IBM

Program Directory for

Rocket Git for z/OS

01.01.01

Program Number 5755-AC5, 5737-K80, 5900-A8N

FMID HAL2111

for Use with
z/OS 02.03.00 or later

Document Date: June 2021

GI13-4387-05

> **Note**
>
> Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 27.

Contents

Figures

1.0 Introduction

This program directory is intended for system programmers who are responsible for program installation and maintenance. It contains information about the material and procedures associated with the installation of Rocket Git for z/OS. This publication refers to Rocket Git for z/OS as Git.

Git is available as a component of multiple products. Depending on which product you acquired, different functions of Git will be enabled or disabled.

- IBM Developer for z/OS Enterprise Edition, program number 5755-AC5 (Shopz orderable)

- IBM Dependency Based Build, program number 5737-K80 (web download)

- IBM Wazi for Red Hat CodeReady Workspaces, program number 5900-A8N (web download)

The Program Directory contains the following sections:

- 2.0, "Program Materials" on page 3 identifies the basic program materials and documentation for Git.

- 3.0, "Program Support" on page 5 describes the IBM support available for Git.

- 4.0, "Program and Service Level Information" on page 7 lists the APARs (program level) and PTFs (service level) that have been incorporated into Git.

- 5.0, "Installation Requirements and Considerations" on page 8 identifies the resources and considerations that are required for installing and using Git.

- 6.0, "Installation Instructions" on page 15 provides detailed installation instructions for Git. It also describes the procedures for activating the functions of Git, or refers to appropriate publications.

The rest of this section only applies when Git is ordered via Shopz. It does not apply when you downloaded it from the web.
Select this link to go to the next section: 1.1, "Git Description" on page 2

Before installing Git, read the *CBPDO Memo To Users* and the *CBPDO Memo To Users Extension* that are supplied with this program in softcopy format and this program directory; after which, keep the documents for your reference.

Git is supplied in a Custom-Built Product Delivery Offering (CBPDO, 5751-CS3). The program directory that is provided in softcopy format on the CBPDO is identical to the hardcopy format if one was included with your order. All service and HOLDDATA for Git are included on the CBPDO.

Do not use this program directory if you install Git with a SystemPac or ServerPac. When you use one of those offerings, use the jobs and documentation supplied with the offering. The offering will point you to specific sections of this program directory as needed.

1.1 Git Description

Rocket Git for z/OS is a version control system (VCS) for tracking changes in computer files and coordinating work on those files among multiple people.

It is primarily used for software development, but it can be used to keep track of changes in any files.

The z/OS port of Git supports automatic tagging and conversion of text files.

Please review the IBM Dependency Based Build documentation for more details on Rocket Git for z/OS at: https://www.ibm.com/docs/en/dbb/1.1.0?topic=dbb-setting-up-git-uss

1.2 Git FMIDs

Git consists of the following FMIDs:

HAL2111

2.0 Program Materials

An IBM program is identified by a program number.

Git is available as a component of multiple products. Depending on which product you acquired, different functions of Git will be enabled or disabled.

- IBM Developer for z/OS Enterprise Edition, program number 5755-AC5 (Shopz orderable)
- IBM Dependency Based Build, program number 5737-K80 (web download)
- IBM Wazi for Red Hat CodeReady Workspaces, program number 5900-A8N (web download)

Basic Machine-Readable Materials are materials that are supplied under the base license and are required for the use of the product.

The program announcement material describes the features supported by Git. Ask your IBM representative for this information if you have not already received a copy.

2.1 Basic Machine-Readable Material

The distribution medium for this program is physical media or downloadable files. This program is in SMP/E RELFILE format and is installed by using SMP/E. See 6.0, "Installation Instructions" on page 15 for more information about how to install the program.

The rest of this section only applies when Git is ordered via Shopz. It does not apply when you downloaded it from the web.

You can find information about the physical media for the basic machine-readable materials for Git in the *CBPDO Memo To Users Extension*.

Figure 1 describes the program file content for Git. You can refer to the *CBPDO Memo To Users Extension* to see where the files reside on the image.

Notes:

1. The data set attributes in this table must be used in the JCL of jobs that read the data sets. However, because the data sets are in IEBCOPY unloaded format, their actual attributes might be different.

2. If any RELFILEs are identified as PDSEs, ensure that SMPTLIB data sets are allocated as PDSEs.

Figure 1. Program File Content				
Name	**ORG**	**RECFM**	**LRECL**	**BLK SIZE**
SMPMCS	SEQ	FB	80	8800
IBM.HAL2111.F1	PDS	FB	80	8800
IBM.HAL2111.F2	PDS	VB	255	27998

2.2 Program Publications

The following sections identify the basic publications for Git.

