

FUJITSU Software

NetCOBOL V12.2.0



Release Notes

Linux(64)

J2UL-2319-02ENZ0(00)
May 2020

Preface

This book explains Release Note of NetCOBOL.

Abbreviations

The name of the product described in this book is written for short as follows.

Product Name	Abbreviation
Red Hat(R) Enterprise Linux(R) 8 (for Intel64)	Linux or Linux(64)
Red Hat(R) Enterprise Linux(R) 7 (for Intel64)	
Red Hat(R) Enterprise Linux(R) 6 (for Intel64)	
Red Hat(R) Enterprise Linux(R)	Red Hat Enterprise Linux
Microsoft(R) Windows Server(R) 2019 Datacenter	Windows Server 2019
Microsoft(R) Windows Server(R) 2019 Standard	
Microsoft(R) Windows Server(R) 2019 Essentials	
Microsoft(R) Windows Server(R) 2016 Datacenter	Windows Server 2016
Microsoft(R) Windows Server(R) 2016 Standard	
Microsoft(R) Windows Server(R) 2016 Essentials	
Microsoft(R) Windows Server(R) 2012 R2 Datacenter	Windows Server 2012 R2
Microsoft(R) Windows Server(R) 2012 R2 Standard	
Microsoft(R) Windows Server(R) 2012 R2 Essentials	
Microsoft(R) Windows Server(R) 2012 R2 Foundation	
Microsoft(R) Windows Server(R) 2012 Datacenter	Windows Server 2012
Microsoft(R) Windows Server(R) 2012 Standard	
Microsoft(R) Windows Server(R) 2012 Essentials	
Microsoft(R) Windows Server(R) 2012 Foundation	
Windows(R) 10 Home	Windows 10
Windows(R) 10 Pro	
Windows(R) 10 Enterprise	
Windows(R) 10 Education	
Windows(R) 8.1	Windows 8.1
Windows(R) 8.1 Pro	
Windows(R) 8.1 Enterprise	

Microsoft Windows products listed in the table above are referred to in this manual as "Windows".

Purpose of This Manual

This documentation explains the additional function, the bug fix and the interchangeable information from the old edition.

It has aimed can the smoother shift of the customer who was using the old edition to this product.

Intended Readers

This document is for customers who are using old edition of this products and intended for shift or shifting to this product.

Positioning of This Manual

This document explains only fragments of the additional function, the bug fix, and the interchangeable information from the old edition. For details and to get the overall look of the product, refer to each product manual.

Related Manuals

The manual of this product and a related product includes the following manuals besides this document.

- NetCOBOL Language Reference
- NetCOBOL Syntax Samples
- NetCOBOL User's Guide
- NetCOBOL User's Guide (Third-Party COBOL Resource Migration)
- NetCOBOL COBOL File Access Subroutines User's Guide
- NetCOBOL CBL Subroutines User's Guide
- NetCOBOL LE Subroutines User's Guide
- NetCOBOL Messages
- NetCOBOL Hadoop Integration Function User's Guide
- NetCOBOL Getting Started
- J Adapter Class Generator User's Guide
- PowerFORM Runtime Reference
- PowerBSORT (64bit) User's Guide

Trademarks

- Linux(R) is the registered trademark of Linus Torvalds in the U.S. and other countries.
- Red Hat and Red Hat Enterprise Linux are trademarks or registered trademarks of Red Hat, Inc. in the United States and/or other countries.
- Intel and Itanium are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries.
- Microsoft, Windows, and Windows Server are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Oracle and Java are registered trademarks of Oracle and/or its affiliates.
- MICRO FOCUS and the Micro Focus COBOL are trademarks or registered trademarks of Micro Focus (IP) Limited or its subsidiaries in the United Kingdom, United States and other countries.
- All other trademarks are the property of their respective owners.

Export Controls

Exportation/release of this document may require necessary procedures in accordance with the regulations of your resident country and/or US export control laws.

The contents of this manual may be revised without prior notice. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of Fujitsu Limited.

May 2020

Copyright 2009-2020 FUJITSU LIMITED

Contents

Chapter 1 Outline of Additional Functionality.....	1
1.1 All Products.....	1
1.2 NetCOBOL.....	1
1.3 J Adapter Class Generator.....	7
1.4 PowerFORM.....	7
1.5 Fujitsu mainframe format floating-point arithmetic emulator.....	8
1.6 PowerBSORT.....	8
Chapter 2 Information on interchangeability.....	11
2.1 NetCOBOL Development Environment.....	11
2.1.1 Enhanced compiler check of a national item, national edited item and NATIONAL function.....	11
2.1.2 Change the file association by using PRINTER_n phrase.....	11
2.1.3 Interchangeable information regarding bug fixes.....	12
2.2 NetCOBOL Runtime Environment.....	18
2.2.1 Adding variable Information for runtime messages.....	18
2.2.2 About the BOM of the UTF-8 file.....	18
2.2.3 Process ID notified by the subroutine (COB_GET_PROCESSID).....	19
2.2.4 Interchangeable information regarding bug fixes.....	19
2.3 J Adapter Class Generator.....	22
2.4 PowerFORM.....	22
2.4.1 Trace log.....	23
2.5 Fujitsu mainframe format floating-point arithmetic emulator.....	23
2.6 PowerBSORT.....	23
2.6.1 Interchangeable information regarding bug fixes.....	23
Chapter 3 Program Fix List.....	25
3.1 NetCOBOL Development Environment.....	25
3.2 NetCOBOL Runtime Environment.....	28
3.3 J Adapter Class Generator.....	28
3.4 PowerFORM.....	28
3.5 Fujitsu mainframe format floating-point arithmetic emulator.....	30
3.6 PowerBSORT.....	30
Chapter 4 Notes to consider when a Japanese native application is converted to run globally.....	32
4.1 Guideline.....	32
4.2 Languages.....	32
4.3 Feature difference with Japanese version.....	32
4.3.1 Related products.....	32
4.3.2 Specifications.....	33
4.3.2.1 Currency symbol.....	33
4.3.2.2 Handling of National item spaces.....	33
4.3.2.3 Printing.....	34
4.3.3 PowerFORM RTS.....	34

Chapter 1 Outline of Additional Functionality

New product functionality and content is outlined below by version and level.

1.1 All Products

The following Information applies to all products.

Table 1.1 Outline of additional functionality in NetCOBOL V12

NO.	V/L	Function Name	Content	Location in Manual
1	V12.2.0	OS support	Red Hat Enterprise Linux 8 is supported.	-

Table 1.2 Outline of additional functionality in NetCOBOL V11

NO.	V/L	Function Name	Content	Location in Manual
1	V11.0.0	Fujitsu Common Tools	Fujitsu Middleware Installation System and FJQSS (Information Collection Tool)	Software Release Guide - Appendix D FJQSS (Information Collection Tool)
2	V11.0.0	OS support	Red Hat Enterprise Linux 7 is supported.	-



Note

The V/L column lists the version and level of NetCOBOL Enterprise Edition.

1.2 NetCOBOL

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux
- NetCOBOL Standard Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Standard Edition Runtime (64bit) for Linux
- NetCOBOL Base Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Base Edition Runtime (64bit) for Linux

Table 1.3 Outline of additional function of NetCOBOL V12

NO.	V/L	Function Name	Content	Location in Manual
1	V12.2.0	Pre-compilation source convert function	The pre-compilation source convert function converts the source program written in the third-party COBOL syntax, into a source program which can be compiled by NetCOBOL. Using this function, it can automatically convert source programs and can perform migration efficiently.	NetCOBOL User's Guide (Third-Party COBOL Resource Migration) NetCOBOL User's Guide - 3.3.1.2 -CV (Specify use of the pre-compiler source conversion function) - A.2.17 FLAG (Diagnostic Message Level)

