

ICE, The Integrity Controls Environment, is a collection of Integrated Applications that are used to:

- 1. Validate the ongoing integrity of the z/OS Image/Sysplex configuration, their major subsystems and operational components.*
- 2. Document configuration access and changes and/or control/limit access to MVS and/or UNIX system configuration datasets and files.*
- 3. Provide a global access point from which insight can be gained into the operational integrity of the z/OS Sysplex and its Images.*

ICE Installation and Configuration

**ICE 19.0
USER GUIDE**



Contact us for additional information:

NewEra Software Technical Support

800-421-5035 or 408-520-7100

Or text support requests to 669-888-5061

support@newera.com

www.newera.com

Rev: 2025-9-30

1 Foreword

1.1 Copyright, Trademark and Legal Notices

1.1.1 Copyrights

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1.1.2 License Agreement

This User Guide describes the installation and operation of Image FOCUS and related components of the Integrity Controls Environment (ICE). It is made available only under the terms of a license agreement between the licensee and NewEra Software, Inc. No part of this Guide or the related Software Product(s) may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose, without the express written permission of NewEra Software, Inc.

1.1.3 Trademarks and Copyrights of Others

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1.2 General Information

1.2.1 The Purpose of this Document

The purpose of this document is to explain the installation and setup of The Integrity Controls Environment. It should be used as a reference during each step of ICE installation and setup.

1.2.2 Who Should Read this Document

Those given the responsibility to install, maintain, and use Image FOCUS should read this document. It will explain in detail how Image FOCUS is installed, configured, maintained and used.

1.2.3 Other Documents and Resources

In addition to this document, new users will benefit from the content of these additional documents:

Image FOCUS Read Me;

The Image FOCUS Read Me is found in the Product Download Package.

Getting Started With Image FOCUS.

Getting Started with Image FOCUS is a step-by-step walk through that provides a basic understanding of how to navigate and use the Image FOCUS Workbench and how to setup and use of the Image FOCUS Surveillance Monitor (Production View).

The Getting Started with Image FOCUS guide is also in the Download Package and can be accessed from the NewEra web site or by using the link below:

https://www.newera.com/INFO/Image_FOCUS_19_Getting_Started_Guide.pdf

Image FOCUS Messages Volume 1 & 2

These documents contain a numerical list of Image FOCUS Inspection Messages. Each Inspection Message issued by Image FOCUS, either as part of an Image or Component Inspection, is described.

1.2.4 Reporting Problems

When reporting an Image FOCUS problem to NewEra Technical Support, please provide the following information so that we may resolve the issue expeditiously.

The JOBLOG/JCL/MESSAGE output from the Image FOCUS Address Space;

- The full Image Inspection Report.
- The output from the INSTALL/ALLOC/BUILD job(s).
- The site-specific 'D M=CPU' information.

Please send this and all other information via email to:

- support@newera.com

1.3 Technical Support Information

Around-the-clock-support

NewEra Software is dedicated to providing the highest level of technical support to meet our customers' growing needs. In order to meet these needs, NewEra provides technical support, 7 days a week, 24 hours a day.

Reach us by Telephone during Business Hours

Please use the following phone numbers to reach our technical support staff during normal business hours (6 AM to 4 PM Pacific Time):

- In North America, dial 1-800-421-5035
- Outside North America, dial 1-408-520-7100
- Support inquiries may also be texted to 669-888-5061

Reach us by Telephone during non-Business Hours

In case of an emergency, during non-business hours, phone the above numbers to receive instructions on how to contact a Technical Support Representative or a Technical Support Manager.

Sending Email

Our technical support staff can be reached by email at support@newera.com. Email messages will be answered by the next business day. Product technical questions or product recommendations may be sent via email.

Help through the NewEra website

You can access technical support from www.newera.com. Click the Support tab at the top of the screen to reach our Technical Support Request page.

Service Levels

NewEra is committed to providing the highest level of quality to our customers by adopting the following criteria for responding to customer requests:

- All critical questions received by phone during working hours will be answered within 15 minutes of receiving the request;
- Technical questions sent by email, or messages sent through our Technical Support Request page, will be answered by the next business day.

We Want Your Suggestions!

NewEra understands the significance of providing our customers with the highest quality support and welcomes all suggestions as to how we may improve Technical Support.

1.4 About The Integrity Controls Environment (ICE)

ICE is composed of the following major components. Each is installed and configured by following the installation and setup instructions provided in this User Guide.

1.4.1 IFOM – For Multiple Users

When installed as a VTAM application to support multiple simultaneous users, Image FOCUS maintains the IFOM started task. Individual users logon to Image FOCUS via IFOM which in turn automatically starts a new session for each concurrent user. These individual user sessions are managed by a unique IFOS started task. As users logoff, their session and the related IFOS started task is ended. IFOM, however, remains active waiting to support additional users as they logon.

1.4.2 IFOS – User Specific Address Space

Individual users logging on to ICE via a site defined VTAM APPLID are managed by an individual, unique IFOS started task. As these online users logoff, their VTAM sessions and the related IFOS started tasks are ended.

1.4.3 IFOBG – For Background Operations

The Image FOCUS (IFO) Background Started Task (IFOBG), which operates at intervals controlled via the Image FOCUS Production View, will discover, examine and report Configuration Findings and Changes that would result in future Sysplex/Image IPL failures. Such findings may be optionally sent to a designated user or group via Email or Text Message.

1.4.4 IFOR – For Recovery

The Image FOCUS (IFO) Recovery Started Task (IFOR) maintains its own independent communications subsystem for communication with ICE when TSO is unavailable providing IFO/ISPF application support to a single locally attached non-SNA 3270 type console.

1.4.5 IFO Batch – IFOBAT/IFOBATA/IFOBATS

The Image FOCUS application is supplied with three PROCS that allow inspections to be called for in a batch job. They are IFOBAT, IFOBATA and IFOBATS. IFOBAT runs the z/OS Core Inspection. IFOBATA runs the z/OS Core and in addition, JES, VTAM and TCP/IP Inspections. IFOBATS runs the z/OS Core Inspection with SYSCAT and IEASYS suffixes defined.

1.5 Messages and Codes

Image FOCUS Messages and ABEND Codes are provided in the download email link under the heading: Other Image FOCUS Resources - System Message Manual and Inspection Message Manual.

The Integrity Controls Environment - ICE 19.0

1.6 Environmental Restrictions

The Integrity Controls Environment (ICE) offers access to ISPF/PDF, ISPF/PDF applications, REXX programs and CLISTs with the following restrictions:

IBM supplied ISPF/PDF datasets must be used. No customized or altered form of these datasets is supported. [Exception: Users are able to modify the NSE@APPL panel to add specific applications to the User Defined Application Menu;

Only one locally attached non-SNA 3270 type console per IFOR (Image FOCUS Recovery) address space is allowed. If additional user access is needed, a user may start additional IFOR address spaces;

Native TSO commands and services are not fully supported;

Support for line mode I/O differs from native TSO support of line mode I/O;

Local consoles (if used without VTAM) are supported in 24 x 80 mode only;

After logging off of IFOR (Image FOCUS Recovery), the user must re-initialize the address space by restarting IFOR before logging on again;

The installation procedures for IFOR (Image FOCUS Recovery) allocate a single ISPF profile dataset that will be used for any IFOR user. This is different from TSO and IFOM/S (Multi-user Image FOCUS) support where each user has a dedicated ISPF profile dataset;

Attempts to use certain restricted functions will result in the following message:

“You attempted to RUN an Unsupported function in a dynamic TSO environment.”

1.7 System Requirements

1.7.1 Prerequisites

The latest Patch Release of the Integrity Controls Environment (ICE) 19.0 or higher, access to ACF/VTAM, a standard security system (e.g., RACF, ACF2 or Top Secret), a valid USER ID and PASSWORD, and a non-SNA locally attached console, that supports 24X80 mode (Recovery Mode), or a VTAM (TSO Multi-User Mode) supported display terminal, are required.

If needed, contact support@newera.com for an updated download link.

1.7.2 The License Key

A License Key is not required to install and configure ICE, however a specific License Key is required to use its supported applications. Once the License Key is inserted in the ICE Control Member NSEPRM00, the functions of the related ICE Applications will be unlocked and become immediately accessible from the ICE Primary Menu.

If needed, contact support@newera.com for the necessary License Key(s).

2 Table of Contents

1 Foreword.....2

1.1 Copyright, Trademark and Legal Notices.....2

1.1.1 Copyrights2

1.1.2 License Agreement2

1.1.3 Trademarks and Copyrights of Others.....2

1.2 General Information3

1.2.1 The Purpose of this Document3

1.2.2 Who Should Read this Document.....3

1.2.3 Other Documents and Resources3

1.2.4 Reporting Problems4

1.3 Technical Support Information5

1.4 About The Integrity Controls Environment (ICE)6

1.4.1 IFOM – For Multiple Users.....6

1.4.2 IFOS – User Specific Address Space.....6

1.4.3 IFOBG – For Background Operations6

1.4.4 IFOR – For Recovery6

1.4.5 IFO Batch – IFOBAT/IFOBATA/IFOBATS.....6

1.5 Messages and Codes7

1.6 Environmental Restrictions8

1.7 System Requirements.....9

1.7.1 Prerequisites9

1.7.2 The License Key9

2 Table of Contents 10

3 Product Installation..... 14

3.1 Web Download 14

3.2 Licensing and Authorization 14

3.2.1 Fully Authorized Downloads 14

3.2.2 Unauthorized Evaluation Downloads..... 14

3.3 Upgrading from a Prior Release 15

3.4 ESM Application Access Security 15

3.5 ICE Application Access Control 15

3.6 IFOR Alternate Security Password..... 15

3.7 Planning for Installation..... 16

3.7.1 Selecting a High Level Qualifier 16

3.7.2 Select a Volume for ICE Dataset Allocation..... 16

3.7.3 Authorizing ICE Load Libraries..... 16

3.7.4 JCL Symbolics 16

3.8 Downloading from Web 17

3.8.1 Receiving the DISKET.NEZ File 17

3.8.2 Transferring File to Host..... 17

3.9 Edit and Run the Install Job 18

3.10 Choosing an Installation Method: Non-SMP/E and SMP/E 19

3.11 Full Non-SMP/E Installation..... 20

3.11.1 The ALLOC JOB - Allocating Datasets 20

3.11.2 Resulting ICE Datasets 21

3.11.3 The BUILD JOB - Product Build 22

3.11.4	Populated ICE Datasets.....	23
3.11.5	ICE Persistent Datasets.....	23
3.11.6	Installing The Control Editor – CE#ALLOC & CE#BUILD JOBS	24
3.12	Full SMP/E Installation	25
3.12.1	\$SM10AL1 – Allocate ICE Datasets.....	25
3.12.2	\$SM10AL2 – Allocate CE/TSO Datasets.....	25
3.12.3	\$SM10AL3 – Allocate ICE SMP DLIBS.....	26
3.12.4	\$SM10BLD – Build ICE SMP Configuration	26
3.12.5	\$SM20CSI – Allocate CSI Libraries.....	26
3.12.6	\$SM30INI - Allocate/Initialize the SMP/E Datasets.....	27
3.12.7	\$SM40DDF – SMP/E Dynamic Allocation Specifications	27
3.12.8	\$SM50REC – Stages Source for inclusion in SMP/E Domain.....	27
3.12.9	\$SM60APL – Matches Received Libraries with Targets	27
3.12.10	\$SM70ACC – Accepts SMP/E Library Updates	27
3.12.11	SMP/E Overview.....	27
3.12.12	Populated ICE Datasets – SMP/E Install.....	28
3.12.13	Updating IKJTSOxx to support The Control Editor	29
3.12.14	ICE Persistent Datasets	29
3.13	ICE Upgrades and Re-Installation Considerations.....	31
3.13.1	Upgrading or re-installing ICE – Non-SMP/E Method.....	31
3.13.2	Upgrading ICE - SMP/E method.....	32
3.14	Customizing an Installation.....	33
3.14.1	Authorizing the ICE Load Library	33
3.14.2	ICE ParmLib Members	34
3.14.3	Configuring NSEPRM00.....	34
3.14.4	ICE TASK Descriptions.....	35
3.14.5	Additional NSEPRM00 Settings.....	38
3.15	Additional Configuration Requirements for The Control Editor	40
3.15.1	External Security Manager Issues.....	40
3.15.2	Integration of The Control Editor with TSO/ISPF.....	40
3.15.3	Shared Journal Support for The Control Editor	42
3.16	VTAM Application Definition.....	43
3.16.1	VTAM APPLID Example	43
3.16.2	Configuring ICE to use VTAM.....	44
3.17	Installing for Multiple Users	44
3.17.1	Configuring the IFOM Started Task.....	44
3.17.2	Configuring the IFOS Started Task.....	45
3.18	Starting and Stopping IFOM and IFOS.....	46
3.18.1	IFOM.....	46
3.18.2	IFOS	46
3.19	IFOM Management.....	46
3.19.1	Display of all logged on users.....	46
3.19.2	Display of all address spaces.....	46
3.20	Installing for Recovery Use.....	47
3.20.1	Configuring the IFOR Started Task.....	47
3.20.2	The IFOR PROC.....	48
3.20.3	IFOR Dataset Mapping.....	49
3.20.4	IFOR - Cataloging Datasets.....	50
3.20.5	Starting IFOR.....	50