2.2.1 Optional Program Publications

No optional publications are provided for Git.

2.3 Program Source Materials

No program source materials or viewable program listings are provided for Git.

2.4 Publications Useful During Installation

You might want to use the publications listed in Figure 2 during the installation of Git.

Figure 2. Publications Useful During Installation	
Publication Title	**Form Number**
IBM SMP/E for z/OS User's Guide	SA23-2277
IBM SMP/E for z/OS Commands	SA23-2275
IBM SMP/E for z/OS Reference	SA23-2276
IBM SMP/E for z/OS Messages, Codes, and Diagnosis	GA32-0883

Note: IBM Publications Center https://www.ibm.com/resources/publications
IBM Knowledge Center https://www.ibm.com/support/knowledgecenter

3.0 Program Support

This section describes the IBM support available for Git. The service number for Git is 0500066.

3.1 Program Services

Contact your IBM representative for specific information about available program services.

3.2 Preventive Service Planning

Before you install Git, make sure that you have reviewed the current Preventive Service Planning (PSP) information. Review the PSP Bucket for General Information, Installation Documentation, and the Cross Product Dependencies sections. For the Recommended Service section, instead of reviewing the PSP Bucket, it is recommended you use the IBM.PRODUCTINSTALL-REQUIREDSERVICE fix category in SMP/E to ensure you have all the recommended service installed. Use the **FIXCAT(IBM.PRODUCTINSTALL-REQUIREDSERVICE)** operand on the **APPLY CHECK** command. See 6.1.14, "Perform SMP/E APPLY" on page 23 for a sample APPLY command

If you obtained Git as part of a CBPDO, HOLDDATA is included.

If the CBPDO for Git is older than two weeks by the time you install the product materials, you can obtain the latest PSP Bucket information by going to the following website:

http://www14.software.ibm.com/webapp/set2/psearch/ search?domain=psp

You can also use S/390 SoftwareXcel or contact the IBM Support Center to obtain the latest PSP Bucket information.

For program support, access the Software Support Website at http://www.ibm.com/software/support/.

PSP Buckets are identified by UPGRADEs, which specify product levels; and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for Git are included in Figure 3.

Figure 3. PSP Upgrade and Subset ID		
UPGRADE	**SUBSET**	**Description**
GIT111	HAL2111	Rocket Git for z/OS

3.3 Statement of Support Procedures

Report any problems which you feel might be an error in the product materials to your IBM Support Center. You may be asked to gather and submit additional diagnostics to assist the IBM Support Center in their analysis.

Figure 4 on page 6 identifies the component IDs (COMPID) for Git.

Figure 4. Component IDs			
FMID	**COMPID**	**Component Name**	**RETAIN Release**
HAL2111	5737I2201	Rocket Git for z/OS	111

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of Git. The program level refers to the APAR fixes that have been incorporated into the program. The service level refers to the PTFs that have been incorporated into the program.

4.1 Program Level Information

All resolved APARs of previous releases of Git have been incorporated into Git.

4.2 Service Level Information

To receive the latest HOLDDATA, add the **FIXCAT(IBM.PRODUCTINSTALL-REQUIREDSERVICE)** operand on your **APPLY CHECK** command. This will allow you to review the recommended and critical service that should be installed with your FMIDs.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating Git. The following terminology is used:

- *Driving system*: the system on which SMP/E is executed to install the program.

  The program might have specific operating system or product level requirements for using processes, such as binder or assembly utilities during the installation.

- *Target system*: the system on which the program is configured and run.

  The program might have specific product level requirements, such as needing access to the library of another product for link-edits. These requirements, either mandatory or optional, might directly affect the element during the installation or in its basic or enhanced operation.

In many cases, you can use a system as both a driving system and a target system. However, you can make a separate IPL-able clone of the running system to use as a target system. The clone must include copies of all system libraries that SMP/E updates, copies of the SMP/E CSI data sets that describe the system libraries, and your PARMLIB and PROCLIB.

Use separate driving and target systems in the following situations:

- When you install a new level of a product that is already installed, the new level of the product will replace the old one. By installing the new level onto a separate target system, you can test the new level and keep the old one in production at the same time.

- When you install a product that shares libraries or load modules with other products, the installation can disrupt the other products. By installing the product onto a separate target system, you can assess these impacts without disrupting your production system.

5.1 Driving System Requirements

This section describes the environment of the driving system required to install Git.

5.1.1 Machine Requirements

The driving system can run in any hardware environment that supports the required software.

5.1.2 Programming Requirements

Figure 5. Driving System Software Requirements				
Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	V02.03.00 or higher	N/A	No

Note: SMP/E is a requirement for Installation and is an element of z/OS.