NO.	V/L	Function Name	Content	Location in Manual
				- Appendix N cobpreconv Command NetCOBOL Messages
2	V12.2.0	Micro Focus COBOL file migration tool	Micro Focus COBOL file migration tool converts the COBOL file created by an application written in Micro Focus COBOL syntax into a format accessible by NetCOBOL. Using this tool, you can automatically convert COBOL files and can perform migration efficiently.	NetCOBOL User's Guide (Third-Party COBOL Resource Migration) - Chapter 3 Migration COBOL File
3	V12.2.0	Program repair support function (*1)	In the program repair, you can identify the source file used to create an executable file when multiple source files may have been used during development. In build, you can skip the option to re-compile programs that are not affected by the change.	NetCOBOL User's Guide - Chapter 23 Program Repair Support Function - A.2.36 OBJECT (whether an object program should be output) - Appendix O cobcmpo Command
4	V12.2.0	Dump function	Support for dump information written from the executable file and object program. This allows you to check the following information: - Compiler options specified when creating an object program. - Object programs constituting an executable file. - Recommended compiler options to be unified between programs.	NetCOBOL User's Guide - Appendix P cobdump Command
5	V12.2.0	Data item boundary specification support	Compiler can align the data item with SYNCHRONIZED clause specified on NetCOBOL native boundary or system boundary.	NetCOBOL User's Guide - A.2.53 SYNC (Handling of data item boundary with SYNCHRONIZED clause specified)
6	V12.2.0	cobol command improvements	Compiler control levels can be displayed using the -v option of the COBOL command.	NetCOBOL User's Guide - 3.3.1.19 -v (Specification for type of information to be output)
7	V12.0.0	COMP-6 support	The data of packed decimal data item without sign half-byte of the Micro Focus native can be used by describing USAGE IS COMPUTATIONAL-6.	Language Reference - 10.7 Packed decimal data item without sign half-byte
8	V12.0.0	Fujitsu mainframe format floating-point support (*2)	The data of Fujitsu mainframe format floating-point can be operated by using the Fujitsu mainframe format floating-point arithmetic emulator.	NetCOBOL User's Guide - A.2.19 FLOAT (Internal format of internal floating-point item)

NO.	V/L	Function Name	Content	Location in Manual
				<ul style="list-style-type: none"> - A.2.20 FLOATCHK (Mixed check of internal format of internal floating-point items at execution time) - Appendix P Format of floating-point
9	V12.0.0	LE subroutine support	The LE subroutines of IBM can be used.	NetCOBOL LE Subroutines User's Guide
10	V12.0.0	Switch of compiler diagnostic message format	Compiler diagnostic message format can be switched. The message is displayed in the standard error output.	NetCOBOL User's Guide <ul style="list-style-type: none"> - 3.1.1.5 COBMSG_FORMAT (Specification of diagnostic message format)

*1: The program recovery support function is available in the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux

*2: The Fujitsu mainframe format floating-point is available in the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux

Table 1.4 Outline of additional function of NetCOBOL V11

NO.	V/L	Function name	Content	Location in Manual
1	V11.1.0	Enhanced file-identifier and file-identifier literal	Up to 30 characters can now be specified for file-identifier. The file-identifier literal can be treated as an environment variable name.	NetCOBOL User's Guide <ul style="list-style-type: none"> - A.2.16 FILELIT(file-identifier literal handling)
				NetCOBOL Language Reference <ul style="list-style-type: none"> - 4.3.1.3 ASSIGN Clause (Sequential File, Relative File, and Indexed File)
2	V11.1.0	ODBC support	The database access by ODBC is supported.	NetCOBOL User's Guide <ul style="list-style-type: none"> - Chapter 16 Database (SQL) - A.2.46 SQLGRP(SQL host variable definition expansion)
				NetCOBOL Language Reference <ul style="list-style-type: none"> - Chapter 8 Database (SQL)
3	V11.1.0	ltrace support	When the shared library is created specifying optional PLT, this library of the dynamic linking structure can be traced by using the ltrace command. Moreover, the processing time of the external program can be measured.	NetCOBOL User's Guide <ul style="list-style-type: none"> - A.2.36 PLT (Specifies to trace the external program calls that are included in a shared library) - Appendix M ltrace Command
4	V11.1.0	PRINTER_n support	In the ASSIGN clause, PRINTER_n phrase is supported. n for PRINTER-n is an integer from 1 through 99.	NetCOBOL Language Reference <ul style="list-style-type: none"> - 4.3.1.3 ASSIGN Clause (Sequential File, Relative File, and Indexed File)

NO.	V/L	Function name	Content	Location in Manual
				- 11.8.6.17 The WRITE Statement (Object-oriented Programming)
5	V11.1.0	Enhanced cobmkmf command	The extensions other than default (*.cob, *.cobol) can be used as an extension of the source files that the cobmkmf command handles. Moreover, the files in the subdirectory can be included in the build target.	man manual of the cobmkmf command.
6	V11.1.0	CBL subroutines support	Support of CBL subroutines that are compatible with COBOL CBL subroutines from Micro Focus Co., Ltd.	NetCOBOL CBL Subroutines User's Guide
7	V11.1.0	Supports specification of data area allocation method	Specify whether the memory which allocates the program data area is acquired statically or dynamically.	NetCOBOL User's Guide - 8.1.2.3 Program data area allocation - A.2.11 DATAAREA (Specifies the method of data area allocation)
8	V11.0.0	UTF-32 support	Encoding form UTF-32 and Shift-JIS can now be used.	NetCOBOL User's Guide - Chapter 18 Unicode
9	V11.0.0	Hadoop support (*1)	The hadoop integration function can now be used.	Hadoop Integration Function User's Guide
10	V11.0.0	Named pipes of COBOL File Access Routines	Named pipes of COBOL File Access Routines is supported.	COBOL File Access Subroutines User's Guide - 3.27 Named pipe

*1: The hadoop integration function is available in the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux

Table 1.5 Outline of additional function of NetCOBOL V10

NO.	V/L	Function name	Content	Description place of manual
1	V10.4.0	31-digit support	Up to 31 digits can now be used for numeric items.	NetCOBOL Language Reference - 1.2.3.1 Numeric Literal - 1.7 Operation Mode - 5.4.8 PICTURE Clause - 5.4.16 USAGE Clause - 8.2.2 Host Variable Definitions - Appendix D Intermediate Results
				NetCOBOL User's Guide - 6.8 Other File Functions - A.2.2 ARITHMETIC
				NetCOBOL Messages

NO.	V/L	Function name	Content	Description place of manual
2	V10.4.0	Recursive calls	Programs can now be called recursively. Data items used by the recursive program are defined in the LOCAL-STORAGE SECTION.	NetCOBOL Language Reference <ul style="list-style-type: none"> - 1.3.5.2 Slack Bit - 2.1 Nucleus - 2.3 Input-Output Facility - Inter-program Communication Module - 2.3.3 External Attribute and Internal Attribute - 2.3.5 Program Activation - 2.3.7 Initial State of a Program - 2.3.8 Recursive Attribute of the Program - 3.1.1 Program-Id Paragraph - 4.3.1.1 ACCESS MODE Clause - 4.3.1.3 ASSIGN Clause (Sequential File, Relative File, and Indexed File) - 4.3.1.8 FILE STATUS Clause - 4.3.1.9 FORMAT Clause - 4.3.1.10 GROUP Clause - 4.3.1.23 PROCESSING MODE Clause - 4.3.1.30 SELECTED FUNCTION Clause - 4.3.1.32 SYMBOLIC DESTINATION Clause - 4.3.1.33 UNIT CONTROL clause - 5.1 Composition of the Data Division - 5.2.9 RECORD Clause - 5.4 Data Description Entry - 5.4.3 CHARACTER TYPE Clause - 5.4.13 SYNCHRONIZED Clause - 5.4.17 VALUE Clause - 6.4.7 CALL Statement - 8.2.1 Embedded SQL Declare Section - 10.2.3 Data Description Entry

NO.	V/L	Function name	Content	Description place of manual
				<ul style="list-style-type: none"> - Appendix A List of Reserved Words
				NetCOBOL User's Guide <ul style="list-style-type: none"> - 8.1 Calling Relationship Types
3	V10.4.0	Unified specification of high-speed file processing	High-speed file processing can be specified for record sequential and line sequential files with one configuration specification as opposed to requiring specification for each file.	NetCOBOL User's Guide <ul style="list-style-type: none"> - 4.1.1 Runtime Environment - 6.8.1.2 High-speed File Processing - Batch specification
				NetCOBOL Messages
4	V10.4.0	Syslog output	The Syslog can be specified as the output destination for DISPLAY statements.	NetCOBOL User's Guide <ul style="list-style-type: none"> - 4.1.1 Runtime Environment - 9.1 ACCEPT/DISPLAY Function - 9.1.9 Programs Using Syslog - Appendix E Environment Variable List <ul style="list-style-type: none"> - CBR_DISPLAY_CONSOLE_SYSLOG_LEVEL - CBR_DISPLAY_CONSOLE_SYSLOG_IDENT - CBR_DISPLAY_CONSOLE_OUTPUT - CBR_DISPLAY_SYSER_R_SYSLOG_LEVEL - CBR_DISPLAY_SYSER_R_SYSLOG_IDENT - CBR_DISPLAY_SYSER_R_OUTPUT - CBR_DISPLAY_SYSOULT_SYSLOG_LEVEL - CBR_DISPLAY_SYSOULT_SYSLOG_IDENT - CBR_DISPLAY_SYSOULT_OUTPUT
5	V10.4.0	CHECK function suppress option	Runtime options are provided to suppress individual CHECK functions. <ul style="list-style-type: none"> - nocb - noci - nocn - nocp 	NetCOBOL User's Guide <ul style="list-style-type: none"> - 4.2.2 Specifying Runtime Options - 4.2.2.2 [c count { noc nocb noci nocn nocp }] - 5.3.2 Output Messages
6	V10.4.0	TRACE function suppress option	Runtime option is provided that suppresses the TRACE function.	NetCOBOL User's Guide

