports several debug methods:

There are 3 steps:

- (i). enable debug mode
- (ii). disable debug mode
- (iii). retrieve log files from device

Please refer to the corresponding IBS-CC documentation, at
 "C:\ProgramData\IBS_CC\Docs\stethos.com\en\ibsc-cc-debug.html".



NOTE: As writing the debug log requires frequent HD access, the printing speed may go down.

NOTE: For device models with eMMC storage, refer to [LIM59D].

3.7.8 Forms: [IBS-CC: Forms]

Refer to IBS-CC documentation.

3.7.9 Quicksets: [IBS-CC: Quicksets]

Refer to IBS-CC documentation.

Note: The modification and creation of quicksets is not supported by IBS-CC. Refer to [LIM54M]. Please contact Technical support if the modification of existing quicksets or the creation of new quicksets is required.

3.7.10 Upload a File on a device

In some cases, specific files - not print jobs - may need to be uploaded to devices where IBS is running. Such files could be, for example, new fonts, a configuration file (convert.ini, config.ini), or updated IBS binaries. Only files with an IBS specific signature can be uploaded. You would normally receive these files from Technical support.

The files need to be manually uploaded, via drag-and-drop to the "**_upload_file.BAT**", which is located in the "tools\" folder of the distribution medium.

Alternatively, the path to the file to be sent can be specified on the "Test" screen.

3.7.11 Configuring IBS on the device

Ports (Diprint port, IBS communication port)

Refer to section 2.8.1 "IBS related Ports on the Device" on page 22 above.

Parsing mode (Byte mode vs Block mode)

Refer to section 2.8.2 "IBS Parsing mode: Byte mode vs Block mode" on page 22 above.

Chapter 4



4. Limitations

The limitations are named and grouped as follows:

- 1. [...S]: regarding the Issuing System
- 2. [...B]: regarding Barcoding
- 3. [...D]: regarding IBS on the device
- 4. [...M]: regarding IBS-CC and the Managing Station
- 5. other limitations
- [...C]: regarding IBS convert

4.1.1 Limitations regarding the Issuing System

Refer to the Limitations section in the IBS User's Manual - Part II.

4.1.2 Limitations regarding Barcoding

- [LIM11CB] It cannot be guaranteed that the barcodes generated by IBS will be readable by all **barcode reading** devices. Some readers may require some adjustment in their barcode size parameters.
- [LIM12CB] The **resolution** for printing is **600 dpi** only.
- [LIM13CB] Printing barcodes is only possible with a PCL 5 print job.
- [LIM14CB] The product is not fully **compatible** with **HP JetCAPS/JetMobile**. For details refer to the IBS User's Manual - Part II.

For other limitations related to barcode and OCR text printing, refer to the IBS User's Manual - Part II.

4.1.3 Limitations regarding IBS on the device

- [LIM21D] Print jobs which could not be completed because the **power** of the device was turned **off** may not continue to get printed after the device is turned on again (as the print job is not saved on the HDD).
- [LIM23DC] The **performance** of a print job using IBS will not be as high as when printing it without IBS.
- [LIM25DC] When IBS is installed on a device, **status read-back** from print jobs via the parallel or USB port may not work.
- [LIM26D] If the IBS application is installed on a device, other SDK applications might not be installable nor executable simultaneously. For known (in)compatibilities refer to section 1.15 "IBS **interoperability & compatibility** information" on page 14 above.
- [LIM33D] **USB**, **Centronics** and **serial** ports may not work properly. Please contact Technical support.
- [LIM34C] While IBS is running in Demo Mode, any PCL5 print jobs (from any other applications as well) will bear the **demo watermark**.