3.20.6	Stopping IFOR.....	50
3.21	Installing ICE on a Remote System.....	50
3.21.1	The ICE Remote Procedure – ICEAGNT	50
3.21.2	Remote ICE Configuration Members	51
3.21.3	Starting Related Task – NSEPRMxx.....	51
3.22	Automated Operations.....	52
3.22.1	Automatic Console Attach	52
3.23	Master Console Operations	53
3.24	Starting Multiple IFOR Sessions.....	53
3.25	Installing ICE for Background Use	54
3.25.1	Customizing the Background	54
3.25.2	TASK=NSWJSCI LOG Options	55
3.25.3	Stopping the Background	55
3.25.4	Possible Background Conflicts	55
3.25.5	Starting the Background	56
3.25.6	Background and UserId Associations.....	56
3.25.7	Background Sharing.....	56
3.26	Configuring Image FOCUS to Execute as a Batch Job	57
3.26.1	IFOBAT/IFOBATA/IFOBATS.....	57
3.26.2	IFOBAT/A/S Keywords	57
3.26.3	Auto Keyword Value Determination.....	59
3.26.4	Automation Examples	59
3.26.5	IFOBAT Considerations	59
3.26.6	Image FOCUS Considerations.....	60
3.27	Improved Performance with VLF Caching	61
3.28	Individual Users.....	62
3.29	Post Installation Tasks	62
3.29.1	Creating a Valid Copy.....	62
3.29.2	Licensed Copy	63
3.29.3	Evaluation Copy	63
3.29.4	Alternate Security Password	64
3.29.5	3270 Attention Exits	64
3.29.6	Security and Usage Accountability	64
3.29.7	Configuring to Store Packages.....	65
3.29.8	Email Option.....	65
3.29.9	Configuring Email.....	66
3.29.10	Message Management	68
4	ICE Definitions and Settings.....	71
4.1	CustDefs - Custom Inspectors and Applications	71
4.1.1	Custom Inspector Selection	71
4.1.2	Custom Inspection Definition	72
4.1.3	Defining Custom Applications	73
4.1.4	Application Interface Examples.....	75
4.1.5	Returning to Image FOCUS.....	76
4.2	Migrates - Migration Definitions and Settings.....	77
4.2.1	Migration Tool	77
4.3	ICEAdmin – Set Admin/User Access Controls	80
4.3.1	SetAdmin – Naming the ICE Administrator	82
4.3.2	Padlocks – Setting the Global Padlock.....	83

4.3.3	UserMode – ICE Application Access Rights.....	84
4.3.4	UserLogs – Access/Display User Activity	86
4.3.5	Activate – Activate Control Updates	87
5	Appendix A – SMP/E Overview	88
5.1	\$SM40DDF – JOB: SMPDDDF.....	88
5.2	\$SM40REC – JOB: SMPRECV	88
5.2.1	SMP/E RECEIVE process.....	89
5.3	\$SM40APL – JOB: SMPAPPLY.....	90
5.3.1	SMP/E APPLY process.....	91
5.4	\$SM40ACC – JOB: SMPACCPT.....	92
5.4.1	SMP/E ACCEPT process.....	93
5.5	ACCEPT reporting.....	95
6	Index	96

3 Product Installation

To ensure a successful installation, you should read and understand all sections of the Installation Guide prior to attempting an ICE installation. If installing to gain access to Image FOCUS (IFO), also read the IFO User and Getting Started Guides. If installing to gain access to The Control Editor (TCE), also read the TCE User and Configuration Dialog Guides.

All ICE applications - Image FOCUS, The Control Editor and others - are included in the ICE download package. All ICE applications are installed at the same time using either a Full Non-SMP/E or Full SMP/E installation of the Web Download.

If you encounter problems, please contact NewEra Technical Support using one of the following:

800-421-5035/408-520-7100 or support@newera.com

3.1 Web Download

The Integrity Controls Environment (ICE) is downloaded directly from the NewEra Web Site or from a specific download link distributed by NewEra Technical Support. These Download Links contain all of the JCL necessary to install the ICE environment and its applications.

3.2 Licensing and Authorization

The distribution files contain a complete version of ICE. You may use this link for installing a trial copy for evaluation purposes or updating an existing license. If you are installing for purposes of product evaluation, you will need to contact NewEra Technical Support for Temporary License Authorization. ICE Downloads are available as Fully Authorized and Unauthorized Evaluations.

3.2.1 Fully Authorized Downloads

Licensed users receive a single, customized ICE Download link that is attached to their unique Authorized Version of ICE and Licensed Applications. No additional License Keys are applied during installation to the Fully Authorized Downloads.

3.2.2 Unauthorized Evaluation Downloads

Evaluation Downloads are accompanied with 'Evaluation License Keys' that will be inserted into the NSEPRM00 Member during installation. It is not recommended, but licensed users may request an Unauthorized Download into which they would need to insert 'their License Keys' during installation.

3.3 Upgrading from a Prior Release

In general, if you are upgrading to a new release from an older prior release, you will need to reinstall the product.

In addition, if you are back-leveled to a much older release, you may need to update your License Authorization Code(s). To receive new License Authorization Codes, provide NewEra Technical Support with updated CPU MODEL and SERIAL NUMBER(s) information by sending a via email to support@newera.com.

For more detail, please see Section below titled **ICE Upgrades and Re-Installation Considerations**.

3.4 ESM Application Access Security

ICE passes the VTAM APPLID to SAF via the RACROUTE MACRO when the user attempts to logon to VTAM APPLID. An APPL profile may be defined to the External Security Manager (ESM) to protect the ICE APPL(s) so that only certain users can logon.

If a user attempts to logon, and is not authorized via the APPL profile, the following message is issued:

“(52) USERID NOT AUTHORIZED FOR THIS APPLICATION”

3.5 ICE Application Access Control

The Integrity Controls Environment (ICE) offers a unique set of system inspection, system reporting, and background processing features. Some features may not be useful or advisable for all ICE users. Access Control Option, found within the ICE Environment, help to create custom user interfaces that enforce application access controls over ICE functions ensuring that users gain access only to those functions appropriate to their needs.

3.6 IFOR Alternate Security Password

The Image FOCUS Recovery View allows a user to access the Primary Menu when JES, VTAM and TCP/IP are down or unavailable. It is also possible that RACF may be down or unavailable, thus preventing user access to the Primary Menu. If you want to overcome this possible access limitation, you can use an alternate password to bypass RACF. If an alternate security password is enabled, the security level assigned to the user is equivalent to the security level of the Image FOCUS address space.

To enable or disable the Alternative Password during installation, contact NewEra Technical support.

3.7 Planning for Installation

This section describes the steps necessary to prepare for installation - Selecting a Dataset Qualifier, Allocating Datasets, Authorizing ICE Load Libraries and Selection Symbolics.

3.7.1 Selecting a High Level Qualifier

Select a unique high level qualifier (&nssprfx), to be used in creating ICE related dataset names that do not conflict with existing dataset qualifiers and can be adequately defined to the External Security Manager.

3.7.2 Select a Volume for ICE Dataset Allocation

Select a volume to be used for the ICE datasets. This volume will be used in the symbolic parameter DSKVOLU described below.

3.7.3 Authorizing ICE Load Libraries

The ICE load library must be dynamically authorized prior to installation and then added to the IEAAAPFxx or PROGxx Parmlib Members to remain authorized in the event of a re-IPL.

3.7.4 JCL Symbolics

The following symbolic parameters, found in the ICE Install JOB, must be selected and the Install JOB updated, prior to running the JOB.

SPFPRFX	- IBM ISPF dataset prefix
NSSPRFX	- Image FOCUS chosen dataset prefix
DSKUNIT	- DASD unit for new ICE datasets
DSKVOLU	- VolSer for new ICE datasets

3.8 Downloading from Web

The ICE installation package (Product Libraries, User Guide, Read Me) is available for download from the Web. To request an ICE download link, contact NewEra Technical Support via Email at support@newera.com using the subject "ICE Download Link".

When you receive these download links, click on 'Download' to begin downloading. Your system will then prompt you for the path and file name under which to store the download file. Total download time will be approximately 3-5 minutes.

When the download is complete, you will receive a single download file containing the ICE binary. The ICExx_read_me.txt file contains instructions on the content and use of the download package.

3.8.1 Receiving the DISKET.NEZ File

The first step of the install is to move DISKET.NEZ to a pre-allocated dataset on your z/OS Host by creating and submitting a JOB similar to the one shown below, where "your.dsn" is the name of the dataset that will be used to RECEIVE the DISKET.NEZ File and "vol" is the related VOLSER.

```
//ALLOC JOB .....  
// EXEC PGM=IEFBR14  
//FILE DD DSN=your.dsn, DISP=(,CATLG),VOL=SER=vol,  
// UNIT=unit,SPACE=(CYL,(200,50)),LRECL=80,RECFM=FB,  
// BLKSIZE=6160  
//SYSPRINT DD DUMMY
```

3.8.2 Transferring File to Host

If using TSO SEND/RECEIVE, specify: SEND c:\DISKET.NEZ x:'your.dsn'. When transferring the file to the host, make certain it is done as a BINARY transfer.

3.9 Edit and Run the Install Job

Because of the size of the Install Job, it cannot be submitted from inside the receiving dataset, as it would result in a Space ABEND. Follow the customization instructions in the Install Job Dataset below carefully to avoid problems.

Instructional segment of the Install Job:

```

***** Top of Data *****
//INSTALL JOB 1,'LOAD INSTLIB',          <===== MODIFY
//      CLASS=A,                        <===== MODIFY
//      MSGCLASS=A                      <===== MODIFY
//*****
//*
//*   JOB: INSTALL   FUNCTION: INSTALL FROM INLINE DATA
//*
//*
//*   STEP:LKED1     LINK EDITS THE LOAD PROGRAM
//*   STEP:LOAD      VERIFIES JOBSTREAM
//*   STEP:IEBUPDTE  CREATES THE INSTLIB USING IEBUPDTE
//*   STEP:LKED2     LINK EDITS THE CUSTOMIZE PROGRAM
//*   STEP:PREPX     RUNS THE CUSTOMIZE PROGRAM
//*
//*****
//*
//* * * * *
//*
//* DO NOT RENUMBER THIS FILE
//*
//* DO NOT MAKE ANY GLOBAL CHANGES TO THIS FILE
//*
//* * * * *
//*
//* NSSPRFX - PREFIX FOR IMAGE FOCUS DATASETS
//* SPFPRFX - PREFIX FOR IBM ISPF/PDF DATASETS
//* DSKUNIT - UNIT NAME FOR IMAGE FOCUS DATASETS
//* DSKVOLU - VOLUME SERIAL NUMBER FOR IMAGE FOCUS DATASETS
//*
//*
//INSTALL PROC NSSPRFX='your_nssprfx',    <===== MODIFY
//      SPFPRFX='your_spfprfx',          <===== MODIFY
//      DSKUNIT=your_unit,                <===== MODIFY
//      DSKVOLU=your_volume               <===== MODIFY
//*
//* * * * *
//*
//* DO NOT MAKE ANY MODIFICATIONS TO THE FILE AFTER THIS LINE
//*
//* * * * *

```

Once the Install Job is edited, save the dataset and submit it. A successful submission will create the ICE hlq.IIq.INSTLIB, a dataset that contains additional JOBS that must be run to complete the installation process.