Note: Installation might require migration to new z/OS releases to be service supported. See https://www.ibm.com/support/lifecycle/

Git is installed into a file system, either HFS or zFS. Before installing Git, you must ensure that the target system file system data sets are available for processing on the driving system. OMVS must be active on the driving system and the target system file data sets must be mounted on the driving system.

If you plan to install Git in a zFS file system, this requires that zFS be active on the driving system. Information on activating and using zFS can be found in z/OS Distributed File Service zSeries File System Administration, SC24-5989.

5.2 Target System Requirements

This section describes the environment of the target system required to install and use Git.

Git installs in the z/OS (Z038) SREL.

5.2.1 Machine Requirements

The target system can run in any hardware environment that supports the required software.

5.2.2 Programming Requirements

5.2.2.1 Installation Requisites: Installation requisites identify products that are required and *must* be present on the system or products that are not required but *should* be present on the system for the successful installation of this product.

Mandatory installation requisites identify products that are required on the system for the successful installation of this product. These products are specified as PREs or REQs.

Figure 6. Target System Mandatory Installation Requisites				
Program Number	**Product Name**	**Minimum VRM**	**Minimum Service Level will satisfy these APARs**	**Included in the shipped product?**
5650-ZOS	z/OS	02.03.00 or higher	N/A	No

Note: Installation might require migration to new releases to obtain support. See https://www.ibm.com/support/lifecycle/

Conditional installation requisites identify products that are *not* required for successful installation of this product but can resolve such things as certain warning messages at installation time. These products are specified as IF REQs.

Git has no conditional installation requisites.

5.2.2.2 Operational Requisites:

Operational requisites are products that are required and *must* be present on the system or products that are not required but *should* be present on the system for this product to operate all or part of its functions.

Mandatory operational requisites identify products that are required for this product to operate its basic functions.

Git has no mandatory operational requisites.

Note: Installation might require migration to new releases to obtain support. See https://www.ibm.com/support/lifecycle/

Conditional operational requisites identify products that are *not* required for this product to operate its basic functions but are required at run time for this product to operate specific functions. These products are specified as IF REQs.

Git has no conditional operational requisites.

5.2.2.3 Toleration/Coexistence Requisites:

Toleration/coexistence requisites identify products that must be present on sharing systems. These systems can be other systems in a multisystem environment (not necessarily sysplex), a shared DASD environment (such as test and production), or systems that reuse the same DASD environment at different time intervals.

Git has no toleration/coexistence requisites.

5.2.2.4 Incompatibility (Negative) Requisites: Negative requisites identify products that must *not* be installed on the same system as this product.

Git has no negative requisites.

5.2.3 DASD Storage Requirements

Git libraries can reside on all supported DASD types.

Figure 7 lists the total space that is required for each type of library.

Library Type	Total Space Required in 3390 Trks	Description
Figure 7. Total DASD Space Required by Git		
Target	5 Tracks	
Distribution	13500 Tracks	
File System(s)	27000 Tracks	/usr/lpp/Rocket/rsusr/ported
Web Download	25322 Tracks	This row only applies when Git is downloaded from the web. It does not apply when you ordered it via Shopz. These are temporary data sets, which can be removed after the SMP/E install.

Notes:

1. For non-RECFM U data sets, IBM recommends using system-determined block sizes for efficient DASD utilization. For RECFM U data sets, IBM recommends using a block size of 32760, which is most efficient from the performance and DASD utilization perspective.

2. Abbreviations used for data set types are shown as follows.

   U   Unique data set, allocated by this product and used by only this product. This table provides all the required information to determine the correct storage for this data set. You do not need to refer to other tables or program directories for the data set size.

   S   Shared data set, allocated by this product and used by this product and other products. To determine the correct storage needed for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.

   E   Existing shared data set, used by this product and other products. This data set is *not* allocated by this product. To determine the correct storage for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.

If you currently have a previous release of this product installed in these libraries, the installation of this release will delete the old release and reclaim the space that was used by the old release and any service that had been installed. You can determine whether these libraries have enough space by deleting the old release with a dummy function, compressing the libraries, and comparing the space requirements with the free space in the libraries.

For more information about the names and sizes of the required data sets, see 6.1.10, "Allocate SMP/E Target and Distribution Libraries" on page 22.

3. Abbreviations used for the file system path type are as follows.

N   New path, created by this product.
X   Path created by this product, but might already exist from a previous release.
P   Previously existing path, created by another product.

4. All target and distribution libraries listed have the following attributes:

- The default name of the data set can be changed.
- The default block size of the data set can be changed.
- The data set can be merged with another data set that has equivalent characteristics.
- The data set can be either a PDS or a PDSE, with some exceptions. If the value in the "ORG" column specifies "PDS", the data set must be a PDS. If the value in "DIR Blks" column specifies "N/A", the data set must be a PDSE.