- [LIM39C] Applications on the device using TCP ports and status read-back may not work properly. In particular, IBS cannot coexist with **native IPDS** (port 5001).
 - [LIM40D] IBS may not work on devices running software that inhibits or otherwise controls TCP ports. Please contact Technical support for known incompatibilities.
 - [LIM41D] IBS has no proper **information** screen. Attempting to access it, either
 - via the "BOCR" button on the Home screen, or
 - via the "Check" button at the "BOCR" entry on the Extended Features list (via the [Information] hard key), results in a "... Please wait ..." screen being displayed infinitely.This can be safely ignored. To exit from it, press e.g. the [Printer] or [Home] hard key. One should avoid to use these buttons in the first place. The "Check" button can be hidden via [User Tools] (hard key) --> "Edit Home" (button) --> "BOCR" (icon) --> "Delete Icon" (button).
 - [LIM42D] For some device models, sending a file containing **multiple jobs** may cause slow printing behaviour. In case of occurrence, please contact Technical support.
 - [LIM43D] For some device models, sending a **PDF** file directly to the device may result in the delayed ejection of the first page. In case of occurrence, try upgrading the device firmware.
 - [LIM44D] For some device models, the **HDD Directory List** (part of the PCL Config. Page) may fail to list both the Status Indication Files and the folder 0:\pcllibs and its contents. Hence, these cannot be reliably used to check the status nor as a criterion for successful installation. This is a device firmware problem and not related to IBS. This affects all Device Classes tagged "(F1)" in the ReadMe file. With newer device firmware this may work. Printing this list via PCL command "<esc> | p4T", instead of via the menu, may still work.
 - [LIM45D] Certain ill-conditioned print jobs may cause IBS to fail with an **SC899 service call** error. In case of occurrence, please restart the device, refrain from re-sending the respective job, and contact Technical support.
 - [LIM47D] When printing in Demo mode, the formatting of a page may get disrupted by an extra line break, which may even cause an extra page break.
 - [LIM48D] If a print job is **sent too early** after device reboot, its processing and ejection may take some time, even if the display already shows "Ready".
 - [LIM48DB] With IBS v3, if print jobs are **sent too early** after device reboot, the first few may get printed without barcodes.
 - [LIM59D] For device models with **eMMC** storage, the **logging** of very large jobs may partially be **incomplete**. The eMMC block reserved for file creation by IBS has a maximum size of 200 MB. If the job size is close to like 100 MB, writing to in_data.prn and out_data.prn and LOG_FILE.TXT will fail from some point onward. The processing and printing of the job itself is not affected.
 - [LIM87D] With IBS v3 installed, version v3.4 and lower, an intel6.GWNX controller device may behave sluggishly. This has been fixed with IBS v3.5.
- Furthermore, any IBS-independent limitations of the device may apply.

4.1.4 Limitations regarding IBS-CC and the Managing Station

- [LIM52M] If IBS gets **installed** on a device only **partially**, i.e. with some associated modules missing, the entries in the columns "IBS Base Ver.", "CONVERT Ver." and "IBS Main Ver." in IBS-CC for this device may be empty.
- [LIM53M] For limitations related to different behaviour of IBS-CC versus former **legacy BOCRCT**, corresponding remarks have been added in the preceding chapters of this document.
- [LIM54M] The modification and creation of **quicksets** is currently not supported. Please contact Technical support if the modification of existing quicksets or the creation of new quicksets is required.

- **[LIM55M]** The **multiple copies** function ("**Reprints**") of IBS-CC, which can be configured via quicksets, stores each page of a print job into a PCL5 macro. Due to a limitation of PCL5, this will fail if the print job data already contains PCL5 macro definitions.

(260625 REMOVED- **[LIM56M]** For IBS version v4.0 and lower, for ARM.sGW and Intel6.GWL models all **debugging** options are disabled. If debugging is needed, please upgrade to v4.1 or higher.

4.1.5 Other Limitations

- **[LIM81MD]** The detection of IBS by IBS-CC on a device can only work properly if it can communicate with IBS. For this purpose, IBS must be running on the device. Otherwise, IBS-CC cannot distinguish between IBS being not installed or not running.

- **[LIM82MD]** IBS-CC may not detect a device properly while the device is busy, for example when receiving a Fax. Moreover, communication may fail when the device is in User Tools mode.