3.10 Choosing an Installation Method: Non-SMP/E and SMP/E

The two methods for completing the installation are the **Full Non-SMP/E** and **Full SMP/E** installation methods. **Only one** of these installation methods should be followed, though it may be insightful to become familiar with both methodologies.

For **Full Non-SMP/E** installation, follow the instructions in **Section 3.11** and then skip section 3.12.

For **Full SMP/E** installation, skip Section 3.11 and follow the instructions in **Section 3.12**.

Regardless of which method you choose, after you have followed the appropriate section, continue on to **Section 3.13**.

3.11 Full Non-SMP/E Installation

When the Full Non-SMP/E method of installation is selected, the following steps are required: examine and run ALLOC JOB, to allocate the ICE Datasets, examine and run a BUILD JOB, to build the ICE product files, customize the ICE Configuration, and authorize the ICE load library. Details of these installation steps follow.

3.11.1 The ALLOC JOB - Allocating Datasets

When the INSTALL Job is finished, open the hlq.IIq.INSTLIB Dataset and examine the ALLOC member. Take note that all the Symbolics defined in the INSTALL Job have been carried over and inserted into the ALLOC Member. Changing the content, other than the Job Card, of the ALLOC Member, will have an unpredictable, and likely unfavorable, impact on the ICE installation; it is not recommended.

If updating to a New Release or Patch of ICE, rename the existing ICE Dataset BEFORE the ALLOC JOB is submitted. Then, when the BUILD JOB is finished, copy Legacy Dataset Content as needed into the newly created ICE Datasets.

Update the Job Card entries shown at the top of the member, save and submit the JOB.

Instructional segment of the ALLOC Job:

```

***** Top of Data *****
//ALLOC JOB 1,'ALLOCATE DATASETS', <===== MODIFY
//      CLASS=A, <===== MODIFY
//      MSGCLASS=A <===== MODIFY
//*
//*****
//*
//* JOB: ALLOC FUNCTION: ALLOCATE IMAGE FOCUS DATASETS *
//* *
//*****
//*
//* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
//*
//* NSSPRFX - PREFIX FOR IMAGE FOCUS DATASETS *
//* DSKUNIT - UNIT NAME FOR IMAGE FOCUS DATASETS *
//* DSKVOLU - VOLUME SERIAL NUMBER FOR IMAGE FOCUS DATASETS *
//* SYSTEMN - SYSTEM NAME FOR USE IN ALLOCATING THE IPLCHECK LOG *
//* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
//*
//* IMPORTANT:
//*
//* THE FOLLOWING DATASETS MUST NOT BE SMS MANAGED:
//* &NSSPRFX..CTL.NPAD
//* &NSSPRFX..JRN.NPAD
//* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
//*
//ALLOC PROC NSSPRFX='IFO.TEST',
//      DSKUNIT=3390,
//      DSKVOLU=LVWRKA,
//      SYSTEMN=ADCD113
//*
```

3.11.2 Resulting ICE Datasets

When the ALLOC Job has finished, locate and verify that the following ICE Datasets have been created as expected:

ICE Dataset Set List:

```
hlq.11q.CTL.GLOBAL
hlq.11q.CTL.NPAD
hlq.11q.ICEWORK
hlq.11q.INSTLIB
hlq.11q.IPLCHECK.[sysname].LOG
hlq.11q.JRN.NPAD
hlq.11q.LOAD
hlq.11q.LOG.NPAD
hlq.11q.LOGFILE
hlq.11q.PACKAGE.INDEX
hlq.11q.PARMLIB
hlq.11q.PROCLIB
hlq.11q.PROFILE
hlq.11q.REPORT.INDEX
hlq.11q.SAMPLIB
hlq.11q.SISPCLB2
hlq.11q.SISPCLIB
hlq.11q.SISPMENU
hlq.11q.SISPPENU
hlq.11q.SISPPNL2
hlq.11q.SISPTABB
hlq.11q.SISPTABL
hlq.11q.USERLIB
```


3.11.4 Populated ICE Datasets

When the BUILD Job has finished, locate and examine the content of the ICE Datasets to determine that they have been populated with configuration members and application modules as expected.

```
hlq.llq.CTL.GLOBAL
hlq.llq.CTL.NPAD
hlq.llq.ICEWORK
hlq.llq.INSTLIB
hlq.llq.IPLCHECK.[sysname].LOG
hlq.llq.JRN.NPAD
hlq.llq.LOAD
hlq.llq.LOG.NPAD
hlq.llq.LOGFILE
hlq.llq.PACKAGE.INDEX
hlq.llq.PARMLIB
hlq.llq.PROCLIB
hlq.llq.PROFILE
hlq.llq.REPORT.INDEX
hlq.llq.SAMPLIB
hlq.llq.SISPCLB2
hlq.llq.SISPCLIB
hlq.llq.SISPMENU
hlq.llq.SISPPENU
hlq.llq.SISPPNL2
hlq.llq.SISPTABB
hlq.llq.SISPTABL
hlq.llq.USERLIB
```

3.11.5 ICE Persistent Datasets

Certain ICE Application persistent datasets are, by design, allocated dynamically using the ICE Works Dataset Qualifier as applications are accessed and the datasets are allocated. These datasets and their allocation type are shown below.

```
hlq.llq.$ICEUSER.AUDTLOG - PSFB
hlq.llq.$TCEISPF.PANELS - PDSE
hlq.llq.$TCERPDX.BKGSETS - PDSE
hlq.llq.$TCETEMP.REPORTS - PDSE
hlq.llq.$TCEUSER.SETTING - PDSE
```

If this method of allocation does not conform to or cannot be supported by site standards, these must be pre-allocated during installation using the following allocation specifications:

Data Set Name : hlq.llq.\$ICEUSER.AUDTLOG

General Data	Current Allocation
Management class . . : **None**	Allocated cylinders : 2
Storage class . . . : **None**	Allocated extents . : 1
Volume serial . . . : LVWRKD	
Device type : 3390	
Data class : **None**	

```

Organization . . . : PS
Record format . . . : FB
Record length . . . : 256
Block size . . . . : 27904
1st extent cylinders: 2
Secondary cylinders : 2
Data set name type :
SMS Compressible. . : NO

Current Utilization
Used cylinders . . : 1
Used extents . . . : 1

Dates
Creation date . . . : 2021/06/27
Referenced date . . : 2021/09/08
Expiration date . . : ***None***

```

```

Data Set Name . . . : hlq.llq.$TCEISPF.PANELS
Data Set Name . . . : hlq.llq.$TCERPDX.BKGSETS
Data Set Name . . . : hlq.llq.$TCETEMP.REPORTS
Data Set Name . . . : hlq.llq.$TCEUSER.SETTING

```

```

General Data
Management class . . : **None**
Storage class . . . : **None**
Volume serial . . . : LVWRKC
Device type . . . . : 3390
Data class . . . . . : **None**
Organization . . . . : PO
Record format . . . : VB
Record length . . . : 256
Block size . . . . . : 32760
1st extent cylinders: 1
Secondary cylinders : 2
Data set name type : LIBRARY

Current Allocation
Allocated cylinders : 15
Allocated extents . : 8

Current Utilization
Used pages . . . . . : 1,189
% Utilized . . . . . : 44

Dates
Creation date . . . : 2021/05/09
Referenced date . . : 2021/09/08
Expiration date . . : ***None***

```

3.11.6 Installing The Control Editor – CE#ALLOC & CE#BUILD JOBS

If your system is licensed for The Control Editor, and you plan to run it, you must run the CE#ALLOC and CE#BUILD jobs. These jobs allocate and build datasets necessary for The Control Editor to be integrated into the TSO/ISPF environment.

First, from hlq.llq.INSTLIB, run the CE#ALLOC job. Verify that its return code is zero (0). The CE#ALLOC job allocates the following datasets:

```

hlq.llq.CETSO.LOAD
hlq.llq.CETSO.LPALIB

```

Second, from hlq.INSTLIB, run the CE#BUILD job. Verify that its return code is zero (0).

Third, update IKJTSOxx by adding the TCE Command NEZCHKT as an authorized TSO command list. To do this invoke the following Operator Commands:

```

set ikjtso=xx
setprog lpa,add,modname=nezchkt,dsname=HLQ..cetso.lpalib

```

If you have performed the Non-SMP/E installation, you are now finished. You may skip the next section on SMP/E Installation and proceed to the following section on Customizing an Installation.

3.12 Full SMP/E Installation

When the Full SMP/E method of installation is selected, the jobs listed in sections 3.12.1 through 3.12.10 **MUST** be run in the order in which they appear here. After each job completes, you should verify that its return code(s) are '0'. Details of what part these jobs play in the installation process follows.

3.12.1 \$SM10AL1 – Allocate ICE Datasets

This job allocates all necessary runtime datasets for the ICE environment. It is analogous to the ALLOC job of the NON-SMP installation method. When the \$SM10AL1 job has finished, locate and verify that the following ICE Datasets have been created:

```
hlq.11q.CTL.GLOBAL
hlq.11q.CTL.NPAD
hlq.11q.ICEWORK
hlq.11q.INSTLIB
hlq.11q.IPLCHECK.[sysname].LOG
hlq.11q.JRN.NPAD
hlq.11q.LOAD
hlq.11q.LOG.NPAD
hlq.11q.LOGFILE
hlq.11q.PACKAGE.INDEX
hlq.11q.PARMLIB
hlq.11q.PROCLIB
hlq.11q.PROFILE
hlq.11q.REPORT.INDEX
hlq.11q.SAMPLIB
hlq.11q.SISPCLB2
hlq.11q.SISPCLIB
hlq.11q.SISPMENU
hlq.11q.SISPPENU
hlq.11q.SISPPNL2
hlq.11q.SISPTABB
hlq.11q.SISPTABL
hlq.11q.USERLIB
```

3.12.2 \$SM10AL2 – Allocate CE/TSO Datasets

This job allocates two ICE environment datasets specific to The Control Editor. This job **MUST** be run, regardless of whether or not The Control Editor is licensed or used. It is analogous to the CE#ALLOC job of the NON-SMP/E installation method. When the \$SM10AL2 job has finished, locate and verify that the following datasets have been created:

```
hlq.11q.CETSO.LOAD
hlq.11q.CETSO.LPALIB
```

3.12.3 \$SM10AL3 – Allocate ICE SMP DLIBS

This job allocates distribution library datasets into which all the product libraries, in raw form, will be stored. All the modules of the product are stored in these DLIBs in an unstructured form, which the APPLY job (\$SM60APL) will ultimately use for building the Target libraries. When the \$SM10AL3 job has finished, locate and verify that the following datasets have been created:

```
hlq.11q.ANEZLIB
hlq.11q.ANEZMOD
hlq.11q.INSTSMP
```

3.12.4 \$SM10BLD – Build ICE SMP Configuration

This job populates the ICE datasets that were allocated by the \$SM10AL1, \$SM20AL2, and \$SM10AL3 jobs with configuration members and application modules. In this way, it is analogous to the BUILD job in the Non-SMP/E installation method. It also begins the configuration of the SMP environment. No datasets are created by this job.