5. All target libraries listed have the following attributes:

- These data sets can be SMS-managed, but they are not required to be SMS-managed.
- These data sets are not required to reside on the IPL volume.
- The values in the "Member Type" column are not necessarily the actual SMP/E element types that are identified in the SMPMCS.

6. All target libraries that are listed and contain load modules have the following attributes:

- These data sets can be in the LPA, but they are not required to be in the LPA.
- These data sets can be in the LNKLST.
- These data sets are not required to be APF-authorized, with some exceptions. If the value in the "Member Type" column specifies "APF", the data set must be APF-authorized.

The following figures describe the target and file system paths and distribution libraries required to install Git. The storage requirements of Git must be added to the storage required by other programs that have data in the same library or path.

Note: Use the data in these tables to determine which libraries can be merged into common data sets. In addition, since some ALIAS names may not be unique, ensure that no naming conflicts will be introduced before merging libraries.

Figure 8. Storage Requirements for Git Target Libraries								
Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SRL2SAMP	Samples	ANY	U	PDS	FB	80	5	5

Figure 9. Git File System Paths		
DDNAME	T Y P E	Path Name
SRL2A001	X	/usr/lpp/Rocket/rsusr/ported/IBM

Figure 10. Storage Requirements for Git Distribution Libraries						
Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
ARL2SAMP	U	PDS	FB	80	5	5
ARL2HFS	U	PDS	VB	8796	13500	10

The rest of this section only applies when Git is downloaded from the web. It does not apply when you ordered it via Shopz.
Select this link to go to the next section: 5.3, "FMIDs Deleted" on page   14

The following figures list data sets that are not used by Git, but are required as input for SMP/E.

Figure 11 (Page 1 of 2). Storage Requirements for Git Web Download Data Sets						
Data Set Name	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
hlq.IBM.HAL2111.F1	U	PDS	FB	80	6	N/A
hlq.IBM.HAL2111.F2	U	PDS	FB	80	25299	N/A
hlq.IBM.HAL2111.SMPMCS	U	SEQ	FB	80	5	N/A

Data Set Name	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
z/OS UNIX file system	U	zFS	N/A	N/A	22725	N/A

Note: These are temporary data sets, which can be removed after the SMP/E install.

Figure 11 (Page 2 of 2). Storage Requirements for Git Web Download Data Sets

5.3 FMIDs Deleted

Installing Git might result in the deletion of other FMIDs. To see which FMIDs will be deleted, examine the ++VER statement in the SMPMCS of the product.

If you do not want to delete these FMIDs at this time, install Git into separate SMP/E target and distribution zones.

Note: These FMIDs are not automatically deleted from the Global Zone. If you want to delete these FMIDs from the Global Zone, use the SMP/E REJECT NOFMID DELETEFMID command. See the SMP/E Commands book for details.

5.4 Special Considerations

Git has no special considerations for the target system.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of Git.

Please note the following points:

- If you want to install Git into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCSI and the SMP/E control data sets.

- You can use the sample jobs that are provided to perform part or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries that are required for SMP/E execution have been defined in appropriate zones.

- You can use the SMP/E dialogs instead of the sample jobs to accomplish the SMP/E installation steps.

6.1 Installing Git

6.1.1 SMP/E Considerations for Installing Git

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of Git.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 12. Using values lower than the recommended values can result in failures in the installation. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. See the SMP/E manuals for instructions on updating the global zone.

Figure 12. SMP/E Options Subentry Values		
Subentry	**Value**	**Comment**
DSSPACE	(1500,1500,1500)	Space allocation
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 Overview of the installation steps

Overview of steps required to install Rocket Git for z/OS.

1. Allocate file system to hold web download package
   (only applicable for web download, not Shopz orders)

2. Upload the web download package to the host

(only applicable for web download, not Shopz orders)

3. Extract and expand the compressed SMPMCS and RELFILEs
   (only applicable for web download, not Shopz orders)

   **Select this link to skip the web download specific steps: **

4. Create SMP/E environment (optional)

5. Perform SMP/E RECEIVE

6. Allocate SMP/E target and distribution libraries

7. Allocate and mount z/OS UNIX file system (optional)

8. Allocate z/OS UNIX paths

9. Create DDDEF entries

10. Perform SMP/E APPLY

11. Perform SMP/E ACCEPT

12. Run REPORT CROSSZONE

6.1.4 Allocate file system to hold web download package

This section only applies when Git is downloaded from the web. It does not apply when it is ordered via Shopz.
**Select this link to skip the web download specific steps: **

The SMP/E input data sets to install Rocket Git for z/OS are provided as compressed files in HAL2111.pax.Z, which must be uploaded to z/OS as a z/OS UNIX file. You can either create a new z/OS UNIX file system (zFS) or create a new directory in an existing file system to place HAL2111.pax.Z.