NO.	V/L	Function name	Content	Description place of manual
			- nor	- 4.2.2 Specifying Runtime Options - 4.2.2.1 [r count nor] (Set the trace data limit, and suppress the TRACE function)
7	V10.4.0	TRACE information file for separate processes	Separate TRACE information files can be generated for different processes to avoid conflicts in writing to the file.	NetCOBOL User's Guide - 4.1.1 Runtime Environment - 5.2.2 Trace Information

1.3 J Adapter Class Generator

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux
- NetCOBOL Standard Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Standard Edition Runtime (64bit) for Linux

Table 1.6 Outline of additional function of J Adapter Class Generator V11

NO.	V/L	Function name	Content	Location in Manual
1	V11.0.0	Encoding form Shift JIS support.	Encoding form Shift JIS can now be used.	J Adapter Class Generator User's Guide

1.4 PowerFORM

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux
- NetCOBOL Standard Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Standard Edition Runtime (64bit) for Linux

Table 1.7 Outline of additional function of PowerFORM V12

NO.	V/L	Function Name	Content	Location in Manual
1	V12.2.0	Enhanced print features	New era (Reiwa) is supported.	-
2	V12.2.0	Security enhancement	The permission of files and directories related to the trace log after the installation changes.	PowerFORM Runtime Reference - Appendix D Trace Log
3	V12.0.0	Enhanced print features	The era name of Japanese calendar can be customized.	PowerFORM Runtime Reference - C.6.19 GENGO (Japanese era name)

Table 1.8 Outline of additional function of PowerFORM V11

NO.	V/L	Function name	Content	Location in Manual
1	V11.0.0	31-digit support	Up to 31 digits can now be used for numeric fields in COBOL applications.	PowerFORM Runtime Reference - Output field declarations

NO.	V/L	Function name	Content	Location in Manual
2	V11.0.0	Form exporting	The Form can now be outputted to PDF.	PowerFORM Runtime Reference - Chapter 4. Extended Functions - Appendix C. Printer Information File
3	V11.0.0	UTC (Coordinated Universal Time) support	UTC (Coordinated Universal Time) can be specified.	PowerFORM Runtime Reference - Appendix C. Printer Information File
4	V11.0.0	Enhanced print features	The Form Descriptor (free frame) can be used.	PowerFORM Runtime Reference - Chapter 4. Extended Functions
5	V11.0.0	Enhanced print features	The new function added in PowerFORM V11 can be used.	PowerFORM Runtime Reference - What's New in PowerFORM V11

1.5 Fujitsu mainframe format floating-point arithmetic emulator

The Fujitsu mainframe format floating-point arithmetic emulator is provided from V12 or later.

Information described here applies to the following products.

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux

Table 1.9 Outline of additional function of Fujitsu mainframe format floating-point arithmetic emulator V12

NO.	V/L	Function Name	Content	Location in Manual
1	V12.0.0	Fujitsu mainframe format floating-point support	The data of Fujitsu mainframe format floating-point can be operated by using the Fujitsu mainframe format floating-point arithmetic emulator.	NetCOBOL User's Guide - A.2.19 FLOAT (Internal format of internal floating-point item) - A.2.20 FLOATCHK (Mixed check of internal format of internal floating-point items at execution time) - Appendix P Format of floating-point

1.6 PowerBSORT

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux

Table 1.10 Outline of additional function of PowerBSORT V8

NO.	V/L	Function Name	Content	Location in Manual
1	V8.0.0	Data format	The COMP-6 format and Fujitsu mainframe format floating-point were supported with NetCOBOL.	PowerBSORT User's Guide - 1.6.3 Data format

NO.	V/L	Function Name	Content	Location in Manual
				- 1.6.4 Data forms that can be specified in each field

Table 1.11 Outline of additional function of PowerBSORT V7

NO.	V/L	Function name	Content	Location in Manual
1	V7.0.0	Data format	The Unicode UTF-32 form was supported as data format.	PowerBSORT User's Guide <ul style="list-style-type: none"> - 1.4 Environment variables and Startup file - 1.6.3 Data format - 1.6.4 Data forms that can be specified in each field - 3.2.16 Input code system option (-q) - 3.2.26 COBOL file index specification option (-X) - 4.2.7.3 icode operand - 4.2.8.10 idxkey operand - 6.5.1 BSRTPRIM structure - 6.5.10 BSIDXKEY structure
2	V7.0.0	Record summation option	The length of data formats that can be specified for the binary file has been enhanced	PowerBSORT User's Guide <ul style="list-style-type: none"> - 1.6.4.2 Data formats that can be specified in the summation field
3	V7.0.0	Record selection option	The length of data formats that can be specified by a literal value has been enhanced.	PowerBSORT User's Guide <ul style="list-style-type: none"> - 1.6.4.3 Data formats that can be specified in the selection field
4	V7.0.0	Record reconstruction option	The length of data formats that can be specified by a literal value has been enhanced.	PowerBSORT User's Guide <ul style="list-style-type: none"> - 1.6.4.4 Data formats that can be specified in the literal value of the reconstruction field
5	V7.0.0	File types	The physical sequential file format supported by COBOL85 that operated on the Fujitsu mainframe was supported.	PowerBSORT User's Guide <ul style="list-style-type: none"> - 1.4.2 Startup file - 1.5 PowerBSORT Input Output Environment - 3.2.3 I/O file system option (-F) - 4.2.5.3 filesys operand - 6.5.8 BSFSYS structure - B.8 Important Notes about the NetCOBOL File system

Table 1.12 Outline of additional function of PowerBSORT V6

NO.	V/L	Function name	Content	Location in Manual
1	V6.1.0	Data format	The external decimal number of Micro Focus COBOL form was supported as data format.	PowerBSORT User's Guide - 3.2.16 Input code system option (-q) - 4.2.7.3 icode operand - 6.5.1 BSRTPRIM structure

Chapter 2 Information on interchangeability

Here, information on the interchangeability changed from the version and level before is described.

2.1 NetCOBOL Development Environment

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Standard Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Base Edition Developer and Runtime (64bit) for Linux

2.1.1 Enhanced compiler check of a national item, national edited item and NATIONAL function

Content

- V11.0 or earlier

In the following locales, the COBOL compiler is able to compile the program that contains the national item, national edited item and NATIONAL function as described.

- C

- V11.1 or later

In the following locales, when the COBOL compiler compiles the program that the national item, national edited item and NATIONAL function are described, the following message is output.

- C

```
JMN1859I-S  
'@l@' cannot be specified in the coded character set being used. '@l@' is ignored.
```

Parameter explanation

@l@: national item, national edited item or NATIONAL function

Action

You will modify the source in the following way.

- Remove or rewrite the cause of the error (national item, national edited item and NATIONAL function).



J Adapter Class Generator

Java-lang-String class generated with the java2cob command (in V11.0 or earlier) contains the national item.

In the locale environments other than xx_XX.UTF-8, when this adapter class is compiled by using the compiler V11.1 or later, the above error is output. In this case, you should regenerate the adapter class by using java2cob command (in V11.1 or later).

In the locale environments other than xx_XX.UTF-8, if you use the adapter class, the adapter class should be the one generated with the following conditions.

- Use the java2cob command with -cs option
- Specify "Option Code=SJIS" in the optional file, and use the java2cob command.

2.1.2 Change the file association by using PRINTER_n phrase

Content

- V11.0 or earlier

The ASSIGN clause with PRINTER_n phrase associates file-name with a physical file.

- V11.1 or later

The ASSIGN clause with PRINTER_n phrase associates file-name with a printing device.

Action

Change PRINTER_n to another name.