3.12.5 \$SM20CSI – Allocate CSI Libraries

This job allocates the CSI (Consolidated Software Inventory) Libraries. These are catalogs of information about the elements stored in the Distribution and Target Libraries. The Distribution Library contains system modification elements, such as modules and macros that may be installed in the running system. It also serves as a backup of these installation modules that may be called upon if an element in the production system encounters a serious error and must be replaced. The Target Libraries contain the actual executable code that is run on the system. The Global CSI Library contains information about all of the elements in both the Distribution and Target CSI Libraries, SMP/E processing options, the installation status of DLIB elements and information about exception and errors to the installation.

- Step One allocates the Global CSI Library.
- Step Two allocates the Target CSI Library.
- Step Three allocates the DLIB CSI Library

In addition, this JOB will prime the newly allocated SMPCSI Library by copying member 'GIMZPOOL' from SYS1.MACLIB into SMPCSI.

When the \$SM20CSI job has finished, locate and verify that the following datasets have been created:

```
hlq.11q.GLOBAL.CSI
hlq.11q.GLOBAL.CSI.DATA
hlq.11q.GLOBAL.CSI.INDEX
hlq.11q.IFOD.CSI
hlq.11q.IFOD.CSI.DATA
hlq.11q.IFOD.CSI.INDEX
hlq.11q.IFOT.CSI
```

```
hlq.llq.IFOT.CSI.DATA  
hlq.llq.IFOT.CSI.INDEX
```

3.12.6 \$SM30INI - Allocate/Initialize the SMP/E Datasets

This job allocates and initializes the following SMP/E datasets. When the \$SM30INI job has finished, locate and verify that the following datasets have been created:

```
hlq.llq.GLOBAL.SMPPTS  
hlq.llq.IFOT.SMPLTS  
hlq.llq.IFOT.SMPMTS  
hlq.llq.IFOT.SMPSCDS  
hlq.llq.IFOT.SMPSTS
```

The first of these datasets (SMPPTS) is a repository for all system modifications. The second (SMPLTS) maintains the base versions of load modules and program objects for which a SYSLIB allocation has been made. The last three datasets are target libraries which are used by SMP/E during APPLY processing.

3.12.7 \$SM40DDF – SMP/E Dynamic Allocation Specifications

This job configures SMP/E to be able to dynamically allocate datasets in the target and distribution zones that may not otherwise be specified by a DD statement. These may be permanent datasets, such as target or distribution libraries, temporary datasets, SYSOUT datasets, or work datasets. No datasets are created by this job.

3.12.8 \$SM50REC – Stages Source for inclusion in SMP/E Domain

This job imports system modifications into a staged SMP/E library domain. It then constructs entries in the Global CSI Library that describe them. No additional datasets are created by this job.

3.12.9 \$SM60APL – Matches Received Libraries with Targets

This job specifies which system modifications in the Distribution Library are to be installed into the Target Libraries. It verifies that all prerequisite modules have been installed, or are being installed concurrently, and that they are queued in the proper sequence. No datasets are created by this job.

3.12.10 \$SM70ACC – Accepts SMP/E Library Updates

This job installs the selected system modifications into the appropriate distribution libraries. No datasets are created by this job.

3.12.11 SMP/E Overview

The Appendix “A” to this Installation Guide should be used as a general overview of the SMP/E Installation Process.

3.12.12 Populated ICE Datasets – SMP/E Install

When the last of the SMP/E install jobs has finished, locate and examine the content of the ICE Datasets to determine that they have been populated with configuration members and application modules as expected.

```
hlq.11q.ANEZLIB
hlq.11q.ANEZMOD
hlq.11q.CETSO.LOAD
hlq.11q.CETSO.LPALIB
hlq.11q.CTL.GLOBAL
hlq.11q.CTL.NPAD
hlq.11q.GLOBAL.CSI
hlq.11q.GLOBAL.CSI.DATA
hlq.11q.GLOBAL.CSI.INDEX
hlq.11q.GLOBAL.SMPPTS
hlq.11q.ICEWORK
hlq.11q.IFOD.CSI
hlq.11q.IFOD.CSI.DATA
hlq.11q.IFOD.CSI.INDEX
hlq.11q.IFOT.CSI
hlq.11q.IFOT.CSI.DATA
hlq.11q.IFOT.CSI.INDEX
hlq.11q.IFOT.SMPLTS
hlq.11q.IFOT.SMPMTS
hlq.11q.IFOT.SMPSCDS
hlq.11q.IFOT.SMPSTS
hlq.11q.INSTLIB
hlq.11q.INSTSMP
hlq.11q.IPLCHECK.DDCD113.LOG
hlq.11q.JRN.NPAD
hlq.11q.LOAD
hlq.11q.LOG.NPAD
hlq.11q.LOGFILE
hlq.11q.PACKAGE.INDEX
hlq.11q.PARMLIB
hlq.11q.PROCLIB
hlq.11q.PROFILE
hlq.11q.REPORT.INDEX
hlq.11q.SAMPLIB
hlq.11q.SISPCLB2
hlq.11q.SISPCLIB
hlq.11q.SISPMENU
hlq.11q.SISPPENU
hlq.11q.SISPPNL2
hlq.11q.SISPTABB
hlq.11q.SISPTABL
hlq.11q.USERLIB
```

3.12.13 Updating IKJTSOxx to support The Control Editor

If you are licensed for The Control Editor, you must update IKJTSOxx by adding the TCE Command NEZCHKT as an authorized TSO command list. To do this invoke the following Operator Commands:

```
set ikjtso=xx
setprog lpa,add,modname=nezchk,dsname=HLQ..cetso.lpalib
```

3.12.14 ICE Persistent Datasets

Certain ICE Application persistent datasets are, by design, allocated dynamically using the ICE Works Dataset Qualifier as applications are accessed and the datasets are allocated. These datasets and their allocation type are shown below.

```
hlq.llq.$ICEUSER.AUDTLOG - PSFB
hlq.llq.$TCEISPF.PANELS - PDSE
hlq.llq.$TCERPDX.BKGSETS - PDSE
hlq.llq.$TCETEMP.REPORTS - PDSE
hlq.llq.$TCEUSER.SETTING - PDSE
```

If this method of allocation does not conform to or cannot be supported by site standards, these must be pre-allocated during installation using the following allocation specifications:

Data Set Name : hlq.llq.\$ICEUSER.AUDTLOG

General Data	Current Allocation
Management class . . . : **None**	Allocated cylinders : 2
Storage class : **None**	Allocated extents . : 1
Volume serial : LVWRKD	
Device type : 3390	
Data class : **None**	
Organization : PS	Current Utilization
Record format : FB	Used cylinders . . . : 1
Record length : 256	Used extents : 1
Block size : 27904	
1st extent cylinders: 2	
Secondary cylinders : 2	Dates
Data set name type :	Creation date . . . : 2021/08/27
SMS Compressible. . : NO	Referenced date . . : 2021/09/08
	Expiration date . . : ***None***

Data Set Name : hlq.llq.\$TCEISPF.PANELS

Data Set Name : hlq.llq.\$TCERPDX.BKGSETS

Data Set Name : hlq.llq.\$TCETEMP.REPORTS

Data Set Name : hlq.llq.\$TCEUSER.SETTING

General Data	Current Allocation
Management class . . . : **None**	Allocated cylinders : 15
Storage class : **None**	Allocated extents . : 8
Volume serial : LVWRKC	
Device type : 3390	
Data class : **None**	Current Utilization
Organization : PO	Used pages : 1,189

Record format . . . : VB
Record length . . . : 256
Block size : 32760
1st extent cylinders: 1
Secondary cylinders : 2
Data set name type : LIBRARY

% Utilized : 44

Dates

Creation date . . . : 2021/05/09
Referenced date . . : 2021/09/08
Expiration date . . : ***None***

The Integrity Controls Environment - ICE 19.0

3.13 ICE Upgrades and Re-Installation Considerations

When installing ICE for the first time, you followed either the Full Non-SMP/E or Full SMP/E installation methods. The method by which you installed ICE will determine how to proceed when installing updates or re-installing ICE.

3.13.1 Upgrading or re-installing ICE – Non-SMP/E Method

Updating or re-installing ICE by the Non-SMP/E method will overwrite customized ICE datasets and reset Production View settings to their default values. For this reason, it may be desirable or necessary to preserve these datasets and export Production View settings so that user-specific or site-specific customizations may be carried forward into the new installation.

This general process is as follows:

1. Export Production View Inspection settings,
 - a. Shut down the background task prior to exporting Production View inspection settings.
 - b. From the ICE Main Menu, select D – Defining, M – Migrates, E – Export. This will allow for information contained in these datasets to be written to alternate dataset on Export and read from that dataset on Import.
2. Preserve (by copying or renaming) certain datasets containing site-specific or customized configurations (see list below),
3. Install ICE following the Non-SMP/E method, as detailed in Section 3.10,
4. Compare new to old installed datasets to determine which preserved members may be copied into the newly installed datasets, in whole or in part,
5. Import Production View Inspection settings.
 - a. From the ICE Main Menu, select D – Defining, M – Migrates, I – Import.
 - b. Start up the background task.

This is a listing of installed ICE datasets showing which are changed with each release:

hlq.llq.CTL.GLOBAL	- (Control Editor Specific) Changed with each release.
hlq.llq.CTL.NPAD	- (Control Editor Specific) Changed with each release.
hlq.llq.ICEWORK	- (Control Editor Detectors Specific) Changed with each release.
hlq.llq.INSTLIB	- Changed with each release.
hlq.llq.IPLCHECK.system_name.LOG	- (IPLCHECK Specific)
hlq.llq.JRN.NPAD	- (Control Editor Specific) Changed with each release
hlq.llq.LOAD	- Changed with each release
hlq.llq.PACKAGE.INDEX	- Can use prior release for Package History.
hlq.llq.PARMLIB	- Changed with each release. Some information in the members can be manually copied.
Hlq.llq.PROCLIB	- Changed with each release if PROCs have changed
hlq.llq.PROFILE	- Can use prior release for activity history.

hlq.llq.REPORT.INDEX	- Can use prior release for activity history.
hlq.llq.SAMPLIB	- Changed with each release.
hlq.llq.SISPCLB2	- Changed with each release.
hlq.llq.SISPCLIB	- Changed with each release.
hlq.llq.SISPMENU	- Not always changed with each release.
hlq.llq.SISPPENU	- Not always changed with each release.
hlq.llq.SISPPNL2	- Not always changed with each release.
hlq.llq.SISPTABB	- Empty until First Inspection in work bench. Can use from prior release.
hlq.llq.SISPTABL	- Empty until First Inspection in work bench. Can use from prior release.
hlq.llq.USERLIB	- Not always changed with each release.

3.13.2 Upgrading ICE - SMP/E method

Updating or re-installing ICE by the SMP/E method will not overwrite customized ICE datasets; however, it will reset Production View settings to their default values. For this reason, it may be desirable to export Production View settings prior to running updates.

This process involves:

1. Exporting Production View Inspection settings,
 - a. Shut down the background task prior to exporting Production View inspection settings.
 - b. From the ICE Main Menu, select D – Defining, M – Migrates, E – Export. This will allow for information contained in these datasets to be written to alternate dataset on Export and read from that dataset on Import.
2. Installing an ICE update or a patch as a PTF through the SMP/E update process.
Instructions on performing this step will be available with PTFs directly from NewEra.
For more information, contact NewEra Technical Support at support@newera.com.
3. Importing Production View Inspection settings
 - a. From the ICE Main Menu, select D – Defining, M – Migrates, I – Import.
 - b. Start up the background task.

3.14 Customizing an Installation

After you have completed either the Full Non-SMP/E or the Full SMP/E installation method, all ICE Datasets, Configuration Members and Application Modules should be installed. The next steps are to authorize the ICE Load Library and customize the ICE NSEPRMxx ParmLib Member.