You can use the following sample JCL to create a new file system, and directory, for the download package.

```
//FILESYS  JOB <job information>
//*
//* - Provide valid job card information
//* - Change:
//*   @zfs_path@
//*   ----+----1----+----2----+----3----+----4----+----5
//*             - To the absolute z/OS UNIX path for the download
//*                package (starting with /)
//*             - Maximum length is 50 characters
//*             - Do not include a trailing /
//*   @zfs_dsn@
//*             - To your file system data set name
//*
//* Your userid MUST be defined as a SUPERUSER to successfully
//* run this job
//*
//CREATE   EXEC PGM=IDCAMS,REGION=0M,COND=(0,LT)
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  DEFINE CLUSTER ( -
        NAME(@zfs_dsn@) -
        TRK(22725 10) -
        LINEAR -
        SHAREOPTIONS(3) -
        )
//*
//       SET ZFSDSN='@zfs_dsn@'
//FORMAT   EXEC PGM=IOEAGFMT,REGION=0M,COND=(0,LT),
//          PARM='-aggregate &ZFSDSN -compat'
//*STEPLIB  DD DISP=SHR,DSN=IOE.SIOELMOD        before z/OS 1.13
//*STEPLIB  DD DISP=SHR,DSN=SYS1.SIEALNKE       from z/OS 1.13
//SYSPRINT DD SYSOUT=*
//*
//MOUNT    EXEC PGM=IKJEFT01,REGION=0M,COND=(0,LT)
//SYSEXEC  DD DISP=SHR,DSN=SYS1.SBPXEXEC
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
  PROFILE MSGID WTPMSG
  oshell umask 0022; +
    mkdir -p @zfs_path@
  MOUNT +
    FILESYSTEM('@zfs_dsn@') +
    MOUNTPOINT('@zfs_path@') +
    MODE(RDWR) TYPE(ZFS) PARM('AGGRGROW')
//*
```

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.5 Upload the web download package to the host

This section only applies when Git is downloaded from the web. It does not apply when it is ordered via Shopz.
Select this link to skip the web download specific steps: 6.1.7, "Sample Jobs" on page 20

Upload the HAL2111.readme.txt file in text format and the HAL2111.pax.Z file in binary format from your workstation to the z/OS UNIX file system.

In the following sample dialog, we use FTP from a Microsoft Windows command line to do the transfer. Commands or other information entered by the user are in bold, and the following values are assumed:

User enters:	Values
Figure 13. User Entered Values	
mvsaddr	TCP/IP address or hostname of the z/OS system
tsouid	Your TSO user ID
tsopw	Your TSO password
d:	Location of the downloaded files
@zfs_path@	z/OS UNIX path where to store the files. This matches the @zfs_path@ variable you specified in the previous step.

```
C:\>ftp mvsaddr
Connected to mvsaddr.
220-FTPD1 IBM FTP CS %version% at mvsaddr, %time% on %date%.
220 Connection will close if idle for more than 5 minutes.
User (mvsaddr:(none)): tsouid
331 Send password please.
Password: tsopw
230 tsouid is logged on.  Working directory is "tsouid.".
ftp> cd @zfs_path@
250 HFS directory @zfs_path@ is the current working directory
ftp> ascii
200 Representation type is Ascii NonPrint
ftp> put d:\HAL2111.readme.txt
200 Port request OK.
125 Storing data set @zfs_path@/HAL2111.readme.txt
250 Transfer completed successfully.
ftp: 9211 bytes sent in 0.01 sec. (1366.67 Kb/s)
ftp> binary
200 Representation type is Image
ftp> put d:\HAL2111.pax.Z
200 Port request OK.
125 Storing data set @zfs_path@/HAL2111.pax.Z
250 Transfer completed successfully.
ftp: 271563264 bytes sent in 1.26 sec. (1040.52 Kb/s)
```

```
ftp> quit
221 Quit command received. Goodbye.
```

6.1.6 Extract and expand the compressed SMPMCS and RELFILEs

This section only applies when Git is downloaded from the web. It does not apply when it is ordered via Shopz.
Select this link to skip the web download specific steps: 6.1.7, "Sample Jobs" on page 20

The HAL2111.readme.txt file uploaded in the previous step holds a sample JCL to expand the compressed SMPMCS and RELFILEs from the uploaded HAL2111.pax.Z file into data sets for use by the SMP/E RECEIVE job. The JCL is repeated here for your convenience.