- **[LIM84MD]** The HDD will be allowed to go to the highest power-saving mode. In this mode for these type of devices, with the Debug Mode turned on to capture Debug Log data, certain functionalities of IBS-CC (for example discovery of devices, capturing debug log data onto HDD, uploading debug files, refreshing the status of the device, changing the configuration data of the device, and uploading a license file) and IBS (printing barcode) will not work. To allow functionality during the highest power-saving mode for these Device Classes, it is necessary to turn off debugging.

- **[LIM86DBM]** If IBS v3/v4 is installed on a device, the originally compatible firmware may accidentally and unintentionally get downgraded to an incompatible version (this may occur e.g. by automated bulk firmware update operations, e.g. via Streamline NX), which may remain unnoticed; in this case the following may be observed:

- The device may not print at all.
- Jobs may print in demo mode, even if the device is IBS licensed.
- Barcode jobs may get printed without barcodes.
- IBS-CC may erroneously show the device as IBS not installed.
- An SC899 may occur upon device shutdown or upon firmware updates.

To resolve this, either IBS should be uninstalled, or the firmware has to be updated again to an IBS v3 compatible version.

- **[LIM88B]** For the following types of print job data pass-through mode and thus the job may fail:

- **XPS** (Open XML Paper Specification), if switched to from PCL5 within the same PRN file .

- **[LIM89B]** The following types of print jobs may result in a Service Call on the device:

- Job created by Windows **IPP** Class Driver with Ricoh **PSA** (Print Support Application) v1.1.2.0.
If this occurs, please obtain a newer version of the Ricoh PSA, v1.2.0.0 or later, or use IBS v4.5 or later.

Chapter 5



5. Troubleshooting and Support

5.1 Troubleshooting

If a negative behaviour of IBS is observed, it is recommended to follow these steps:

- 1. Check the Limitations section, whether it may be caused by a known limitation.
- 2. Go through the checklist [Q xx] of error conditions below.
- 3. For proper debugging, refer to section 3.7.7 "Debugging: [IBS-CC: Debug]" on page 32 above.

Symptom	Possible root causes and actions
[Q 11] After licensing, IBS on the device is still shown as Demo mode.	Verify that the licence file is valid for the device's serial number (a.k.a. machine id).
[Q 12] All the barcodes on the printout have "DEMO" on it.	This is normal if IBS is running in Demo Mode. To get rid of the "Demo" on barcodes, it is necessary to license the product.
[Q 14] There is an "ERR XX" (where XX is some number) below a barcode printout.	There is an error in the data or parameters of the barcode. Refer to the IBS User's Manual - Part II to find out the cause of the error, and correct the data accordingly.
[Q 15] No printout when sending a test job.	Ensure that IBS is up and running on the selected device(s). Ensure that the security/encryption feature is disabled.
[Q 16] It takes a long time to abort the scan process.	This can occur because the creation of threads cannot be interrupted directly. If the discovery process is cancelled, IBS-CC waits until the thread creation finishes and after that the cancel message is processed.
[Q 21] It takes a long time for IBS-CC to complete the scan process.	Try one or more of the following: - Reduce the number of retries. - Decrease the timeout values. - Increase the number of threads. Be aware that then slower devices may not be found anymore.
[Q 22] Some devices that support IBS are not discovered by IBS-CC.	1. Ensure that the devices are turned on, connected to the network, and reachable from the Managing Station (try ping). 2. It may be necessary to disable the security or encryption feature. 3. Ensure that the device's Diprint port (if not 9100) is included on IBS-CC under File --> Settings --> Network Settings --> "Alternative Diprint ports"; refer to section 3.5.3 "Alternative Diprint ports" on page 27. 5. Increase the timeout values and/or the number of retries; refer to section 3.5.2 "Timeouts & Retries" on page 26.