3.14.1 Authorizing the ICE Load Library

The ICE Load Library (&nssprfx.LOAD) may be APF Authorized in one of two ways:

First, add the LOAD dataset name and volume serial number to the APF Table Entries (APF ADD), found in the z/OS PROGxx Configuration Member of z/OS ParmLib. The new entry should look like this:

```
APF ADD DSNAME("&nssprfx".LOAD) VOLUME(volser)
```

Where "volser" is the volume serial number on which the ICE Load library will reside, and "&nssprfx" is the chosen dataset prefix for ICE.

Save the member then issue a SET PROG Operator Command, for example:

```
SET PROG=00.
```

Where the full PROG Member name is PROG00. This is the recommended method of authorization, as the ICE Load Libraries become persistent components of the APF Table.

Second, using the SETPROG Operator Command, for example:

```
SETPROG APF,ADD,DSNAME=dataset_name,VOLUME=volser
```

This method of APF Authorization is temporary and will not become a persistent component of the APF Table as it will not be brought forward during the next System IPL.

3.14.2 ICE ParmLib Members

The ICE ParmLib Dataset is populated with the Configuration Members shown below. Each member, initially conformed to recommended ICE Defaults, plays a unique role in the configuration of the ICE Applications and is explained in the Application User Guides. This notwithstanding, one of the ICE ParmLib Members, NSEPRM00 should be reviewed and its default setting updated as needed.

ICE ParmLib Members:

```

Menu  Functions  Confirm  Utilities  Help
-----
EDIT          IFO.TEST.PARMLIB          Row 00001 of 00014
Name          Prompt          Size  Created          Changed          ID
-----
_____ FDEPRM00
_____ NSEALTO0
_____ NSEBKG00
_____ NSECTL00
_____ NSEDET00
_____ NSEDSN00
_____ NSEENS00
_____ NSEGRP00
_____ NSEJRN00
_____ NSEMSGID
_____ NSEMSG00
_____ NSEPRMID
_____ NSEPRM00
_____ NSESEL00
**End**

```

3.14.3 Configuring NSEPRM00

As a general statement, the Default Settings found in the Member will satisfy most installations. When changes are necessary, it is a 'Best Practice' to make updates only after consulting with NewEra Technical Support. The primary configuration controls found within the NSEPRM00 member include:

3.14.3.1 BEGINPARALLEL

A Parallel Task Group is composed of the Named TASK defined within the BEGINPARALLEL and ENDPARALLEL Control Statements. Because of the nature of the work performed by the TASK named in this Control Statement Group, each such TASK may be started in Parallel with all others within the Group, when system resources are available to start them at the same time. These Tasks include:

Parallel TASKs - Group One

```

TASK=NSKINIT  AUTOINDEX          /* LOCAL 3270 DRIVER */
TASK=NSNLOAD  MODULE (IKJEFTSR) /* AUTHORIZED COMMANDS */
TASK=NSRINIT  PROC (IFOBG)  START (NO) /* SERVICES TASK */
TASK=NSJINIT          /* JES CONNECTION */
LOAD=NSCSCI          /* SUBMIT W/SUB=MSTR */

```

Within the NSEPRM00 Control Member, there are two BEGINPARALLEL Task Groupings. The positioning of these two groups within the Member CANNOT be changed as it is CRITICAL to the overall successful initialization of the Integrity Controls Environment (ICE).

Parallel TASKs - Group Two

```
TASK=NSWCEFM /* FUNCTION SCHEDULER */
```

3.14.3.2 ENDPARALLEL

The ENDPARALLEL Control Statement is used to signal the end of Parallel TASK Processing and the beginning of TASK Serialization of any TASK that follows within the Group. Because of the nature of the work performed by the TASK following this Control Statement, each such TASK is started and completed before the next TASK in the group is started. The TASKs Include:

Serial TASKs - Group

```
TASK=NSWJSSI /* JOURNAL SUBSYSTEM */
TASK=NSWSCCTL INTERVAL(120) /* SHARE CONTROL LIST */
TASK=NSWJCTL INTERVAL(60) /* SHARE CNTL JOURNALS */
TASK=NSWLCTL INTERVAL(60) /* SHARE LOGGER */
TASK=NSWJSCI LOG(ERRORS) /* CHANGE DETECTION */
TASK=NSWJSTI CTL(00) JRN(00) ENS(00) DET(00) SEL(00) GRP(00) /* TCE */
TASK=NSWJCDT /* CHANGE AUTOMATION */
TASK=NSWOMST /* OPER MSG MANAGER */
```

No specific Control Statement is used to signal the END of Serial TASK Processing. However, in the NSEPRM00 Control Member, the start of the second BEGINPARALLEL Group is used to end Serial TASK processing. The position of this second BEGINPARALLEL Group is CRITICAL to the overall successful initialization of the Integrity Controls Environment (ICE).

3.14.3.3 Caution

Do not alter the grouping or sequence of these TASKs without consulting with NewEra Technical Support. Doing so could result in unpredictable ICE or Application performance or Application operations.

3.14.4 ICE TASK Descriptions

When IFOM, the master ICE Address Space, is started, it in turn starts a number of subtasks each of which is described below.

3.14.4.1 NSWJSSI - Journal Sub-System

The Journal Sub-System (JSS) manages the interaction of individual Control Editor users (logged on to individual IFOS Address Spaces) and the IFOM Address Space with The Control Journal(s). The primary configurable components that define this interaction are contained in the ICE Configuration Members NSEJRN00 and NSECTL00. Typical interactions would be backups controlled by IFOM and transactions controlled by cooperative processing between the JSS and the Journal Sub-Task (JST).

3.14.4.2 NSWJSTI - Journal Sub-Task

The Control Editor invokes the Journal Sub-Task (NSWJSTI) when a user is actually editing a Control Member. It provides the isolation between individual users and edit sessions necessary to ensure the integrity of the edit processes - retrieve, update, restore and store functions.

In addition, the TASK=NSWJSTI statement is also used to specify the Suffixes of the members that will be used to configure The Control Editor.

Extract From Sample NSEPRM00 found in ICE SAMPLIB

```
TASK=NSWJSTI CTL(00) JRN(00) ENS(00) DET(00) SEL(00) GRP(00)
```

- CTL(xx) - NSECTLxx is used to define the Control Boundaries monitored by TCE. It consists of Named Category and their Datasets.
- JRN(xx) - NSEJRNxx is used to define the TCE Control Journals, Panel Descriptors and activation of various TCE Options.
- ENS(xx) - NSEENSxx is used to control the definitions of Notification Methods - Email, Text - and Action Triggering Notices.
- DET(xx) - NSEDETxx is used to define the set up of the Supplemental Detectors.
- SEL(xx) - NSESELxx is used to define the Access Privileges that will be granted and/or denied to individual users or groups.
- GRP(xx) - NSEGRPxx is used to define TCE Control Groups and their Members. Used in conjunction with NSESELxx Member Level Control.

3.14.4.3 NSWSCTL - Control List Sharing

The Control Editor invokes the Journal Sub-Task (NSWSCTL), if active, to determine the frequency with which it should poll members of the TCE Managed Group for their updates to their NSECTLxx Parmlib member. Updates discovered in one or more Group Members will trigger an update to the Shared Control List and, if necessary, a Backup of new Group Member defined Datasets, or Dataset additions from prior Group Members and new Dataset volume placement for previously Controlled Datasets, will be made.

3.14.4.4 [NSWJCTL - Control Journal Sharing](#)

The Control Editor invokes the Journal Sub-Task (NSWJCTL), if active, to determine the frequency with which it should poll members of the TCE Managed Group to determine which are active, which are still sharing and any new systems that desire to be added to a TCE Added Group. Should the 'Controlling System' fail to poll the Group at the defined time, possibly because it has become inoperable, the first system in the Group to identify its absence will inherit the 'Controlling System' responsibility.

3.14.4.5 [NSWLCTL – Control Logger Sharing](#)

The Control Editor invokes the Logger Sub-Task (NSWLCTL) to determine the frequency with which it looks for partially filled log buffers and writes those buffers to disk. This allows all sharing systems to view the log records in a timely fashion. Too short of an interval may result in poor utilization of the logger dataset. Too long of an interval would result in other sharing systems not seeing the latest log records.

The default setting of NSWLCTL, that is shipped with an install package, is 60. The default value of this parm, if none is specified in the NSEPRMxx member, is 300.

3.14.4.6 [NSWJSCI - Change Detection](#)

The Control Editor invokes the Change Detection Sub-Task (NSWJSCI) when a user selects the "Detect" option from The Control Editor Action Menu.

3.14.4.7 [NSWJCDT - Automatic Change Detection](#)

This Control Editor Change Detection Sub-Task (NSWJSDT) is called hourly when optionally specified in NSEPRM00.

3.14.4.8 [NSWOMST - Event Capture](#)

The Control Editor invokes the Sub-Task (NSWOMST) to perform operational and system management functions such as event capture, as those events are defined by control card settings found in the TCE configuration members NSEJRNxx and NSEENSxx.

3.14.4.9 [NSWCEFM - Interval Scheduler](#)

The ICE Interval Scheduler controls all TCE Background Processes and must be active if Background Reports are to be scheduled, created, stored and distributed.

3.14.4.10 TASK=NSWJSCI LOG Options

Option	Option Description
LOG(ERRORS)	The default setting. Logs any errors in the change detection processor to NSWJLOG
LOG TRACE)	Generates a process trace from the change detection processor to NSWJLOG. Use this only when directed by NewEra support personnel.
LOG(ALL)	Logs both TRACE and ERRORS to NSWJLOG. Use this only when directed by NewEra support personnel.
LOG(NONE)	Turns off TRACE and ERRORS logging

3.14.4.11 Other ICE TASKS in NSEPRM00

From time to time, NewEra Technical Support staff may request that you insert additional statements or modify existing ones in the NSEPRMxx member. This would only be done in order to facilitate troubleshooting in resolving system or site specific problems. It is highly recommended that you make such modifications only under the direction of NewEra Technical staff.

3.14.5 Additional NSEPRM00 Settings

3.14.5.1 ICE VTAM Timing Parameters - VTAMRINT & VTAMRMAX

For customers starting IFO before VTAM is up, setting the following values allow the open of the VTAM ACB to be retried for certain ACB OPEN errors.

VTAMRINT is the interval between retries. The range for this parameter is 1 to 59 seconds. The default value is NEVER RETRY.

VTAMRMAX is the maximum number of retries. The range for this parameter is 1 to 999 retries. The default value is 10 retries.

Note: IFO initialization will be delayed until the successful open of the ACB or until the retry process completes.

3.14.5.2 ICE Dataset Allocation Retry Timing - ALLCRINT & ALLCRMAX

Setting the following values modify the action of dataset allocation retry when a dataset is held by another address space.

ALLCRINT is the interval between retries. The range for this parameter is 1 to 59 minutes. The default value is 1 minute.

ALLCRMAX is the maximum number of retries. The range for this parameter is 1 to 999 retries. The default value is 10 retries.

The Integrity Controls Environment - ICE 19.0

3.15 Additional Configuration Requirements for The Control Editor

If the Control Editor is licensed, follow the steps in this section to ensure its proper function.

3.15.1 External Security Manager Issues

The NSEJRNxx and NSECTLxx UPDATE function, accessed via the Administrator Interface, requires that the following or equivalent changes must be made to the External Security Manager (ESM) settings. In this example, which is specifically for RACF, the “userid” is the TSO user ID for each user that will be given TCE Dynamic Update Authority. (Note, this is not needed for BROWSE or EDIT functionality.)

```
RDEFINE FACILITY NEZ.NSEPARM.** UACC(NONE)
PERMIT NEZ.NSEPARM.** CLASS(FACILITY) ID(userid) ACCESS(READ)
SETROPTS REFRESH RACLIST(FACILITY)
```

3.15.2 Integration of The Control Editor with TSO/ISPF

Before TCE can begin to enhancing dataset boundaries and staff productivity, TCE must be integrated into the TSO/ISPF environment. This integration can be done using a temporary method, best used during a product evaluation, or persistent method, best used once a production state is reached.

3.15.2.1 Temporary Integration

When Temporary integration is selected TSO/ISPF users will need to choose to run either CETSO or CEINIT from the ISPF Command Shell (ISPF Option 6) to experience the benefits of TCE. Note, upon completion of a session the user should use CETERM to terminate The Controls Environment.