- @zfs_path@ matches the variable you specified in the previous step.

- If the 'oshell' command gets a RC=256 and message
     "pax: checksum error on tape (got ee2e, expected 0)", then the
     archive file was not uploaded to the host in binary format.

- GIMUNZIP allocates data sets to match the definitions of
     the original data sets. You may encounter errors if your SMS ACS
     routines alter the attributes used by GIMUNZIP.
     If this occurs, specify a non-SMS managed volume for the
     GIMUNZIP allocation of the data sets. For example:
   <ARCHDEF archid="..."
        storclas="storage_class" volume="data_set_volume"
        newname="..."/>

```
//EXTRACT  JOB <job information>
//*
//*   - Provide valid job card information
//*   - Change:
//*       @PREFIX@
//*       ----+----1----+----2----+
//*                 - To your desired data set name prefix
//*                 - Maximum length is 25 characters
//*                 - This value is used for the names of the
//*                    data sets extracted from the download-package
//*       @zfs_path@
//*       ----+----1----+----2----+----3----+----4----+----5
//*                 - To the absolute z/OS UNIX path for the
//*                    download-package (starting with /)
//*                 - Maximum length is 50 characters
//*                 - Do not include a trailing /
//*
//UNPAX    EXEC PGM=IKJEFT01,REGION=0M,COND=(0,LT)
//SYSEXEC  DD DISP=SHR,DSN=SYS1.SBPXEXEC
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
```

```
   oshell cd @zfs_path@/ ; +
      pax -rvf HAL2111.pax.Z
//*
//GIMUNZIP EXEC PGM=GIMUNZIP,REGION=0M,COND=(0,LT)
//*STEPLIB  DD DISP=SHR,DSN=SYS1.MIGLIB
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(50,10))
//SYSUT4   DD UNIT=SYSALLDA,SPACE=(CYL,(25,5))
//SMPOUT   DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SMPDIR   DD PATHDISP=KEEP,
// PATH='@zfs_path@/'
//SYSIN    DD *
<GIMUNZIP>
<ARCHDEF archid="IBM.HAL2111.F1"
        newname="@PREFIX@.IBM.HAL2111.F1"/>
<ARCHDEF archid="IBM.HAL2111.F2"
        newname="@PREFIX@.IBM.HAL2111.F2"/>
<ARCHDEF archid="IBM.HAL2111.SMPMCS"
        newname="@PREFIX@.IBM.HAL2111.SMPMCS"/>
</GIMUNZIP>
//*
```

6.1.7 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install Git:

Figure 14. Sample Installation Jobs			
Job Name	**Job Type**	**Description**	**SMPTLIB Data Set**
RL21SMPE	SMP/E	Sample job to create an SMP/E environment (optional)	IBM.HAL2111.F1
RL22RCVE	RECEIVE	Sample SMP/E RECEIVE job	IBM.HAL2111.F1
RL23ALOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HAL2111.F1
RL24ZFS	ALLOMZFS	Sample job to allocate, create mountpoint, and mount zFS data sets	IBM.HAL2111.F1
RL25MKD	MKDIR	Sample job to invoke the supplied RL2MKDIR EXEC to allocate file system paths	IBM.HAL2111.F1
RL26DDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HAL2111.F1
RL27APLY	APPLY	Sample SMP/E APPLY job	IBM.HAL2111.F1
RL28ACPT	ACCEPT	Sample SMP/E ACCEPT job	IBM.HAL2111.F1
Note: When Git is downloaded from the web, the RELFILE data set name will be prefixed by your chosen high level qualifier, as documented in section 6.1.6, "Extract and expand the compressed SMPMCS and RELFILEs" on page 19.			

The rest of this section only applies when Git is ordered via Shopz. It does not apply when you downloaded it from the web.
Select this link to go to the next section: 6.1.8, "Create SMP/E environment (optional)"

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.9, "Perform SMP/E RECEIVE" on page 22) then copy the jobs from the SMPTLIB data sets to a work data set for editing and submission. See Figure 14 on page 20 to find the appropriate data set.

You can also copy the sample installation jobs from the product files by submitting the following job. Before you submit the job, add a job card and change the lowercase parameters to uppercase values to meet the requirements of your site.

```
//STEP1    EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//IN   DD DSN=IBM.HAL2111.F1,
//           DISP=SHR,
//*           VOL=SER=filevol,
//           UNIT=SYSALLDA
//OUT      DD DSNAME=jcl-library-name,
//           DISP=(NEW,CATLG,DELETE),
//           SPACE=(TRK,(5,5,5)),
//*           VOL=SER=dasdvol,
//           UNIT=SYSALLDA
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN    DD *
    COPY INDD=IN,OUTDD=OUT
/*
```

See the following information to update the statements in the previous sample:

IN:
    filevol is the volume serial of the DASD device where the downloaded files reside.
OUT:
    jcl-library-name is the name of the output data set where the sample jobs are stored.
    dasdvol is the volume serial of the DASD device where the output data set resides. Uncomment the statment if a volume serial must be provided.