[Q 23] The Device Discovery does not discover any of the devices you know are in the network.	1. Check that the network IP address and subnet mask are not mistyped. Otherwise, the network may not exist, or it has no printer devices. 2. Look at the configuration of the firewall or router. If you have a particular configuration, some networks may be invisible. 3. Check whether IBS Communication Ports other than 10001 may be in use. If the network continues to not appear, contact Technical support and/or your local network administrator.
[Q 24] IBS-CC says that IBS is active on the device, but printing fails.	Check on Web Image Monitor (WIM), or (only for Architecture Type Bxx) on the device's operation panel, that "BOCR.gps" has not been stopped.
[Q 26] The print job is lost.	This may happen on some old models or on models with an old version of its mod file, if the job is sent too soon after reboot (even if the display says "Ready"). Ensure that the latest version of the mod file is used. Otherwise, please contact Technical support.
[Q 27] IBS-CC incorrectly shows the status of IBS on a device as "IBS not running".	IBS-CC shows IBS not active for the device. But IBS on the device is working correctly, and WIM correctly shows "BOCR = Starting up" and "BOCR.gps = Waiting". (This also does not change after a device reboot or a new IBS-CC scan.) The reason may be a timeout in the reply from the IBS Communication port (e.g. 10001) to the search. This may be caused by additional software on the device, which may have additional ports open or generally slow down system behaviour. Check the IBS-CC log file. In that case, try increasing one or more of the timeout values described in section 3.5.2 "Timeouts & Retries" on page 26.

For other symptoms or problems related to barcodes, please refer to the Troubleshooting section of the IBS User's Manual - Part II.

5.2 Support

If you need IBS support, please contact Technical support.
 This may be done via IBS-CC; refer to IBS-CC documentation.

Appendix



A. Appendix

A.1 IBS Error Codes

The following table describes the error codes of IBS on the devices, as shown in the Status Indication Files on the PCL Config Page (ERR_CODE=XX, where XX is the error code number), and it suggests corresponding actions to be taken.

Note that instead of a numeric error code, "No Error" or "No PCL5 !" may be displayed.

If there is no error, the text "**No Error**" is displayed.

The text "**No PCL5 !**" indicates that IBS cannot be installed on this device, unless the PCL5 option SD card is installed first.

Table A-1: Error Codes

Error Code	Description	Suggested Action
0	No Errors	No action necessary.
1	IBS Port Binding Failure. Port already used is likely.	Check to ensure that the IBS port is not already used by another application, especially the device. If the problem persists, contact Technical support.
2	Connection to printer port failure.	Contact Technical support.
3	IBS Removal Complete. IBS not running but this is normal.	No action necessary.
4	IBS (main) Replacement or Upgrade File is found invalid. It was removed.	Contact Technical support.
5	CONVERT Replacement or Upgrade File is found invalid. It was removed.	Contact Technical support.
6	Copying IBS Exec from public to private folder failed.	Contact Technical support.
7	ibs.main does not exist in public nor in private folder.	Contact Technical support.
8	Config file contains a blank line.	Contact Technical support.
9	Config file does not exist when data is being retrieved.	Contact Technical support.
10	IBS being installed via VAS. Needs to be restarted.	Restart the device. If the problem persists, contact Technical support.

Error Code	Description	Suggested Action
11	Error that caused thread for IBS-CC communication to end. (pthread_detach)	Contact Technical support.
12	Error that caused thread for IBS-CC communication to end. (pthread_create)	Contact Technical support.
13	Error that caused thread for IBS-CC communication to end. (pthread_attr_init)	Contact Technical support.
14	Error that caused thread for IBS-CC communication to end. (listen failure)	Contact Technical support.
15	Error that caused thread for IBS-CC communication to end. (fopen failure)	Contact Technical support.
16	Error that caused thread for IBS-CC communication to end. (fseek failure)	Contact Technical support.
17	Error after thread for IBS-CC communication is started	Contact Technical support.
18	Error before thread for IBS-CC communication is started.	Contact Technical support.
19	Configuration File contains a blank line.	Contact Technical support.
20	pipe() failed in ibs.main.	Contact Technical support.
21	Shared Memory could not be obtained. (shmget() failure in ibs.main).	Contact Technical support.
22	Shared Memory could not be obtained. (shmat() failure in ibs.main).	Contact Technical support.
23	Semaphore Value could not be initialized. (semctrl failure)	Contact Technical support.
24	*SemID could not be allocated (malloc failure)	Contact Technical support.
25	execl command for ibs.main failed. Program stopping.	Contact Technical support.
26	fork() failure. Too many processes running already.	Contact Technical support.
27	semop() for signalling failed. Program stopped.	Contact Technical support.
28	semop() for waiting failed. Program aborted.	Contact Technical support.
29	stat() failed in giveExecPermission.	Contact Technical support.
30	chmod() failed in giveExecPermission	Contact Technical support.
31	pipe() failed in callProc. Program stopped.	Contact Technical support.
32	fopen() failed in stringInFileExist.	Contact Technical support.
33	convert module in public folder found invalid and does not exist in private. Program stopped.	Contact Technical support.
34	convert module in public folder found invalid. Ignored and deleted.	Contact Technical support.
35	pthread_mutex_unlock failed.	Contact Technical support.
36	pthread_mutex_lock failed.	Contact Technical support.