Found in the HLQ.SISPCLB2 library these programs MUST be edited during the install so that the dataset names inside the programs match the ones used in the install of ICE.

All of these Rexx programs must be launched from ISPF Option 6, using the following command format:

```
EX `HLQ.SISPCLB2 (CExxxx) `
```

CETSO

This command runs the same Control Editor function as if the user were logged on to the ICE/ISPF environment and displays the Dataset Panel giving the user access to the Category defined datasets by Category Name.

CEINIT

This command sets up the Control Editor Environment and invokes the provided TSO/ISPF EDIT macro. Once active any Controlled Dataset accessed via TSO/ISPF will inherit the control and productivity functions provided by TCE.

CEINIT has the following limitations:

The Delete and Rename events cannot be captured and/or recorded using the CEINIT function. Use either CETS0 or the optional Transparent ISPF setup to capture and record Delete and Rename events. In addition, ISPF Split Screen functions are not supported by CEINIT.

CETERM

Removes the Control Editor environment and the TCE provided ISPF EDIT macro.

3.15.2.2 Persistent Integration

There are many ways to integrate The Control Editor and its functions into TSO/ISPF environment that will make its existence transparent to the TSO/ISPF end user. The method discussed here is one of many. We welcome your comments and feedback on this and other methods of integration you would suggest.

SAMC01A and SAMC01B

The ICE INSTLIB members SAMC01A and SAMC01B contain the instructions and sample job to allocate a dataset and run the ISPF Configuration Utility. It is a best practice to be certain that The Control Editor is functioning correctly within the ICE Environment before you attempt transparent integration into ISPF. To do this, search for the IFO0374I message in the IFOM started task output, an example of which follows:

```
IFO0374I IFOM(STC02149) IS THE DEFAULT SERVER FOR JOURNAL FUNCTIONS.
```

This indicates that The Control Editor installation is valid and functioning. Next, do the following:

Integration Activation

Follow the instructions found in INSTLIB member SAMC01A as summarized below:

- Allocate Datasets to install the ISPF Configuration File. Submit JOB SAMC01B from the INSTLIB dataset and verify a zero completion code.

- Set up a System-wide Edit Macro for The Control Editor. Type “TSO ISPCCONF” on a TSO Command Line and press <ENTER>. Use the ISPF Configuration Utility panel to create/modify settings and build the configuration module.
- Update TSO Logon PROC.
 1. Add the CE-TSO datasets to the library concatenations as detailed in INSTLIB member SAMC01A.
 2. Add the following IFO dataset reference to your TSO Logon PROC:

```
//NSEPARM DD DISP=SHR, DSN=xxx . PARMLIB
```

Where the NSEPARM DD statement references the IFO parmlib dataset; and where 'xxx' is defined to be the HLQ(s) for your installed IFO datasets.
- Verify the installation. First log-off, then return to TSO. Edit a Controlled Dataset and verify that the Control Editor is being used.

3.15.3 Shared Journal Support for The Control Editor

For TCE Shared Journal Support, the following has to be added to System Parmlib GRSRNLxx Member:

We recommend that RESERVES be converted to GLOBAL ENQ's using GRSRNLxx.
The updates required are:

```
RNLDEF RNL(CON) TYPE(GENERIC)  
QNAME(SYSZNEZA)
```

```
RNLDEF RNL(CON) TYPE(GENERIC)  
QNAME(SYSZNEZD)
```

```
RNLDEF RNL(CON) TYPE(GENERIC)  
QNAME(SYSZNEZG)
```

3.16 VTAM Application Definition

The ICE Application Interface is an ACF/VTAM application that requires an assigned APPLID statement in the system VTAMLST. This can be accomplished by:

- Adding an ICE APPL Definition Statement to an existing APPL major node or by adding a new major node to the VTAMLST and adding an ICE APPL Definition Statement to it.
- If the ICE APPL Statements are added to an existing major node, the ACF/VTAM operator must deactivate and then reactivate the major node containing the new APPL Statement.
- If a new major node is added to VTAMLST, then only the new major node needs to be activated.
- If the ICE APPLs are to come up active when ACF/VTAM is started, then whenever a new major node is added, the node name must be added to the ACF/VTAM start list, ATCCONxx,

3.16.1 VTAM APPLID Example

Example VTAM Application ID: nssprfx.INSTLIB(VTAMAPPL)

```

APPLIFO VBUILD TYPE=APPL          APPLICATION MAJOR NODE
*
IFO          APPL    AUTH= (ACQ, NVPACE) ,          RUN EXITS IN SRB MODE
                SRBEXIT=YES,                      USE VTAM FRR
                VTAMFRR=YES,
                EAS=4
*
    
```

In the example, SRBEXIT= YES runs the VTAM EXIT routines of Image FOCUS in SRB mode. VTAMFRR= YES is a required value that allows control to be passed to the VTAM recovery routine in the event of an ABEND in an Image FOCUS EXIT routine. AUTH= NVPACE is the recommended value for the parameter.

3.16.2 Configuring ICE to use VTAM

To configure ICE to use VTAM, update the PARM field in the IFOM Started Task Procedure, as shown below, to reflect the assigned APPLID added to the VTAMLST.

APPL=*name*, where *name* is the name of the VTAM application defined for ICE.

Instructional segment of the IFOM Started Task Procedure:

```

//*-----*
//*          NEWERA IMAGE FOCUS ENVIRONMENT          *
//*          STARTED TASK PROCEDURE                 *
//*-----*
//*          MULTIUSER IMAGE FOCUS PRIMARY ADDRESS SPACE *
//*-----*
//*          NSSPRFX - PREFIX FOR IMAGE FOCUS DATASETS *
//*-----*
//*
//* IFOM      PROC NSSPRFX='IFO.TEST',
//*          PRM='00'                      NSEPRMXX SUFFIX
//*
//* NOTE: MAKE SURE A KEYWORD ENDING COMMA REMAINS IN COLUMN 71
//*       OF THE PARM FIELD OTHERWISE CONTINUATION ERRORS MAY OCCUR
//*
//* IEFPROC EXEC PGM=NSEINIT,
//*          REGION=20M,
//*          DYNAMNBR=350,
//*          PARM='APPL=IFO,ULOG=Y,SUBS=IF01,UMAX=0,ICMD=PX PROFM,SP=IFOS,
//*          PRM=&PRM,VTSB=N'
//*

```

3.17 Installing for Multiple Users

In addition to configuring VTAM as described above, when installing ICE as a VTAM application to support multiple users, configure both the IFOM Started Task Procedure and the IFOS Started Task Procedure as follows.

The primary/controlling address space, IFOM, does not support users directly as it only manages the logons to the IFOS address spaces. Each IFOS address space supports a single user.

3.17.1 Configuring the IFOM Started Task

Copy the IFOM Started Task from the &nssprfx.PROCLIB Dataset to a System PROCLIB Dataset and configure it to meet site standards.

Note the following PARM field keywords:

- SUBS= specify a 1-4 character name for a MVS subsystem that will be created by IFOM. This should be a subsystem name that is not currently in use. The supplied name is IFO1. DO NOT use a name that is the same as one of the IFO procs.

- UMAX= this value must be zero. DO NOT use any other value.
- SP= specify a 1-8 character name for the task that will be started when a user logs on to IFOM. The supplied name is IFOS.

```
//          PARM='APPL=IFO,ULOG=Y,SUBS=IF01,UMAX=0,ICMD=PX PROFM,SP=IFOS,
```

3.17.2 Configuring the IFOS Started Task

Copy the IFOS Started Task Procedure from the &nssprfx.PROCLIB Dataset to a system PROCLIB Dataset and configure it to meet site standards.

Note the following PARM field keywords:

- SUBS= specify the 1-4 character name for the MVS subsystem that was named in the IFOM started task SUBS=IF01. The supplied default name is IFO1.
- ICMD= this keyword is not new to ICE 19.0 but it is now used to control the profile exec that is run at user logon.

Instructional segment of the IFOS Started Task Procedure:

```
//*-----*
//*          NEWERA IMAGE FOCUS ENVIRONMENT          *
//*          STARTED TASK PROCEDURE                 *
//*          *                                       *
//*          SECONDARY (USER) ADDRESS SPACE FOR IMAGE FOCUS *
//*          *                                       *
//*          NSSPRFX - PREFIX FOR IMAGE FOCUS DATASETS *
//*          SPFPRFX - PREFIX FOR IBM ISPF/PDF DATASETS *
//*          *                                       *
//*-----*
//*
//IFO      PROC NSSPRFX='IFO.TEST',
//          SPFPRFX='ISP',
//          PRM='00'          NSEPRMXX SUFFIX
//*
//IEFPROC EXEC PGM=NSEINIT,
//          REGION=80M,
//          DYNAMNBR=1200,
//          PARM='SUBS=IF01,ULOG=Y,SWAP=Y,ICMD=PX PROFM,PRM=&PRM'
```

The supplied value is ICMD=PX PROFM, where PX is the name of the Command Processor and PROFM is the PARM (name of a REXX program) passed to the Command Processor that allocates the ISPF profile and ICE table datasets.

3.18 Starting and Stopping IFOM and IFOS

Having completed all steps outlined above, it is now possible to start the ICE Master Address Space by executing/submitting the IFOM Started TASK PROC.

3.18.1 IFOM

To start the ICE Multi-User Environment, issue the MVS command /F or START IFOM. The IFOM Task will remain active until Stopped.

When stopping IFOM, it is a 'Best Practice' to use the /P or STOP Operator Command and NOT to use the /C or CANCEL Operator Command. Using Stop ensures an orderly shutdown of all Sub-Tasks operating within the IFOM Address Space.

Stopping IFOM will automatically terminate all in-use IFOS Address Space(s).

3.18.2 IFOS

As ICE user(s) Logon to the VTAM APPLID, IFOM automatically activates/starts an IFOS Started Task, one per user. Each IFOS session remains active until the user logs off.

3.19 IFOM Management

Once and while IFOM is active, the following Operator Commands can be used to assist in Address Space management task.

3.19.1 Display of all logged on users

To display a list of users logged onto ICE sorted by userid, via IFOS, issue the MVS command MODIFY IFOM,USERS.

A sample of the command and display output is shown below:

```
F IFOM,USERS
IFO0019I CONNECTION DISPLAY IMAGE FOCUS 19.0 SUBSYS=IFO1
APPL=IFO.
IFO0020I (2) USER TEST01 NODE SC0TCP01 COMMAND PX.
IFO0020I (1) USER TEST04 NODE SC0TCP03 COMMAND PX.
IFO0031I 2 USERS LOGGED ON.
```

3.19.2 Display of all address spaces

To display a list of ICE address spaces (IFOM and IFOS), issue the MVS command MODIFY IFOM,SYS.

A sample of the command and display output is shown below:

```
F IFOM,SYS

IFO0028I SYSTEM CONFIG DISPLAY IFO 19.0 SUBSYS=IFO1 APPL=IFO.
IFO0029I (2) JOBIFOS STEP IFOS USERS=1 USERMAX=1.
IFO0029I (1) JOB IFOM STEP IFOM USERS=0 USERMAX=0.
```

3.20 Installing for Recovery Use

The ability of ICE to create an environment that supports access to ISPF, System Log entries in memory, and the Internal Reader for submitting JOBS when TSO or JES are otherwise unavailable, creates a powerful set of Disaster Recovery tools that should always be active and available. The IFOR started task, with its local console support, allows single user ICE logons for recovery purposes, even when VTAM is unavailable.

The status of the IFOR Started Task is displayed on the ICE Primary Menu as users logon to the VTAM APPLID. If installed and active, the messages will state No/TSO "RUNNING"; if not, it will display No/TSO "DOWN" as shown below.

```
*****
* Background Task: RUNNING *
* No/TSO Recovery: DOWN   *
*****
```

To activate these Disaster Recovery features, you will need to configure the IFOR Started Task, map the ICE, certain ISPF and System Datasets to IFOR, and catalog so that they are accessible when needed for ICE Access and System recovery purposes.