6.1.8 Create SMP/E environment (optional)

If you are using an existing CSI, do not run the sample job RL21SMPE.

If you choose to create a new SMP/E environment for this install, a sample job is provided or you may choose to use your own JCL. If you choose to use the sample job provided, edit and submit RL21SMPE. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.9 Perform SMP/E RECEIVE

If you have obtained Git as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the Git FMIDs, service, and HOLDDATA that are included on the CBPDO package. For more information, see the documentation that is included in the CBPDO.

You can also choose to edit and submit sample job RL22RCVE to perform the SMP/E RECEIVE for Git. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.10 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job RL23ALOC to allocate the SMP/E target and distribution libraries for Git. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.11 Allocate, create and mount ZFS Files (Optional)

This job allocates, creates a mountpoint, and mounts zFS data sets.

If you plan to install Git into a new z/OS UNIX file system, you can edit and submit the optional RL24ZFS job to perform the following tasks:

- Create the z/OS UNIX file system
- Create a mountpoint
- Mount the z/OS UNIX file system on the mountpoint

Consult the instructions in the sample job for more information.

The recommended z/OS UNIX file system type is *zFS*. The recommended mountpoint is */usr/lpp/Rocket/rsusr/ported*.

Before running the sample job to create the z/OS UNIX file system, you must ensure that OMVS is active on the driving system. zFS must be active on the driving system if you are installing Git into a file system that is zFS.

If you create a new file system for this product, consider updating the BPXPRMxx PARMLIB member to mount the new file system at IPL time. This action can be helpful if an IPL occurs before the installation is completed.

```
MOUNT FILESYSTEM('#dsn')
 MOUNTPOINT('/usr/lpp/Rocket/rsusr/ported')
 MODE(RDWR)         /* can be MODE(READ) */
 TYPE(ZFS) PARM('AGGRGROW') /* zFS, with extents */
```

See the following information to update the statements in the previous sample:

#dsn is the name of the data set holding the z/OS UNIX file system.
/usr/lpp/Rocket/rsusr/ported is the name of the mountpoint where the z/OS UNIX file system will be
mounted.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.12 Allocate File System Paths

The target system HFS or zFS data set must be mounted on the driving system when running the sample
RL25MKD job since the job will create paths in the HFS or zFS.

Before running the sample job to create the paths in the file system, you must ensure that OMVS is active
on the driving system and that the target system's HFS or zFS file system is mounted to the driving
system. zFS must be active on the driving system if you are installing Git into a file system that is zFS.

If you plan to install Git into a new HFS or zFS file system, you must create the mountpoint and mount the
new file system to the driving system for Git.

The recommended mountpoint is *usr/lpp/Rocket/rsusr/ported*.

Edit and submit sample job RL25MKD to allocate the HFS or zFS paths for Git. Consult the instructions in
the sample job for more information.

If you create a new file system for this product, consider updating the BPXPRMxx PARMLIB member to
mount the new file system at IPL time. This action can be helpful if an IPL occurs before the installation is
completed.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.13 Create DDDEF Entries

Edit and submit sample job RL26DDEF to create DDDEF entries for the SMP/E target and distribution
libraries for Git. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.14 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job RL27APLY to perform
   an SMP/E APPLY CHECK for Git. Consult the instructions in the sample job for more information.

   The latest HOLDDATA is available through several different portals, including
   http://service.software.ibm.com/holdata/390holddata.html. The latest HOLDDATA may identify HIPER
   and FIXCAT APARs for the FMIDs you will be installing. An APPLY CHECK will help you determine if
   any HIPER or FIXCAT APARs are applicable to the FMIDs you are installing. If there are any
   applicable HIPER or FIXCAT APARs, the APPLY CHECK will also identify fixing PTFs that will resolve
   the APARs, if a fixing PTF is available.

You should install the FMIDs regardless of the status of unresolved HIPER or FIXCAT APARs. However, do not deploy the software until the unresolved HIPER and FIXCAT APARs have been analyzed to determine their applicability. That is, before deploying the software either ensure fixing PTFs are applied to resolve all HIPER or FIXCAT APARs, or ensure the problems reported by all HIPER or FIXCAT APARs are not applicable to your environment.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the APPLY CHECK. The SMP/E root cause analysis identifies the cause only of *errors* and not of *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings, instead of errors).