2.1.3 Interchangeable information regarding bug fixes

Here, it explains bug fixes corrected by NetCOBOL V10.1.0 and later version in which the operation of the NetCOBOL development environment changes in the following tables.

Table 2.1 Interchangeable information on bug fixes of NetCOBOL Development Environment

NO.	V/L (*)	P number	Content of change
1	V10.1.0 to V12.0.0	PH14815	<p>Under the following conditions, when a COBOL program is executed, it might not behave correctly.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. Compiler option INITVALUE is specified, and a value other than 00 is specified as the value of INITVALUE. 2. And, a data item is defined without an initial value in the working-storage section of the factory data or object data. 3. And, reference without setting a value in the data item of 2.
2	V10.1.0 to V11.0.0	PH06787	<p>Under the following [Condition 1] or [Condition 2], when a COBOL program is executed, there are times when correct value cannot be passed to the temporary parameter.</p> <p>[Condition 1]</p> <ol style="list-style-type: none"> 1. When calling of any of the following is being used. <ul style="list-style-type: none"> - Method calling with the INVOKE statement - In-line calling of the method 2. And, in the calling of 1, any of the following parameter is specified. <ul style="list-style-type: none"> - Parameter which specifies BY CONTENT - data item of the constant section - nonnumeric literal 3. And, JUSTIFIED clause is being specified in the temporary parameter of the calling destination of 1. 4. And, when length of parameter of 2, and length of temporary parameter of 3 varies. <p>[Condition 2]</p> <ol style="list-style-type: none"> 1. When calling of any of the following is being used. <ul style="list-style-type: none"> - Method calling by INVOKE statement - In-line calling of the method 2. And, in the calling of 1, any of the following parameters are specified. <ul style="list-style-type: none"> - Parameter specified with BY CONTENT

NO.	V/L (*)	P number	Content of change
			<p>- data item of the constant section</p> <p>- nonnumeric literal</p> <p>3. And, in the temporary parameter of calling destination of 1, BLANK WHEN ZERO clause is being specified.</p> <p>4. And, the result of move from parameter of 2 to the temporary parameter of 3 becomes 0.</p> <p>[Supplement]</p> <p>- The temporary parameter specifies the data items specified by the RETURNING or USING of the header of the procedure division</p> <p>- Moving to the temporary parameters is performed in the parameter passing specified with BY CONTENT. For details, refer to "NetCOBOL Language Reference."</p> <p>[Example of condition 1]</p> <p>- Calling program</p> <pre data-bbox="568 815 1430 1066"> : WORKING-STORAGE SECTION. 01 VAR PIC X(3). 01 OBJ OBJECT REFERENCE CCC. PROCEDURE DIVISION. MOVE "ABC" TO VAR. INVOKE CCC "NEW" RETURNING OBJ. INVOKE OBJ "MMM" USING BY CONTENT VAR. </pre> <p>- Called program</p> <pre data-bbox="568 1133 1430 1442"> CLASS-ID. CCC INHERITS FJBASE. : METHOD-ID. MMM. DATA DIVISION. WORKING-STORAGE SECTION. LINKAGE SECTION. 01 VAR PIC X JUSTIFIED. PROCEDURE DIVISION USING VAR. DISPLAY "VAR=" VAR. END METHOD MMM. </pre> <p>- Execution result</p> <pre data-bbox="568 1509 1430 1559"> VAR=A <- A correct result is "C". </pre> <p>[Example of condition 2]</p> <p>- Calling program</p> <pre data-bbox="568 1715 1430 1966"> : WORKING-STORAGE SECTION. 01 OBJ OBJECT REFERENCE CCC. 01 RET-VAL PIC 9. PROCEDURE DIVISION. INVOKE CCC "NEW" RETURNING OBJ. MOVE OBJ::"MMM" ("000") TO RET-VAL. END PROGRAM PPP. </pre> <p>- Called program</p>

NO.	V/L (*)	P number	Content of change
			<pre> CLASS-ID. CCC INHERITS FJBASE. : METHOD-ID. MMM. DATA DIVISION. WORKING-STORAGE SECTION. LINKAGE SECTION. 01 VAR PIC 9(3) BLANK WHEN ZERO. 01 RET-VAL PIC 9. PROCEDURE DIVISION USING VAR RETURNING RET-VAL. DISPLAY "VAR=" VAR. END METHOD MMM. </pre> <p>- Execution result</p> <pre> VAR=000 <- A correct result is " ". </pre>
3	V10.1.0 to V11.0.0	PH05861	<p>Under the following conditions, the following execution results are incorrect.</p> <ul style="list-style-type: none"> - When moving from reference modification of a zoned decimal item to numeric-edited items or floating-point items, the reference modification range of the sending side is shifted 1-digit to the left. <p>[Condition]</p> <ol style="list-style-type: none"> 1. There is a MOVE statement. (*1) <ul style="list-style-type: none"> - The sending side is a signed zoned decimal item - The receiving side is a numeric edited item or floating point item 2. And, in the sending side of 1, a SIGN IS TRAILING SEPARATE CHARACTER clause is being specified. 3. And, there is a reference modification of the sending side. 4. And, the length of reference modification of 3 is being specified with a numeric literal. <p>*1: Includes the implicit MOVE statement.</p> <p>Example:</p> <pre> WORKING-STORAGE SECTION. 01 SND PIC S9(13) SIGN TRAILING SEPARATE VALUE -0098765432100. 01 RCV PIC Z(10)9. PROCEDURE DIVISION. MOVE SND (3:11) TO RCV. *> Sending value is 98765432100 DISPLAY "RCV= " RCV. </pre> <p>Result:</p> <pre> RCV= 9876543210 </pre>
4	V10.1.0 to V11.0.0	PH05538	<p>Under the following [Condition 1], [Condition 2], or [Condition 3], the COBOL program execution result is incorrect or terminates abnormally (segmentation fault).</p> <p>[Condition 1]</p> <ol style="list-style-type: none"> 1. The data item declared to based-storage section is used by either of the following methods. <ul style="list-style-type: none"> - There is a subscript. - There is a reference modifier. The high-order-end-character-position of the reference modifier is a variable. 2. And, compiler option OPTIMIZE (*1) is effective

NO.	V/L (*)	P number	Content of change
			<p>*1: Default is OPTIMIZE.</p> <p>[Condition 2]</p> <ol style="list-style-type: none"> 1. In the based-storage section, the declared data items are specified in one of the following statements. <ul style="list-style-type: none"> - INSPECT statement - STRING statement (nucleus) - UNSTRING statement (nucleus) <p>[Condition 3]</p> <ol style="list-style-type: none"> 1. In the based-storage section, the data items specified the OCCURS clause are being declared. 2. And, the data items of 1 are being specified in the INITIALIZE statement.
5	V11.0.0	PH04570	<p>Under the following conditions, the following either [Phenomenon 1] or [Phenomenon 2] occur.</p> <p>[Phenomenon 1]</p> <p>The COBOL compiler terminates normally (*1) without giving an error message.</p> <div style="border: 1px solid black; padding: 2px;"> <p>JMN2038I-S Length of the literal in the VALUE clause must not exceed the length of the item. The extra characters at the right end of the literal are truncated</p> </div> <p>*1: In the created object program, the following literal values are set to the data item of the object program.</p> <ul style="list-style-type: none"> - The extra characters at the right end of the literal are truncated to match the item length <p>[Phenomenon 2]</p> <p>The COBOL compiler outputs the following error message to a correct syntax.</p> <div style="border: 1px solid black; padding: 2px;"> <p>JMN2106I-S The value of the literal following 'THROUGH' in the VALUE clause of the condition-name must be greater than the value of the literal preceding 'THROUGH'.</p> </div> <p>[Condition]</p> <ol style="list-style-type: none"> 1. There is a national item or national edited item in one of the following encodes: <ul style="list-style-type: none"> - UTF32 - UTF32LE - UTF32BE 2. And, the VALUE phrase is specified in either of the following. <ul style="list-style-type: none"> - The data item of 1 - The condition-name of which conditional variable is the data item of 1 3. And, in the VALUE phrase of 2, the national nonnumeric literal (*2) is specified to meet one of the following. <ul style="list-style-type: none"> - National nonnumeric literal is larger than the sizes specified by the PICTURE phrase - The value of the national nonnumeric literal following 'THROUGH' is greater than the value of the national nonnumeric literal preceding 'THROUGH' 4. And, national nonnumeric literal of 3 are from 41 to 80 characters. <p>*2: The concatenation expression of national nonnumeric literal is contained.</p>