Error Code	Description	Suggested Action
37	copying file failure.	Contact Technical support.
38	malloc() failure in for IBS-CC Data.	Contact Technical support.
39	uninstall.ini file invalid. Removed.	Contact Technical support.
40	PUB_IBS_DIR could not be opened. Program stopping.	Contact Technical support.
41	Shared Memory could not be obtained. (shmget() failure in ibs.main).	Contact Technical support.
42	Shared Memory could not be obtained. (shmat() failure in ibs.main).	Contact Technical support.
43	Running convert failed. Program stopping.	Contact Technical support.
44	initialize() failed.	Contact Technical support.
45	convert returns number of strings fewer than expected. (bug)	Contact Technical support.
46	malloc() failure for licenseKey.	Contact Technical support.
47	Number of arguments passed to ibs.main incorrect. (bug)	Contact Technical support.
48	Convert does not exist in public nor in private folder. Program stopping.	Contact Technical support.
49	Writing to configuration file failed.	Contact Technical support.
50	Creating default configuration file failed. Program stopping.	Contact Technical support.
51	Config file contains a blank line. Program stopping.	Contact Technical support.
52	Config file does not exist for processing data. Program stopping.	Contact Technical support.
53	Send() failed for sending the first character to the device.	It is normal to have this error temporarily. But if the error persists and no printing takes place, contact Technical support.
54	pthread_attr_init() failure.	Contact Technical support.
55	pthread_create() failure.	Contact Technical support.
56	send() failed to send middle of data stream.	It is normal to have this error temporarily. But if the error persists and no printing takes place, contact Technical support.
57	sendprntdata() failure.	Contact Technical support.
58	gethostname() failure.	Contact Technical support.
59	The OCR_A Font file does not exist in neither the private nor the public area. The OCR font may not work properly.	Contact Technical support.

Error Code	Description	Suggested Action
60	The OCR_B Font file does not exist in neither the private nor the public area. The OCR font may not work properly.	Contact Technical support.
61	The OCR_B Font file does not exist in neither the private nor the public area. The OCR font may not work properly.	Contact Technical support.
62	The printer port is busy or incorrectly specified. This could be a critical error.	1. The printer port is misconfigured. Use IBS-CC to configure the port correctly. 2. Ensure that the device application is running. 3. If the problem persists, contact Technical support.
63	TCP Protocol is disabled. It will not be possible to run the application.	Enable the TCP protocol on the device.
64	IP Boot Error occurred. This means that the IP address is invalid or not unique.	Change the IP address of the device to a unique one.
65	Problem with memory or the HDD. Program is stopped.	Contact Technical support.
66	mkdir fail.	Contact Technical support.
67	debug file send error	Contact Technical support.
68	Install media type error (*68)	Contact Technical support.
69	Wrong SD Card slot	Contact Technical support.
70	One or more of the *.MAC files no longer exist in both the private and the public area. The corresponding fonts may not work properly.	Try reinstalling the install2_xx.PJL file. Otherwise, contact Technical support.