Here are sample APPLY commands:

a. To ensure that all recommended and critical service is installed with the FMIDs, receive the latest HOLDDATA and use the APPLY CHECK command as follows

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
FIXCAT(IBM.PRODUCTINSTALL-REQUIREDSERVICE)
GROUPEXTEND .
```

Some HIPER APARs might not have fixing PTFs available yet. You should analyze the symptom flags for the unresolved HIPER APARs to determine if the reported problem is applicable to your environment and if you should bypass the specific ERROR HOLDs in order to continue the installation of the FMIDs.

This method requires more initial research, but can provide resolution for all HIPERs that have fixing PTFs available and are not in a PE chain. Unresolved PEs or HIPERs might still exist and require the use of BYPASS.

b. To install the FMIDs without regard for unresolved HIPER APARs, you can add the BYPASS(HOLDCLASS(HIPER)) operand to the APPLY CHECK command. This will allow you to install FMIDs even though one or more unresolved HIPER APARs exist. After the FMIDs are installed, use the SMP/E REPORT ERRSYSMODS command to identify unresolved HIPER APARs and any fixing PTFs.

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
FIXCAT(IBM.PRODUCTINSTALL-REQUIREDSERVICE)
GROUPEXTEND
BYPASS(HOLDCLASS(HIPER)) .
  ..any other parameters documented in the program directory
```

This method is quicker, but requires subsequent review of the Exception SYSMOD report produced by the REPORT ERRSYSMODS command to investigate any unresolved HIPERs. If you have received the latest HOLDDATA, you can also choose to use the REPORT MISSINGFIX command and specify Fix Category IBM.PRODUCTINSTALL-REQUIREDSERVICE to investigate missing recommended service.

If you bypass HOLDs during the installation of the FMIDs because fixing PTFs are not yet available, you can be notified when the fixing PTFs are available by using the APAR Status Tracking (AST) function of ServiceLink or the APAR Tracking function of ResourceLink.

2. After you take actions that are indicated by the APPLY CHECK, remove the CHECK operand and run the job again to perform the APPLY.

   Note: The GROUPEXTEND operand indicates that SMP/E applies all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

   Expected Return Codes and Messages from APPLY CHECK: You will receive a return code of 0 if this job runs correctly.

   Expected Return Codes and Messages from APPLY: You will receive a return code of 0 if this job runs correctly.

6.1.15 Perform SMP/E ACCEPT

Edit and submit sample job RL28ACPT to perform an SMP/E ACCEPT CHECK for Git. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the ACCEPT CHECK. The SMP/E root cause analysis identifies the cause of *errors* but not *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings rather than errors).

Before you use SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. In this way, you can save the entries that are produced from JCLIN in the distribution zone whenever a SYSMOD that contains inline JCLIN is accepted. For more information about the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E Commands book for details.

After you take actions that are indicated by the ACCEPT CHECK, remove the CHECK operand and run the job again to perform the ACCEPT.

Note: The GROUPEXTEND operand indicates that SMP/E accepts all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages from ACCEPT CHECK: You will receive a return code of 0 if this job runs correctly.

If PTFs that contain replacement modules are accepted, SMP/E ACCEPT processing will link-edit or bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder might issue messages that indicate unresolved external references, which will result in a return code of 4 during the ACCEPT phase. You can ignore these messages, because the distribution libraries are not executable and the unresolved external references do not affect the executable system libraries.

Expected Return Codes and Messages from ACCEPT: You will receive a return code of 0 if this job runs correctly.

6.1.16 Run REPORT CROSSZONE

The SMP/E REPORT CROSSZONE command identifies requisites for products that are installed in separate zones. This command also creates APPLY and ACCEPT commands in the SMPPUNCH data set. You can use the APPLY and ACCEPT commands to install those cross-zone requisites that the SMP/E REPORT CROSSZONE command identifies.

After you install Git, it is recommended that you run REPORT CROSSZONE against the new or updated target and distribution zones. REPORT CROSSZONE requires a global zone with ZONEINDEX entries that describe all the target and distribution libraries to be reported on.

For more information about REPORT CROSSZONE, see the SMP/E manuals.

6.1.17 Cleaning Up Obsolete Data Sets

The web download data sets listed in Figure 11 on page 13 (section 5.2.3, "DASD Storage Requirements" on page 11) are temporary data sets. You can delete these data sets after you complete the SMP/E install.

6.2 Activating Git

6.2.1 File System Execution

If you mount the file system in which you have installed Git in read-only mode during execution, then you do not have to take further actions to activate Git.

6.3 Product Customization

Refer to https://www.ibm.com/docs/en/dbb/1.1.0?topic=dbb-setting-up-git-uss to complete the configuration tasks.

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Reader's Comments

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