NO.	V/L (*)	P number	Content of change
6	V11.0.0	PH04215	<p>Under the following conditions, the execution results are incorrect. In the execution of the INVOKE statement and the in-line method invocation, the parameter is cut or garbled.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. The runtime code set is Unicode, 2. And, the national item or the national language nonnumeric literal is specified for either of the following. <ul style="list-style-type: none"> - USING or RETURNING parameter of an INVOKE statement - Parameter of in-line method invocation 3. And, in the formal parameter of the method invoked by 2, the following is defined. <ul style="list-style-type: none"> - National item for which ANY LENGTH phrase is specified 4. And, either of the following conditions exist. <ol style="list-style-type: none"> a. National item is specified for 2. And, the encode mode of the parameter of 2 and the parameter of 3 are different. (*1) Or b. National language nonnumeric literal is specified for 2. And, the encode mode of national item of 3 is UTF32. <p>*1: In this situation, even though the syntax is wrong, the compile error is not output.</p>
7	V10.1.0	PG75097	<p>Under the following conditions, the COBOL application running under Red Hat Enterprise Linux (for Intel64) cannot be remotely debugged from the NetCOBOL Studio for Windows. "Error occurred in debugger or engine. (65535)" is displayed.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. The server is Red Hat Enterprise Linux (for Intel64) or Red Hat Enterprise Linux (for Itanium). 2. And, installed the following products in the server. <ul style="list-style-type: none"> - Alchemy NetCOBOL Enterprise Edition V10.1.0 (64bit) for Linux 3. And, gdb used on the server is gdb-7.0 (*1) or later. <p>*1: Red Hat Enterprise Linux 5.5 is installed or gdb-7.0 is installed alone.</p>
8	V10.1.0	PG78440	<p>Under the following conditions, the execution results are incorrect.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. The compiler option BINARY(BYTE) or BINARY(WORD, MLBOFF) is specified, along with 2. And, there is one of the following intrinsic functions: <p>[A]</p> <ul style="list-style-type: none"> - FUNCTION MAX - FUNCTION MIN - FUNCTION MEAN - FUNCTION MEDIAN - FUNCTION RANGE <p>[B]</p>

NO.	V/L (*)	P number	Content of change																		
			<ul style="list-style-type: none"> - FUNCTION ANNUITY - FUNCTION NUMVAL - FUNCTION NUMVAL-C - FUNCTION RANDOM <p>3. And, the arguments of the function in 2. above are fixed point of 9-digit or less.</p> <p>4. And, the number of the arguments in [A] above is 4 or more.</p>																		
9	V10.1.0	PG77383	<p>Under the following conditions, the execution results are incorrect.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. The compiler option OPTIMIZE is specified (*1). 2. And, there is a statement that sets packed decimal item to numeric edited data item. 3. And, the number of digits for integer part of packed decimal item and numeric edited data item are the same and neither have a decimal-part. 4. And, the numeric edited data item specifies only zero suppression for the edit (Only '9', 'Z', and '*' are used for PICTURE character-string). 5. And, before the statement in 2 (*2), there is a statement that sets data item (or intermediate result) to packed decimal item. 6. And, the relation between number of digits for the data item in 5 (or intermediate result) and number of digits for the packed decimal part in 2 is the following : <table border="1" data-bbox="587 1039 1430 1406" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Data item (or intermediate result)</th> <th style="text-align: center;">Packed decimal item</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">2</td><td style="text-align: center;">3</td></tr> <tr><td style="text-align: center;">4</td><td style="text-align: center;">5</td></tr> <tr><td style="text-align: center;">6</td><td style="text-align: center;">7</td></tr> <tr><td style="text-align: center;">8</td><td style="text-align: center;">9</td></tr> <tr><td style="text-align: center;">10</td><td style="text-align: center;">11</td></tr> <tr><td style="text-align: center;">12</td><td style="text-align: center;">13</td></tr> <tr><td style="text-align: center;">14</td><td style="text-align: center;">15</td></tr> <tr><td style="text-align: center;">16</td><td style="text-align: center;">17</td></tr> </tbody> </table> <ol style="list-style-type: none"> 7. And, the data item in 5 (or intermediate result) and the packed decimal item in 2 do not have the decimal-part. <p>*1: The default is NOOPTIMIZE.</p> <p>*2: MOVE statement, COMPUTE statement, and so on.</p>	Data item (or intermediate result)	Packed decimal item	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Data item (or intermediate result)	Packed decimal item																				
2	3																				
4	5																				
6	7																				
8	9																				
10	11																				
12	13																				
14	15																				
16	17																				
10	V10.1.0 to V10.4.0	PH02265	<p>Under the following conditions, a compilation error may not be generated.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. Concatenation expression is described in the external name of program, class or method. 2. And, one of the following is described at the beginning of the concatenation expression. <ul style="list-style-type: none"> - Character constant - National character constant 3. And, when one of the following is described in the concatenation expression. <ul style="list-style-type: none"> - Hexadecimal character constant 4. National hexadecimal character constant 																		

NO.	V/L (*)	P number	Content of change
11	V10.1.0 to V10.4.0	PG76651	<p>Under the following conditions, when a COBOL program is executed, a size comparison of national items varying in length (national language edited item, including the intrinsic function) was incorrect.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. Compiler option RCS(UCS2,LE) or RCS(UTF16,LE) is specified. 2. And, there is a size comparison of a National item and a National item or National language character constant. 3. And, at least one side is an item with the ANY LENGTH clause is specified or reference modification. 4. And, the length of the compared targets differs.

*: V/L is a scope where the bug exists.

2.2 NetCOBOL Runtime Environment

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux
- NetCOBOL Standard Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Standard Edition Runtime (64bit) for Linux
- NetCOBOL Base Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Base Edition Runtime (64bit) for Linux

2.2.1 Adding variable Information for runtime messages

Content

Added variable information to runtime messages JMP0009I-U and JMP0010I-U.

- V12.1 or earlier

```
JMP0009I-U INSUFFICIENT STORAGE AVAILABLE. '$1'
```

```
JMP0010I-U LIBRARY WORK AREA IS BROKEN.
```

- V12.2 or later

```
JMP0009I-U INSUFFICIENT STORAGE AVAILABLE. '$1' '$2'
```

\$2 is set to the desired library work area length.

```
JMP0010I-U LIBRARY WORK AREA IS BROKEN. BRKADR=0x$1
```

\$1 is set to the address of the broken library work area.

2.2.2 About the BOM of the UTF-8 file

Content

Operation differs when input the UTF-8 file with BOM.

- V11.0 or earlier

BOM is read as part of the data when it is included in the UTF-8 file.

When a valid keyword is described at the first line of the input file, but the file is read with BOM added at the beginning of the keyword, the keyword might be invalid.

- V11.0 or later

BOM is identified as UTF-8 identification code and it is skipped.

When a valid keyword is described at the first line of the input file, the keyword is considered as valid as the BOM in the beginning of the file is skipped.

Influence

When the input resource file is UTF-8 with BOM, the content described in the first line is valid after V11.0 however the content described in the first line is invalid before V11.0.

There is no change in the operation of the application when the first line is a comment line or null line. The input resource when executing it becoming an object is as follows.

- Runtime initialization file
- Entry information file
- Class information file
- Print information file
- Printer information file

Action

Please delete or make the first line a comment.

2.2.3 Process ID notified by the subroutine (COB_GET_PROCESSID)

Content

The process ID notified by the subroutine (COB_GET_PROCESSID) was changed.

- V11.0 or earlier

When an executable file was started from the shell script and service, etc., process group ID (process ID in the process that had started first) was notified.

Example: When an executable file is started from the shell script, process ID of the shell script is notified.

- V11.1 or later

When an executable file was started from the shell script and service, etc., process ID (of the process that calls this subroutine) is notified.

2.2.4 Interchangeable information regarding bug fixes

Here, it explains bug fixes corrected by NetCOBOL V10.1.0 or later version in which the operation of the NetCOBOL development environment changes in the following tables.

Table 2.2 Interchangeable information on bug fixes of NetCOBOL Runtime Environment

NO.	V/L (*)	P number	Content of change
1	V10.4.0 to V11.0.0	PH08017	Under the following conditions, the data cannot be read from the input file of the redirection specification by the execution of the ACCEPT statement. [Condition] 1. Compiler option RCS(SJIS) is specified.