Note: (*68)

On some models this error may also occur if the HDD is not properly disconnected.

A.2 List of Figures

Figure 1-1: System Diagram	9
Figure 1-2: Architecture Type B Models	10
Figure 2-1: WIM Extended Feature Info	18
Figure 2-2: Operation Panel Extended Feature Info	18
Figure 2-3: Extended Features Information on WIM	18
Figure 2-4: Device Operation Panel: Extended Feature Information	19
Figure 2-5: Information on Device Operation Panel via [Information] key	19
Figure 3-1: Test Sheet	32

A.3 List of Tables

Table 1-1: Icon Conventions	8
Table 1-2: Components of IBS	9
Table 1-3: Components to be Installed	13
Table 1-4: Components to be Removed	13
Table 1-5: Components to be Upgraded	13
Table 2-1: Keyword Description	20
Table 2-2: Possible Port Values	22
Table : Documentation of IBS-CC	25
Table 3-4: Device Information shown in IBS-CC	28
Table 3-6: IBS-CC operations	30
Table A-1: Error Codes	39
Table A-2: Device Classes	44

A.4 Appendix D: Device models

The following table lists all device classes whose models are supported by IBS.

For the proper model names for each device class refer to Volume 1.

For more detailed information on a particular Device Class, please refer then to the corresponding Volume 3. Both documents can be found on your distribution medium, in folder \SAP\doc\.

IBS can be installed to HDD.

Please contact Technical support for further details.

Table A-2: Device Classes

Device Class	Architecture Type	HDD-based System	
DC83 (*EOL)			
DC84 (*EOL)			
DC85 (*EOL)			
DC87 (*EOL)			
DC88 (*EOL)			
DC89	Bjx	X	
DC91 (*EOL)			
DC92 (*EOL)			
DC94 (*EOL)			
DC95 (*EOL)			
DC96 (*EOL)			
DC98 (*EOL)			
DC99 (*EOL)			
DC100 (*EOL)			
DC101	Bjs	X	
DC102	Bjs	X	
DC103	Bjx	X	
DC107	Bjx	X	
DC108 (*EOL)			
DC110	Bjs	X	
DC112	Bjs	X	
DC113 (*EOL)			
DC114	Bjs	X	
DC115 (*EOL)			
DC116	Bjs	X	
DC117	Bjs	X	
DC118	Bjs	X	
DC119	Bjs	X	
DC120	Bjs	X	
DC121	Bjs	X	
DC122	Bjs	X	
DC123	Bjs	X	
DC124	Bjs	X	
DC125	Bjs	X	
DC126	Bjs, Bc3	X	
DC127 (*EOL)			
DC128 (*EOL)			
DC129	Bjs	X	
DC130	Bjs, Bc3	X	
DC133	Bjs, Bc3	X	
DC134	Bjs, Bc3	X	
DC135	Bjs, Bc3	X	
DC136	Bjs, Bc3	X	
DC138	Bjs, Bc3	X	
DC139	Bjs, Bc3	X	

Device Class	Architecture Type	HDD-based System	
DC140	Bjs	X	
DC141	Bjs	X	
DC142	Bjs, Bc3	X	
DC144	Bjs, Bc3	X	
DC145	Bjs	X	
DC146	Bc3	X (eMMC)	
DC147	Bc3	X	
DC149	Bc3	X (default: SSD)	
DC151	Bc3	X	
DC154	Bc3	X (default: eMMC)	
DC155	Bc3	X (default: eMMC)	
DC156	Bc3	X (eMMC)	
DC157	Bc3	X	
DC158	Bc3	X (default: SSD)	
DC159 (*β)	Bc3	X	
DC160 (*β)	Bc3	X	
DC161 (*β)	Bc3	X	
DC162 (*β)	Bc3	X	
DC163	Bc3	X (default: SSD)	
DC164	Bc3	X	
DC165	Bc3	X	

Note: (*β) For these Device classes IBS is only supported as an untested beta version.

Note: (*EOL) This model is no longer supported, as it has reached its end of life.