3.20.1 Configuring the IFOR Started Task

Copy the IFOR Started Task Procedure from the &nssprfx.PROCLIB Dataset to a system PROCLIB Dataset and configure it to meet site standards.

Note the following PARM field keywords:

SUBS= Specify the value "NONE".

DYN= Specify the value "Y".

This causes the Image FOCUS &nssprfx.PARMLIB parmlib member NSEDSN00 to be used to allocate datasets.

3.20.2 The IFOR PROC

This proc is a single user IFO that runs with local consoles only. It should be started with SUB=MSTR so that it will come up even if JES2/3 is down. The IFOR proc only has two DD statements, both IFO datasets, so it should come up when a critical dataset is missing, that would cause IFO/IFOM/IFOS to fail. It is recommended that IFOR be started at IPL so that it is available, if needed. In many cases, when a system is having problems, new address spaces are unable to be started.

3.20.3 IFOR Dataset Mapping

The IFOR proc has the //STEPLIB for the IFO load library and //PARMLIB for the IFO PARMLIB. These are required. Additional datasets should NOT be added to the proc. The remaining datasets for IFO, ISPF, etc., are dynamically allocated using the NSEDSN00 member of the IFO PARMLIB. IFO supplies an initial NSEDSN00 member, but it is very likely that you will need to modify it to match site standards for dataset names.

```

EDIT          IFO.IFOT.PARMLIB (NSEDSN00) - 01.00          Columns 00001 00072
Command ==>                                           Scroll ==> PAGE
***** ***** Top of Data *****
**-----* *-----* *-----*
**DDNAME* *VOL * *          DSNNAME          *
** COLS * *COLS* *          COLS            *
** 2-9 * *11- * *          18-61           *
**      * * 16 * *
**-----* *-----* *-----*
* IFO * VOLUME DATASET NAME *
NSEPWORK          *TEMP*
NSEPWRK2          *TEMP*
NSEPWRK4          *TEMP*
ISPPROF           IFO.PROFILE
NSETABL           IFO.SISPTABL
NSETABB           IFO.SISPTABB
NSEPKNDX          IFO.PACKAGE.INDEX
SYSPROC           IFO.SISPCLIB
SYSPROC           IFO.SISPCLB2
ISFMLIB           IFO.SISPMENU
ISPPLIB           IFO.SISPPENU
ISPPLIB           IFO.SISPPNL2
* MVS *
SYSHELP           SYS1.HELP
* ISPF *
SYSPROC           ISP.SISPCLIB
SYSEXEC           ISP.SISPEXEC
SYSHELP           ISP.SISPHELP
ISFMLIB           ISP.SISPMENU
ISPEXEC           ISP.SISPEXEC
ISPPLIB           ISP.SISPPENU
ISPPLIB           ISP.SISPSENU
ISPPLIB           ISP.SISPSLIB
ISPTLIB           ISP.SISPTENU
* SDSF *
ISFMLIB           ISF.SISFMLIB
ISPPLIB           ISF.SISFPLIB
ISPTLIB           ISF.SISFTLIB
* SMP/E *
SYSPROC           GIM.SGIMCLS0
ISFMLIB           GIM.SGIMMENU
ISPPLIB           GIM.SGIMPENU
ISPPLIB           GIM.SGIMSENU
ISPTLIB           SYS1.SMP.OTABLES
ISPTABL           SYS1.SMP.OTABLES
SMPTABL           SYS1.SMP.OTABLES
* ISMF *
SYSPROC           SYS1.DGTCLIB
ISFMLIB           SYS1.DGTMLIB
ISPPLIB           SYS1.DGTPLIB
ISPPLIB           SYS1.DGTSLIB
ISPTLIB           SYS1.DGTTLIB
* RACF *
SYSPROC           SYS1.HRFCLST
ISFMLIB           SYS1.HRFMSG
ISPPLIB           SYS1.HRFPANL
ISPPLIB           SYS1.HRFSKEL
    
```

```
* HCD *
SYSPROC      SYS1.SCBDCLST
ISPMLIB      SYS1.SCBDMENU
ISPPLIB      SYS1.SCBDPENU
ISPTLIB      SYS1.SCBDTENU
```

3.20.4 IFOR - Cataloging Datasets

In order to run Image FOCUS Recovery while JES 2/3 is down, IFOR must be run under the MVS master subsystem. This means that all of the datasets in the Image FOCUS procedure must be cataloged in the MVS master catalog -or- you must specify UNIT=unit and VOL=SER=volume for all of the disk DD statements in the Image FOCUS cataloged procedure. Please keep this in mind when planning and setting up Image FOCUS.

3.20.5 Starting IFOR

To start the Image FOCUS Recovery Environment, issue the MVS command START IFOR,SUB=MSTR.

3.20.6 Stopping IFOR

To stop the Image FOCUS Recovery Environment, issue the MVS command STOP IFOR.

3.21 Installing ICE on a Remote System

The Integrity Controls Environment can be installed on a Remote System or LPAR. For purposes of this discussion, a Remote System or LPAR is defined as an ICE installation that is running the ICE Procedure ICEAGNT, as opposed to IFOM. Such a Remote System or LPAR would not be configured to have access to the ICE Primary Menu and is intended only for creating the environment in which remote ICE Applications can execute, for example, IPLCheck and/or Supplemental Detectors.

3.21.1 The ICE Remote Procedure – ICEAGNT

Once the ALLOC and BUILD jobs have run on a Remote System or LPAR, you will need to locate and edit the NSEPRMID and NSEMSGID Configuration Members that are found in the ICE Parmlib Dataset.

Copy the ICEAGNT procedure from &nssprfx.PROCLIB to a system PROCLIB dataset. Modify the PROC to meet your site standards by specifying values for:

- **NSSPRFX=** One or more ICEAGNT Dataset Qualifiers

- **SPFPRFX=** IBM ISPF dataset prefix
- **PRM=** The suffix of the NSEPRMxx Configuration Member

Instructional segment of the ICEAGNT Started Task Procedure:

```

//*-----*
//*          NEWERA IMAGE FOCUS ENVIRONMENT          *
//*          STARTED TASK PROCEDURE                  *
//*          *                                        *
//* DETECTOR ONLY ADDRESS SPACE                      *
//*          *                                        *
//* NSSPRFX - PREFIX FOR IMAGE FOCUS DATASETS        *
//*          *                                        *
//* SPFPRFX - PREFIX FOR IBM ISPF/PDF DATASETS        *
//*          *                                        *
//*-----*
//*
//AGNT      PROC  NSSPRFX='IFO.IFOB',
//          SPFPRFX='ISP',
//          PRM='ID'                                NSEPRMXX SUFFIX

```

3.21.2 Remote ICE Configuration Members

Once the ALLOC and BUILD jobs have run on a Remote System or LPAR, you will need to locate and edit the NSEPRMID and NSEMSGID Configuration Members that are found in the ICE Parmlib Dataset.

3.21.3 Starting Related Task – NSEPRMxx

The NSEPRMxx Configuration Member determines which TASK will be started when the ICEAGNT Procedure is started: where “xx” is the suffix value that matches the value defined in the ICEAGNT PROC, in this case “ID” on the “PRM=” Keyword. The default value assigned to the “PRM=” Keyword is **ID**. If you intend to change this default value, or any of the other values that appear in the default member, it is best to work with NewEra Technical Support BEFORE you commit the ICEAGNT to production.

This member also contains the **COMPANY Authorization Control Card**. The value that follows the “=” is the License Key you will need to start ICEAGNT. Other License Keys are needed when ICE Applications, other than IPLCheck – Core and the Level-One Detectors, are to be used.

The COMPANY License Key is CPU Model and Serial Number specific, so you will need a unique Key for each physical CPU upon which you intend to run ICEAGNT. NewEra Technical Support will assist you should you require a Key.

```

TASK=NSWJSSI          /* JOURNAL SUBSYSTEM */
TASK=NSWJSTI CTL(00) JRN(00) ENS(00) DET(00) ICETDET /* JOURNAL CTL. */
TASK=NSWJSCI LOG(ERRORS) /* LOG TASK */
TASK=NSWOMST          /* OP CMD LOGGING */
TASK=NSWCEFM          /* FUNCTION SCHEDULER */
TASK=NSTINIT          /* WAKES UP EVERY 3MINS*/
*COMPANY=             /* REQUIRED */

```

3.22 Automated Operations

A command is added to the MVS start up procedures that will start the Image FOCUS IFOR after MVS has been IPLed. Choosing this method of operation will ensure that you gain access to Image FOCUS immediately after MVS has been IPLed but before any major MVS Subsystems, e.g., VTAM, JES and TSO, have started. The advantage to this method is that users gain immediate access to Image FOCUS for fixing problems that may have arisen during the MVS Subsystems' start up procedure.

To include Image FOCUS in the MVS IPL script, add the following command to member COMMNDxx of SYS1.PARMLIB:
(S)TART IFOR,SUB=MSTR

3.22.1 Automatic Console Attach

As an option, a local console may be automatically attached at Image FOCUS startup by specifying the console unit address in the START command. This option eliminates the need to issue a "MODIFY ATTACH" command. To attach a local console at Image FOCUS start time, issue the MVS START as follows:

```
(S)TART IFOR,[/]XXXX
```

OR

```
(S)TART IFOR,[/]XXXX,SUB=MSTR
```

where xxxx is the 3 or 4 digit unit address of the console to be attached.

Note: If a four digit address is used, it must be preceded by a [/].

When this option is used, all MVS MODIFY and STOP commands need to specify the console unit address instead of the address space name. The following example shows how to start and stop ICE using Automatic Console Attach, where a console address of 140 is to be used as a local console.

```
S IFOR,140 (starts ICE)
```

and

```
P 140 (stops ICE)
```

Automatic Console Attach works only for local consoles. VTAM terminals must continue to use the "MODIFY ATTACH" method.

3.23 Master Console Operations

IFOR runs as an MVS started task. To start the address space, enter the following command at the MVS Master console, where XXXX is the 3 or 4 digit console address.

```
(S) TART IFOR, [/] XXXX, SUB=MSTR
```

If the console address is not specified after the Image FOCUS address space is started, you must attach a local 3270 terminal to the address space by issuing the following command from the MVS Master console, where "XXXX" is the 3 or 4 digit console address

```
MODI (F) Y IFOR, ATTACH, XXXX
```

Note: If a four digit address is used for the START command only, it must be preceded by a [/].

Alternately use the following, where "termname" is the name of a VTAM 3270 terminal.

```
MODI (F) Y IFOR, ATTACH, termname, VTAM
```

An advantage of this alternate method is that JES2/3 is not required.

3.24 Starting Multiple IFOR Sessions

ICE can support multiple users by running multiple instances of IFOR as individual started tasks and assigning each task a unique local 3270 terminal address. Each started task must have its own unique Attention Request Index and SUBSYS. A new PROC must be built in SYS1.PROCLIB for each additional started task. Each PROC will need its own copy of:

```
&nssprfx.PROFILE &nssprfx.PARMLIB
```

The number of available attention request indexes limits the number of multiple users. Issue the following commands for each occurrence of the ICE Subsystem that you are requesting:

```
(S) TART IFOx, SUB=MSTR
```

Where "x" is a unique number for the started task.

```
MODI (F) Y, IFOx, ATTACH, nnnn
```

Where "x" is a unique number for the started task and "nnnn" is the console address of the local 3270 terminal used by Image FOCUS.

Each console address must be unique and must represent a non-SNA locally attached 3270 terminal.

3.25 Installing ICE for Background Use

Copy the ICE Background PROC from &nssprfx(IFOBG) to the SYS1.PROCLIB, using any MVS copy utility. Modify the PROC as needed to suit your installation standards. This will allow execution of the Background Monitor started task. Make sure that the &NSSPRFX parameter for the Image FOCUS address space and the Background address space contain the same value. If the Background member name is changed from the default of IFOBG, the PROC parameter on the TASK=NSRINIT statement must be changed accordingly in &nssprfx.PARMLIB(NSEPRM00).