NO.	V/L (*)	P number	Content of change
			<p>2. The ACCEPT statement of the system standard input is executed by the redirection specification.</p> <p>3. And, the line feed code is not included in the specified input file.</p>
2	V10.1.0	PG87520	<p>Under the following [Condition 1] or [Condition 2], the move result by internal bool item is incorrect.</p> <p>Note: The move result is different according to the state of the area allocated just behind the sending data item.</p> <p>[Condition 1]</p> <ol style="list-style-type: none"> 1. Move from internal boolean item to internal boolean item. 2. And, data start position (*1) of the sending data item is different from data start position of the receiving data item. 3. And, <ul style="list-style-type: none"> [a] + [b] > 32, or [c] + [d] > 32 a: Data start position (*1) of the sending data item b: The length of sending data item or the length of receiving data item, whichever is smaller. c: Data start position (*1) of the receiving data item d: The length of receiving data item 4. And, the receiving data item is subordinate to the group item. 5. And, data start position of the receiving data item is not one byte alignment of the group item in 4. 6. And, "Bit length of sending data item" < " Bit length from bit data starting location on the receiving side to the first byte boundary " 7. And, bit data of sender data item is outside the byte boundary or Byte boundary exist between the start position of the sender's data item of paragraphs 6 (*1) (bit length till the byte boundary of the first recipient). <p>*1: relative bit position in byte</p> <p>Example of Condition 1</p> <pre style="border: 1px solid black; padding: 10px;"> DATA DIVISION. WORKING-STORAGE SECTION. 01 DATA1. 02 DATA1-1 PIC 1(5) BIT. 02 DATA1-2 PIC 1(4) BIT. 02 DATA1-3 PIC 1(7) BIT. 01 DATA2. 02 DATA2-1 PIC 1(1) BIT. 02 DATA2-2 PIC 1(32) BIT. 01 ANS-DATA PIC 1(32) BIT VALUE B"1111". PROCEDURE DIVISION. MOVE X"FFFF" TO DATA1. MOVE DATA1-2 TO DATA2-2. IF DATA2-2 = ANS-DATA THEN DISPLAY "OK" ELSE DISPLAY "NG" *> B"111111110-00000000" END-IF. </pre> <p>[Condition 2]</p> <ol style="list-style-type: none"> 1. Move from internal boolean item to internal boolean item.

NO.	V/L (*)	P number	Content of change
			<p>2. And, the sending data item or the receiving data item is referred by the subscript.</p> <p>3. And, "The length of receiving data item " > 1</p> <p>4. And, it is either the following.</p> <ul style="list-style-type: none"> - "The length of sending data item" > 1 - The receiving data item is referred by the subscript. - " The length of receiving data item " > 25 <p>5. And, there is not the data starting location of the receiving data item on byte boundary.</p> <p>6. And, "Bit length of sending data item" < " Bit length from bit data start position of first byte of the receiving data item</p> <p>7. And, the bit data of the sending data item overlaps the byte boundary, or there is byte boundary between from start position of the sending data item to "Bit length from bit data start position of the receiving side to the first byte boundary" in 6.</p> <p>Example of Condition 2</p> <pre style="border: 1px solid black; padding: 5px;"> DATA DIVISION. WORKING-STORAGE SECTION. 01 DATA1. 02 DATA1-1 PIC 1(5) BIT. 02 DATA1-2 PIC 1(4) BIT. 02 DATA1-3 PIC 1(7) BIT. 01 DATA2. 02 DATA2-1 PIC 1(10) BIT OCCURS 5 TIMES. 01 ANS-DATA PIC 1(10) BIT VALUE B"1111". 01 CNT PIC 9 VALUE 2. PROCEDURE DIVISION. MOVE X"FFFF" TO DATA1. MOVE DATA1-2 TO DATA2-1(CNT). IF DATA2-1(CNT) = ANS-DATA THEN DISPLAY "OK" ELSE DISPLAY "NG" *> B"111111110-00000000" END-IF. </pre>
3	V10.1.0 to V10.4.0	PG76651	<p>When all of the following conditions are met while executing a COBOL program, a size comparison of national items varying in length (national edited item, including the intrinsic function) was incorrect.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. Compiler option RCS(UCS2,LE) or RCS(UTF16,LE) is specified. 2. And, there is a size comparison of a national item and a national item or national nonnumeric literal. 3. And, at least one side is an item with the ANY LENGTH clause is specified or reference modification. 4. And, the length of the compared targets differs.
4	V10.1.0	PG75097	<p>Under the following conditions, the COBOL application running under Red Hat Enterprise Linux (for Intel64) cannot be remotely debugged from the NetCOBOL Studio for Windows. "Error occurred in debugger or engine. (65535)" is displayed.</p> <ol style="list-style-type: none"> 1. The server is Red Hat Enterprise Linux (for Intel64) or Red Hat Enterprise Linux (for Itanium). 2. And, installed the following products in the server. <ul style="list-style-type: none"> - Alchemy NetCOBOL Enterprise Edition V10.1.0 (64bit) for Linux

NO.	V/L (*)	P number	Content of change
			<p>3. And, gdb used on the server is gdb-7.0 (*1) or later.</p> <p>*1: Red Hat Enterprise Linux 5.5 is installed or gdb-7.0 is installed alone.</p>
5	V10.1.0	PG72597	<p>Under the following conditions, the WRITE AFTER ADVANCING PAGE is not valid at execution time.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. The line sequential file is used. 2. And, the line sequential file is linked with the external file handler. 3. And, after an OPEN statement is executed for file in 2, the WRITE statement of the AFTER ADVANCING PAGE phrase is executed.
6	V10.1.0	PG73346	<p>Under the following conditions, at execution, unnecessary zero string is set to four subordinate position digits of the hexadecimal character of eight digits buried under execution time message JMP0320I-I/JMP0320I-U.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. File operation using COBOL file system (except BSAM specification) is done. 2. And, either of the following I/O statements is executed. <ul style="list-style-type: none"> - READ statement - WRITE statement - REWRITE statement - DELETE statement - START statement 3. And, the execution of I/O statement failed.

*: V/L is a scope where the bug exists.

2.3 J Adapter Class Generator

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux
- NetCOBOL Standard Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Standard Edition Runtime (64bit) for Linux

There is no information on interchangeability.

2.4 PowerFORM

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux
- NetCOBOL Standard Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Standard Edition Runtime (64bit) for Linux

2.4.1 Trace log

Content

The permission of files and directories related to the trace log after the installation changes.

- V12.0.0 or earlier

The write permission for all users is set.

- V12.2.0 or later

The write permission is set only for the root user.

It can be selected whether to set the write permission for all users when installing it at interactive installation.

Action

When you output the trace log, set the write permission for the execution user of the application program to the files and directories related to the trace log. Set this using the operating system command.



See

Refer to "Trace Log" in "PowerFORM Runtime Reference."

2.5 Fujitsu mainframe format floating-point arithmetic emulator

Information described here applies to the following products.

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux

There is no information on interchangeability.

2.6 PowerBSORT

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux

2.6.1 Interchangeable information regarding bug fixes

Here, it explains bug fixes corrected by PowerBSORT V7 and later version in which the operation of the PowerBSORT changes in the following tables.

Table 2.3 Interchangeable information on bug fixes of PowerBSORT

NO.	V/L (*)	P number	Content of change
1	V6.0.0 to V7.0.0	PH05442	Under the following [Condition 1] or [Condition 2], PowerBSORT cannot correctly check whether the reconstruction field and the selection field exist in the record. As a result of an error in usage or implementation, the output may produce unpredictable or abnormal results. [Condition 1] 1. The bsortex command is used. 2. And, the record format is one of the following.