Index



Index

/	
/pcl/ibs	21
A	
Architecture	
Type A Models	10
Type B Models	10
B	
Barcode & OCR Package – Intelligent Version (IBS) description	7
Barcode debugging, see also Debug Mode	34
BOCR	7
BOCRCT	7, 24
C	
Cancelling the scan process	39
Check for IBS Installation	17
Chrome (Google)	24
Communication port	
Values	23
Components	9
Configure	
Debug Mode	31
Ports	31
Configure barcoding	11
Connectivity situation, Type B Models	10
Controller architectures, see The Mechanism	10
Conventions	7
Figures	8
Icons	7
Typography	8
CONVERT	13
Crash analysis, see also Debug Mode	34
D	
Debug Log data	38
Debug method	
Analyze like legacy BOCRCT	34
Capture jobs	33
Demo Mode	12, 15
DEMO, see Licensing	12
detection of IBS by IBS-CC	38
Device Information	28
Device Models	46
Device requirements	16
Device Search	30
Device, see Components	9
Diprint port	
Values	23
Diprint Port	23
Distribution medium	25
Distribution of IBS-CC	25
DOS prompt	22
E	
ERR XX	39
ERR_CODE=XX	41
Error Codes (IBS)	41
F	
filter function	29
Firefox (Mozilla)	24
fork() failure	42
Forms	31
G	
Get Debug Logs	31
Google Chrome	24
gpsfilter	10
H	
HDD Directory List	20
I	
IBS	
(base)	13
(main)	13
IBS-CC	24
Distribution	25
Installation	25
Operations	30
Removal	26
Upgrading	26
IBS-CC Managing Station Requirements	24
IBS-CC Requirements, see Managing Station	24
Installation	13
IBS-CC	25
of IBS	30
Installation Flow	17
Installation of IBS	15
Installation Order IBS	13, 17
Installed -Base IBS Systems	12
Internet Explorer (Microsoft)	24
IP Boot Error	44
Issuing system requirements	11
Issuing Systems, see Components	9
J	
JetCAPS compatibility	36

L

Licensing	12, 30
Locations	13
lpr.....	10

M

Managing Station.....	24
System Requirements.....	24
Managing Station, see Components.....	9
Microsoft Internet Explorer.....	24
Model name	11, 46
Models	
Devices	46
Mozilla Firefox	24

N

Non-demo Mode	15
---------------------	----

O

OCR_A Font	43
OCR_B Font	44
Operating IBS-CC.....	30
Operations (IBS-CC).....	30
other SDK application	36

P

PCL 5.....	36
PCL Config. Page.....	21
PCL Config./Font Page.....	21
PCL file	22
PCL font select commands, see System Requirements.....	10
PCL HDD Directory List page	21
PDL Parser	10
Platform, see also Issuing System	11
Communication port	
Communication	23
Port	
Values	23
Port Binding Failure	41

Q

Quicksets	31
-----------------	----

R

Removal	13
---------------	----

IBS-CC	26
of IBS.....	22, 31
Required Environment	16
Requirements	
Device	16
Resolution	36
retrieve debug information	34

S

SAP environment, see Testing IBS Independent	22
SAP R/3, see Issuing System Requirements	11
SAP systems R/3, mySAP ERP	11
Search Devices.....	30
semop() failure.....	42
Shared Memory problems	42
Starting IBS-CC	26
Status and Configuration Information	20
Status Indication Files.....	20
Status Readback Integrity.....	12, 13
Support	40
Supported Barcode Types	12
Supported devices see Device Classes	11
Supported Web browsers	24
System Diagram	9
System Requirements	11

T

TCP raw printing	10
tcpsend program.....	22
tcpsendrb	22
Test.....	31, 32
Test sheet	33
The Mechanism	10

U

Upgrading	13
IBS-CC	26
Upgrading of IBS	22
Upload	31

W

Watermark	12
Working with IBS-CC	30

Glossary



Glossary

Term	Definition
block mode	Mode of CONVERT where data is read blockwise. Faster than byte mode, but status read-back may fail.
BOCR	Legacy acronym of "Barcode & OCR Package - Intelligent Version". In a narrower sense, the portion of it that runs on the device. Replaced by "IBS".
BOCR (base)	Legacy name of "IBS (base)" on older systems.
BOCR (main)	Legacy name of "IBS (main)" on older systems.
BOCR Port	(For Architecture Type A Models only) The port where the print job is sent to. Default port number is 10000.
BOCR.gps	Legacy name of "IBS.gps" on older systems.
BOCRCT	Acronym of "BOCR Control Tool", the legacy predecessor of IBS-CC.
byte mode	Mode of CONVERT where data is read byte-wise. Needed for status read-back, but slower than block mode.
Client	A network station requesting services from a server.
Communication Port	Port used for communication between BOCRCT and IBS. Default port number is 10001.
CONVERT	The core module of IBS installed on the device that converts the input print data to barcode data.
Diprint port	The TCP port used for TCP raw printing (also known as "Direct Printing"). This is a setting on the device with a corresponding setting of IBS; both must match.
DNS	(Domain Name System) System to map or resolve names into IP addresses.
HDD	(Hard Disk Drive) Part of the computer or device which permanently stores data.
HDD-based IBS System	A device with IBS installed and running on the HDD or SSD.
Hop	Term used to measure the distance between networks, with the normal distance between two adjacent networks being one hop. Normally, the number of routers between two networks.
Host name	A string that can be used instead of a numeric IP address to identify a device. A DNS Server is able to resolve these strings into numeric IP addresses.
IBS	Acronym of "Barcode & OCR Package - Intelligent Version" (formerly "BOCR"). In a narrower sense, the portion of it that runs on the device.
IBS (base)	IBS (base) is installed in the device, and this module is launched when the machine starts, and runs IBS (main).
IBS (main)	The core module of IBS installed in the device. For example, the communication with IBS-CC is accomplished through this module.
IBS System	IBS installed and running on a device.
IBS.gps	For Architecture Type Bj, the C-based portion of IBS on the device.

Term	Definition
IBS-CC	IBS Control Center; the tool to manage IBS on the devices (obsoletes former "BOCRCT")
Installation Medium	The medium (CD, Zip file) on which the installation files are distributed.
IP	(Internet Protocol) IP is a protocol by which data is sent from one station to another across networks.
IP address	An IP address is a 32-bit number (IP v4) that identifies a sender or receiver of a packet in IP communication.
Issuing System	The system that initiates the printing request.
LAN	(Local Area Network) A LAN is a group of computers and associated devices that share a common communications line or wireless link and typically share the resources of a server within a small geographic area (for example, within an office building).
LPR	(Line Print(er) Request(er)) A printing protocol.
Managing Station	A computer that BOCRCT is installed and runs on, that manages all IBS systems installed on devices in a network.
MHz	(Megahertz) Speed unit of the CPU.
Network Discovery	The process of discovering all active stations (especially devices) in a network.
OCR-A/B	(Optical Character Recognition.) A typeface to enable machine reading of text.
PCL	(Printer Control Language) A printer language by HP.
Port	In an IP network a port is a number assigned to user sessions, server applications and services of a computer. Example: LPR port is 515.
PRN file	A file (usually with extension *.prn) containing print job data.
Protocol	A standard way of communicating across a network.
Router	Network station routing packets from one network to another.
SAP	The primary type of issuing system for barcoding with IBS.
Server	A network station offering a service to clients.
SSD	(Solid-State Drive) An alternative storage medium compatible to HDD.
System Base Media	The media type (HDD / SSD / eMMC) to which the system is installed and where it is running.
TCP	(Transmission Control Protocol) A part of the TCP/IP protocol stack.
TCP Raw Printing	A printing protocol using plain TCP. (Also known as Direct Printing)
tcpsend	Command-line tool to send a print job file (*.PRN) via TCP raw printing to the Diprint port of an MFP or a printer device.
WIM	(Web Image Monitor) Remote device configuration tool.