NO.	V/L (*)	P number	Content of change
			<ul style="list-style-type: none"> - Binary file variable-length record form (-record recform=var), or - Text file fixed field specification (-record recform=txtfix) <p>3. And, two output file information options (-output) or more are specified.</p> <p>4. And, the following options are specified by two output file information options (-output) or more.</p> <ul style="list-style-type: none"> - Record reconstruction option (-output reconst=...) - Record selection option (-output include=.../omit=.../case=...) <p>5. And, the field in the record is specified for a reconstruction field for the record reconstruction option (form of "pos.len" or "pos.END").</p> <p>6. And, the maximum position of the reconstruction field specified by each output file information option (-output) is different. or, The maximum position of the selection field specified by each output file information option (-output) is different.</p> <p>[Condition 2]</p> <p>1. The bsortex command is used.</p> <p>2. And, the record format is one of the following.</p> <ul style="list-style-type: none"> - Binary file variable-length record form (-record recform=var), or - Text file fixed field specification (-record recform=txtfix) <p>3. And, the copy function (-copy option) is used.</p> <p>4. And, the input file information option (-input) does not specify any of the following functions:</p> <ul style="list-style-type: none"> - The record reconstruction function (reconst operand) of the input file - The record selection function (include/omit operand) of the input file <p>5. And, the output file information option (-output) specifies the following functions.</p> <ul style="list-style-type: none"> - The record selection function (include/omit/case operand) of the output file
2	V6.0.0	PG76539	<p>Under the following conditions, PowerBSORT may cause result error or abnormal termination.</p> <p>[Condition]</p> <p>1. The bsortex command is used.</p> <p>2. And, the text file CSV format or text file TSV format is used.</p> <p>3. And, the record reconstruction option for the output files is used.</p>
3	V6.0.0	PG76059	<p>Under the following conditions, PowerBSORT may cause result error, infinite loop or abnormal termination.</p> <p>[Condition]</p> <p>1. The bsort command, the bsortex command or the BSORT function is used.</p> <p>2. And, sort function is used.</p> <p>3. And, the text file CSV format or text file TSV format is used.</p> <p>4. And, the record summation option or the record selection option for the output files is specified.</p> <p>5. And, the summation field or selection field is enclosed with a double quotation.</p>

*: V/L is a scope where the bug exists.

Chapter 3 Program Fix List

In this software, the trouble that occurs by the version and level before is corrected.

This document explains the content of the correction corrected by this software of this version level.

3.1 NetCOBOL Development Environment

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Standard Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Base Edition Developer and Runtime (64bit) for Linux

Table 3.1 Program fix list of NetCOBOL Development Environment

NO.	V/L (*)	P number	Content of change
1	V10.1.0 to V12.0.0	PH13959	<p>Under the following [Condition 1] or [Condition 2], during compilation of the COBOL program, the COBOL compiler may loop endlessly. (*1)</p> <p>*1: If the infinite loop does not occur, the compilation result is correct.</p> <p>[Condition 1]</p> <ol style="list-style-type: none"> 1. The hierarchy (*2) of the nested IF statement above is more than 180 (*3). 2. And, the COBOL statements are described in the IF statements of hierarchy 180 or later. <p>[Condition 2]</p> <ol style="list-style-type: none"> 1. There are more than 274 in total of the out-of-line PERFORM statement, section and paragraph. (*3) 2. And, the COBOL statements are described in the section or paragraph of 274th or later in 1. <p>*2: Example of the nested IF statement. In example, the nested hierarchy is 2.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre> IF -----+ IF --+ hierarchy2 <COBOL statement> hierarchy1 END-IF --+ END-IF -----+ </pre> </div> <p>*3: Even if it satisfies all of the conditions, this event might not occur according to the state of the memory.</p>
2	V10.1.0 to V12.0.0	PH14815	<p>Under the following conditions, when a COBOL program is executed, it might not behave correctly.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. Compiler option INITVALUE is specified, and a value other than 00 is specified as the value of INITVALUE.

NO.	V/L (*)	P number	Content of change
			<p>2. And, a data item is defined without an initial value in the working-storage section of the factory data or object data.</p> <p>3. And, reference without setting a value in the data item of 2.</p>
3	V11.1.0 to V12.0.0	PH15447	<p>Under the following conditions, during the compilation of a COBOL program, the COBOL compiler terminates abnormally. (*1)</p> <p>*1: The failure depends on the state of memory at compile time. Therefore, it is rare for an abnormal termination to occur even if the conditions are met. If it does not terminate abnormally, the correct object program is created.</p> <p>[Condition]</p> <p>Compiler option PLT is enabled. (*2)</p> <p>*2: Default is PLT.</p>
4	V10.1.0 to V12.0.0	PH15858	<p>Under the following conditions, during the compilation of a COBOL program, one of the following errors is output.</p> <div data-bbox="571 768 1418 875" style="border: 1px solid black; padding: 5px;"> <p>JMN1123I-S An invalid word '@1@' was found. The invalid word and any following code is ignored until the next valid paragraph, section or division.</p> </div> <div data-bbox="571 898 1418 965" style="border: 1px solid black; padding: 5px;"> <p>JMN2500I-S The compiler has encountered a word '@1@' where a statement is expected.</p> </div> <p>@1@ : The statement name of [Condition] 1. is set</p> <p>[Condition]</p> <p>1. One of the following statements (*1) is described:</p> <ul style="list-style-type: none"> - EJECT - SKIP1 - SKIP2 - SKIP3 - TITLE <p>2. And, one of the following statements is described in compiler option RSV.</p> <ul style="list-style-type: none"> - V30 - V40 - V61 - V70 - V81 - V90 - V91 - V1020 - V1040 - V1050 - V1100 <p>*1: These are compiler directing statements of OSIV compatible. If they are specified, they are considered as comments.</p>

NO.	V/L (*)	P number	Content of change
5	V10.1.0 to V12.0.0	PH17172	<p>Under the following conditions, remote build by NetCOBOL remote development fails with the reason that it has no permission on a file, though the account used in the remote development session has permission on the file.</p> <p>The actual error message differs according to the way in which the file is referenced in the build.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. You start NetCOBOL Remote Development Service on a 64-bit version of Linux 2. And, you perform remote development targeting the NetCOBOL Remote Development Service from NetCOBOL Studio on a Windows system. 3. And, the Linux account used by NetCOBOL remote development has a supplementary group. 4. And, the permission of a file referenced in remote build by NetCOBOL remote development meets the following conditions: <ol style="list-style-type: none"> a. The account mentioned in 3. does not have user permission of the file. b. The supplementary group of the account mentioned in 3. has group permission of the file. c. The file does not permit access by other users. 5. And, you perform the following operations in NetCOBOL Studio on the Windows system targeting the NetCOBOL Remote Development Service on the Linux system using the account mentioned in 3. <p>Click one of the following sub menu of Project > Remote Development menu:</p> <ul style="list-style-type: none"> - Build - Rebuild
6	V10.1.0 to V12.0.0	PH17173	<p>Under the following conditions, NetCOBOL Remote Development Service does not respond for a while when you connect to it.</p> <p>Response time differs according to the state of the server.</p> <p>Once it responds, it works normally after that.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. You start NetCOBOL Remote Development Service on a 64-bit version of Linux. 2. And, it connects to the NetCOBOL Remote Development Service (*1) in 1. 3. And, it is the first time connection after the NetCOBOL Remote Development Service starts. 4. And, the Linux entropy pool does not have enough entropy (64 bytes or more). <p>You can check the size of entropy [pool] by executing the following command on the Linux system in which the NetCOBOL Remote Development Service runs.</p> <pre style="border: 1px solid black; padding: 2px;">cat /proc/sys/kernel/random/entropy_avail</pre> <p>If the Linux system in which the NetCOBOL Remote Development Service runs is a virtual environment such as a VM, it may increase the chance of this problem occurring.</p> <p>*1: Examples of connecting NetCOBOL Remote Development Service are as follows.</p> <p>Perform one of the following operations in NetCOBOL Studio on a Windows system targeting the NetCOBOL Remote Development Service:</p>

NO.	V/L (*)	P number	Content of change
			<ul style="list-style-type: none"> - Clicking Connection test button in Modify Server Information dialog box. - Clicking one of the following sub menu of Project > Remote Development menu: <ul style="list-style-type: none"> - Build - Rebuild - Makefile Creation

*: V/L is a scope where the bug exists.

3.2 NetCOBOL Runtime Environment

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux
- NetCOBOL Standard Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Standard Edition Runtime (64bit) for Linux
- NetCOBOL Base Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Base Edition Runtime (64bit) for Linux

There is no information on the program correction.

3.3 J Adapter Class Generator

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux
- NetCOBOL Standard Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Standard Edition Runtime (64bit) for Linux

There is no information on the program correction.

3.4 PowerFORM

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux
- NetCOBOL Standard Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Standard Edition Runtime (64bit) for Linux

Table 3.2 Program fix list of PowerFORM

NO.	V/L (*)	P number	Content of change
1	V12.0.0	PH14918	Under the following [Condition 1] or [Condition 2], the Japanese era name and the year of the Japanese calendar are not output correctly.

NO.	V/L (*)	P number	Content of change
			<p>- In the case of [Condition 1], before the start date, era name is changed and the Japanese calendar year (ZZ specification) is 00.</p> <p>- In the case of [Condition 2], the era name is not changed to the era specified by the GENGO keyword. It remains as the past era.</p> <p>[Condition 1]</p> <ol style="list-style-type: none"> 1. January 1st - January 6th is specified as era name start date by the GENGO keyword of the printer information file. 2. And, the previous year date and within six days before from era name start date is output to the numeric item or the date item. <p>[Condition 2]</p> <ol style="list-style-type: none"> 1. December 27th - December 31st is specified as era name start date by the GENGO keyword of the printer information file. 2. And, the following year date and within five days after from era name start date is output to the numeric item or the date item.
2	V11.0.0 to V12.0.0	PH15160	<p>Under the following condition, error might occur.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. Block text field, block UCS2 field, or a block mixed text field is set to the form. 2. And, the widths are smaller than the width of the font size and the width of the font pitch. 3. And, one of the following is specified: <ul style="list-style-type: none"> - Forbidden at start-of-line - Forbidden at end-of-line - Force punctuation at line-ends
3	V12.0.0	PH16484	<p>Under the following [Condition 1] or [Condition 2], the Japanese era name of two kanji character are garbled or not output.</p> <p>[Condition 1]</p> <ol style="list-style-type: none"> 1. The character-code of the user program is Shift JIS. 2. And, the character-code of the printer information file is Shift JIS. 3. And, GGGG is specified in item (*1) of the date. 4. And, output a date after the date specified as era name start date by the GENGO keyword of the printer information file. <p>[Condition 2]</p> <ol style="list-style-type: none"> 1. The character-code of the user program is Shift JIS. 2. And, the character-code of the printer information file is UTF-8. 3. And, GGGG is specified in item (*1) of the date. 4. And, output a date after the date specified as era name start date by the GENGO keyword of the printer information file. 5. And, print to the PostScript level 2 printer or output to a PDF file. <p>*1: date item, or numeric item that selected date</p>

*: V/L is a scope where the bug exists.

3.5 Fujitsu mainframe format floating-point arithmetic emulator

Information described here applies to the following products.

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux

There is no information on the program correction.

3.6 PowerBSORT

Information described here is applied to the following products:

- NetCOBOL Enterprise Edition Developer and Runtime (64bit) for Linux
- NetCOBOL Enterprise Edition Runtime (64bit) for Linux

Table 3.3 Program fix list of PowerBSORT

NO.	V/L (*)	P number	Content of change
1	V6.0.0 to V8.0.0	PH15958	<p>Under the following conditions, the following error occurs in the BSORT function and PowerBSORT fails to execute.</p> <ul style="list-style-type: none"> - Error detail code (*1): 212(BSERR_TEMPSPACE) <p>If you specify that a message is to be output (*2), "Not enough temporary file space." error message is output.</p> <p>*1: errdetail member of the BSRTREC structure</p> <p>*2: One of the following is specified:</p> <ul style="list-style-type: none"> - msglevel and optionfunc member of the BSRTPRIM structure - msglevel of the BSRTPRIM structure and msgfile_addr member of BSRTFILE structure <p>[Condition]</p> <ol style="list-style-type: none"> 1. You are using PowerBSORT from a C language program using the BSORT function. 2. And, you specify a sort function (BS_SORT) in the function member of the BSRTPRIM structure. 3. And, you specify the address of a BSFILE structure that specifies two or more temporary file path names in the tmpfile_tbl member of the BSRTFILE structure. 4. And, one temporary file runs out of space. There is free space in another temporary file. (*3) <p>*3: The same behavior occurs when all temporary files run out of space, but this is normal behavior.</p>
2	V6.0.0 to V8.0.0	PH16294	<p>Under the following conditions, when running PowerBSORT, two records with identical key field values may be output.</p> <p>[Condition]</p> <ol style="list-style-type: none"> 1. Use the sort or merge function. 2. And, specify the text file fixed fields.

NO.	V/L (*)	P number	Content of change
			<p>3. And, use the suppression option. (*1) (*2)</p> <p>4. And, use the record reconstruction option. (*3) (*4)</p> <p>5. And, by the record reconstruction function, the record length without a line break becomes the following length.</p> <p style="padding-left: 40px;">- For 64 bit products: not a multiple of 8</p> <p>6. And, do not specify key fields. (*5)</p> <p>*1: This function deletes 1 record is left and others when the values of the specified key fields are equal.</p> <p>*2: In the bsortex command, unless the first or last operand is specified in the record summation option (-summary).</p> <p>*3: Unless you specify from the position of the input record specification to the end of the reconstruction field (pos.END).</p> <p>*4: In the bsortex command, the input file information option (-input) specifies the record reconstruction function (reconst operand).</p> <p>*5: If you omit key fields, the entire record (In this case, records that have been reorganized by the record reconstruction function) is considered a key field.</p>

*: V/L is a scope where the bug exists.

Chapter 4 Notes to consider when a Japanese native application is converted to run globally

This chapter describes what is involved in taking a Japanese native application global.

4.1 Guideline

The program resources and run time code-set are made by Unicode.



See

.....
For details, refer to "Unicode" in "NetCOBOL User's Guide."
.....

4.2 Languages

Language used in the messages for compiler, runtime, tools etc., can be selected in accordance with the current locale setting.

Setting of the current locale is valid for the value of the first environment variable detected in the following order.

1. LC_ALL
2. LC_MESSAGES
3. LANG

Messages for the following Japanese locales are provided with this product.

- ja_JP.UTF-8

Messages are generated in English if the specified locale is not supported.

4.3 Feature difference with Japanese version

In NetCOBOL, there are a Japanese version and a Global version. This product is a Global version.

This section explains the feature differences between a Japanese version and a Global version.

4.3.1 Related products

The following NetCOBOL family products are not supported.

- FORM
- FORM Overlay Option
- MeFt/Web
- SIMPLIA

The following Fujitsu products are not supported.

- Interstage Charset Manager
- Interstage List Works
- Interstage Business Application Server
- Interstage JOB Workload Server
- Interstage Big Data Parallel Processing Server
- PrintWalker/LXE

- PrintWalker/LXE-EX
- INTARFRM

Note

For the following products, the name is different with the Japanese version.

Global version	Japanese version
PowerFORM RTS	MeFt
PowerBSORT	PowerSORT

4.3.2 Specifications

The following specifications are different with the Japanese version.

4.3.2.1 Currency symbol

In this compiler, \$ (x'24') is used as currency symbol.

When any other character is used, the following method is used.

- Specify with the compiler option CURRENCY.

See

Refer to "CURRENCY (currency symbol handling)" in "NetCOBOL User's Guide."

- Specify in the source program by using CURRENCY SIGN clause.

See

Refer to "CURRENCY SIGN Clause" in "NetCOBOL Language Reference."

Note

- Character composed of multiple bytes cannot be used as currency symbol. Regarding characters that can be used as currency symbol, refer to "CURRENCY SIGN Clause" in "NetCOBOL Language Reference."
- If data is passed between compilation units having different currency symbol, the result might differ from the intended/expected result. Please specify compiler option CURRENCY or CURRENCY SIGN clause and use same currency symbol character.

4.3.2.2 Handling of National item spaces

In this compiler, National item space (Trailing Blank and Figurative Constant SPACE) of Unicode encoding is handled as alphabetic spaces (U+0020).

Specify compiler option NSP, if national spaces are to be changed.

See

For details, refer to "NSP (handling of spaces related to national data item)" in "NetCOBOL User's Guide."

Note

If data is passed between compilation units with different National item spaces, results might not be as expected. Specify the compiler option NSP, and use the same national item space.

4.3.2.3 Printing

It is recommend that PowerFORM Runtime use PDF file output by using the form descriptor created with PowerFORM when developing both a Japanese version and a global version.

The difference between a Japanese version and a global version is shown as follows.

Please consult "[4.3.1 Related products](#)" regarding supported situations for the related products.

Data stream type

Data stream type UVPI is not supported in a global version however it is supported in a Japanese version.

See

Refer to "[4.3.1 Related products](#)".

Paper size

The default value of the size of the form is A4 in a Japanese version. LETTER is used in a global version.

When the size of the form is changed, it is specified on the print information file or I control record.

Font for print

The default value of the print font is Minchou/Gothic in a Japanese version. COURIER is used in a global version.

When the print font is changed, the font table is used.

Characters that can be written

It is a range of Unicode and SJIS in a Japanese version. ASCII is used in a global version.

Form descriptor

It corresponds to SMD and PMD in a Japanese version. Only PMD is used in a global version.

See

Refer to "[4.3.1 Related products](#)".

4.3.3 PowerFORM RTS

When the Form is output in a Global version, there are the following notes.

- Only ASCII character can be used.
- When the paper size is omitted, it is printed on LETTER size.
- Only the print to the PostScript printer and the PDF output are possible.