3.25.1 Customizing the Background

Background inspection runs as a separate started task (IFOBG). This allows the selected images that have been defined using the Image Definition Panel to be inspected automatically at a user-defined interval.

The ICE address space must be started at least once, prior to starting the Background task. This is necessary in order to enforce the USERID parameter on the TASK=NSRINIT statement that is described later in this section. If the Background task is not running as a started task, the background job will terminate.

If the Background task is named other than IFOBG, the &nssprfx.PARMLIB member NSEPRM00 must be changed. The supplied NSEPRM00 is shown below:

```
BEGINPARALLEL - The following task attach in parallel

TASK=NSKINIT AUTOINDEX          /* LOCAL 3270 DRIVER */
TASK=NSNLOAD MODULE(IKJEFTSR)   /* AUTHORIZED COMMANDS */
TASK=NSRINIT PROC(IFOBG) START(NO) /* SERVICES TASK */
TASK=NSJINIT                     /* JES CONNECTION */
LOAD=NSECSCI                     /* SUBMIT W/SUB=MSTR */

ENDPARALLEL - The following task attach serially

TASK=NSWJSSI                     /* JOURNAL SUBSYSTEM */
TASK=NSWJSTI CTL(00) JRN(00)     /* JOURNAL CONTROL */
TASK=NSWCTL INTERVAL(360)        /* SHARE CONTROL */
TASK=NSWJCTL INTERVAL(120)      /* SHARE CNTL JOURNALS */
TASK=NSWJSCI LOG(ERRORS)         /* CHANGE DETECTION */
TASK=NSWJCDT                     /* CHANGE AUTOMATION */

BEGINPARALLEL - The following task attach in parallel

TASK=NSWOMST                     /* OP CMD LOGGING */
```

```
TASK=NSWCEFM          /* FUNCTION SCHEDULER */
TASK=FDEMAIN          /* FDE FOR IFO/ISPF   */
```

ENDPARALLEL - The following task attach serially

The TASK=NSRINIT statement contains the name of the Background started task. If a different name is desired, change NSEPRM00 and restart the Image FOCUS address space.

Caution

When making changes to the NSEPRM00 member, do not alter the grouping or sequence of these TASKS without consulting with NewEra Technical Support. Doing so could result in unpredictable ICE or Application performance or Application operations.

The Background task is designed to run all of the time. Any of the background related values could be changed at any time. It is not necessary to stop and start the Background task for changes to become active. However, changes do not take effect until the panel is exited.

3.25.2 TASK=NSWJSCI LOG Options

Option	Option Description
LOG(ERRORS)	The default setting. Logs any errors in the change detection processor to NSWJLOG
LOG TRACE)	Generates a process trace from the change detection processor to NSWJLOG. Use this only when directed by NewEra support personnel.
LOG(ALL)	Logs both TRACE and ERRORS to NSWJLOG. Use this only when directed by NewEra support personnel.
LOG(NONE)	Turns off TRACE and ERRORS logging

3.25.3 Stopping the Background

To stop the Background task, issue an MVS STOP operator command. As long as the Background Task Enabled is set to Y, a start command will be issued when exiting the panel, unless the Background task is already running.

3.25.4 Possible Background Conflicts

If a user is using any of the inspection or report panels, the Background task will not have access to the ISPF tables. It will skip the current interval and try again on the next interval. This should not normally be a problem, if background testing occurs during off-shift hours. If a user attempts to use any of the inspection or report panels while the Background task

is processing an inspection, the user will be presented with a pop-up panel indicating the ISPF tables are in use. The user then has the option to wait for ISPF table access or exit.

3.25.5 Starting the Background

The Background task does not require the ICE address space to be active during the inspection process. The Background task may be started manually, using an MVS START operator command. The Background task may also be started automatically when the Image FOCUS address space is started, by changing the START(NO) to START(YES) on the TASK=NSRINIT statement in NSEPRM00.

To start the Background Task at IPL, use the START(YES) parameter on the TASK=NSRINIT statement and add a start command, for the Image FOCUS address space, to COMMNDxx. IPL will start Image FOCUS and Image FOCUS will start the Background task.

3.25.6 Background and UserId Associations

The Background task may be associated with a UserId using normal security package methods, such as ICHRIN03 for RACF. The UserId needs to have authority to create report datasets. These datasets have a high-level qualifier that is defined using the Image FOCUS panel.

The UserId for the Background task may also be set by adding the USERID parameter to the TASK=NSRINIT statement in NSEPRM00. To make the Background task run with a UserId of IBMUSER, the TASK= statement would look like this:

```
TASK=NSRINIT PROC(IFOBG) USERID(IBMUSER)
```

If there are any security package errors validating the specified userid, then the background job will terminate. If the Background task is already associated with a userid, due to the use of ICHRIN03 or other security package function, and a USERID is specified on TASK=NSRINIT, the background job will terminate.

3.25.7 Background Sharing

The background started task settings are shared by all users. There is only one background started task that processes images added to the background. Since any user can change the background settings, via the BG options panel, one user should be responsible for coordinating updates to those settings.

3.26 Configuring Image FOCUS to Execute as a Batch Job

The Image FOCUS application is supplied with three PROCS that allow inspections to be called as batch job. They are:

- IFOBAT - Runs the z/OS Core Inspection.
- IFOBATA - Runs the z/OS Core + JES, VTAM and TCP/IP Inspection.
- IFOBATS - Runs the z/OS Core Inspection with SYSCAT and IEASYS suffixes defined.

3.26.1 IFOBAT/IFOBATA/IFOBATS

Copy the Image FOCUS IFOBAT PROC from &nssprfx.PROCLIB(IFOBAT) to SYS1.PROCLIB, using any MVS copy utility. Modify the PROC as needed, to suit your installation standards. Add and/or change the defaults for the IFOBAT keywords, if desired, to fit your specific application needs.

In addition to the IFOR and IFOBG PROCS, there is an IFOBAT PROC distributed with Image FOCUS. The IFOBAT PROC must be customized much like the IFOR and IFOBG PROCS as follows:

Enter the prefixes for the IFO datasets and ISPF datasets, then Change the defaults for the inspection keywords.

These values may be supplied or overridden when the proc is executed.

3.26.2 IFOBAT/A/S Keywords

Keyword	*	Functional Description
IPLU	*	4 hex digit unit address of the IPL volume, required
LPRM	*	1-8 character LOADPARM, optional. Will default to MVS LOADPARM in accordance with MVS default rules
HWN	*	1-8 character Hardware name to be used, optional
LPN	*	1-8 character LPAR name to be used, optional
VMN	*	1-8 character VM UserId to be used, optional
MDP		Member Display in report body (N or Y), optional
RLV		Report Message Level (1, 2, 3, or 4), optional
ADDC		Suffix of additional COMMNDxx member, optional
DSR		DSN Report in report body (N or Y), optional
PKG		Package Storing (N or Y), optional – See Restrictions
JX		JES2/3 Inspector (N or Y), optional (IFOBATA only)
CI		CICS Inspector (IFOBATA only)
VT		VTAM Inspector (N or Y), optional (IFOBATA only)
TC		TCPIP Inspector (N or Y), optional (IFOBATA only)

UO		REXX Inspectors (N or Y), optional (IFOBATA only)
RLS		3-digit z/OS release level, optional – See Release Codes (IFOBATA and IFOBATS)
	*	Indicates that a single ASTERISK (*) may be substituted for the actual value. When the ASTERISK is used the actual value for the running system is automatically determined and used as the value of the associated keyword.

Restriction: The Package Store Option is turned on, "Y" or off, "N". This is optional; the default is "N". If this option is selected, the Package Dataset must be allocated, and its name passed to Image FOCUS within the JCL used to call the Inspection Server. The PKG option can be used only by the Image SENTRY application. It does not store packages in the traditional sense.

Release Codes: A 3-digit code identifying the release level of z/OS used to select rules that will be applied during an Inspection.

```

000=pre z/OS,  101=V1R1,  102=V1R2,  103=V1R3,  104=V1R4,
105=V1R5,     106=V1R6,  107=V1R7,  108=V1R8,  109=V1R9,
110=V1R10,    111=V1R11,  112=V1R12,  113=V1R13,  201=V2R1,
202=V2R2,     203=V2R3,  204=V2R4,  205=V2R5,  301=V3R1,
302=V3R2
    
```

3.26.3 Auto Keyword Value Determination

Using the single ASTERISK (*), as the value of one or more of these IFOBAT/A/S KEYWORDS: IPLU, LPRM, HWN, LPN or VMN, will result in its automatic replacement with the associated running system value(s).

3.26.4 Automation Examples

When the IFOBAT proc is invoked as a batch job, or started as a started task, reports will go to the //REPORT DD statement that is set up as a SYSOUT dataset in the PROC. This can be changed to route the reports to a sequential disk dataset and even a GDG if desired.

Multiple IFOBAT PROCS may be set up, each with different default keywords, in the PROC.

When executed from a batch job:

```
//IFORUN JOB 1, 'Image Focus Example', CLASS=A  
//STEP1 EXEC IFOBAT, IPLU=0A80, LPRM='0122CS'
```

If Auto Keyword Value Determination is used

```
//STEP1 EXEC IFOBAT, IPLU=*, LPRM=*
```

When executed from a Started Task:

```
START IFOBAT, IPLU=0A80, LPRM=0A82, RLV=2
```

If Auto Keyword Value Determination is used

```
START IFOBAT, IPLU=*, LPRM=*, RLV=2
```

3.26.5 IFOBAT Considerations

The IFOBAT process bypasses the normal "IFO databases". Therefore, package storing and mail functions are not available. Normal IFO background processing should be used if these functions are desired.

This is a single execution process of one image only. If multiple IMAGES are to be inspected using IFOBAT, multiple executions will be required.

Running IFOBAT requires only READ access security to the IFO datasets. No IFO datasets are updated.

This process will not store Configuration Packages.

This process will not send e-mail. NOTE: Image FOCUS is designed to run in a standard ISPF environment as described in the ISPF Planning and Customizing manual from IBM, where &spfprfx.SISPLPA is in LPALIB and &spfprfx.SISPLOAD is a LNKLST dataset. If your configuration varies from this, please refer to the ISPF Planning and Customizing manual for STEPLIB and/or ISPLLIB requirements.

3.26.6 Image FOCUS Considerations

The following parameters may be used in the Image FOCUS JCL procedure in the PARM field of the EXEC JCL statement:

APPL= The VTAM APPLID is to be used for Image FOCUS ATTACH or direct Logon. See 'Installing Image FOCUS for use with VTAM' for more information. This parameter is optional and must be 1 to 8 characters in length. There is no default for this parameter, so if APPL= is not specified, no VTAM controlled terminals will be used for Image FOCUS.

ICMD= A 1 to 8 character name of the TSO command to be invoked after signing on to Image FOCUS. This value will be displayed on the Image FOCUS logon menu. This parameter is optional. The default value is ISPF.

SWAP= The SWAP parameter specifies the characteristic of the Image FOCUS address space to MVS. The following options are available:

SWAP=N The Image FOCUS address space will run non-swappable at all times. This is the default.

SWAP=Y The Image FOCUS address space will run swappable, unless some MVS service routine makes the address space non-swappable.

SWAP=C Image FOCUS will perform as if SWAP=Y was specified until a terminal is activated, via an Image FOCUS ATTACH command, or a Direct Logon is done. Then Image FOCUS will operate as if SWAP=N was specified.

For maximum availability, Image FOCUS Recovery, IFOR, should run with the default of SWAP=N, so that Image FOCUS Image Access Facilities are always available.

ULOG= Controls the Direct Logon Feature of Image FOCUS.

ULOG= N, the default, disables the Direct Logon Feature and the Image FOCUS ATTACH command must be used to activate the terminal.

ULOG= Y enables the Direct Logon Feature and allows both VTAM USS LOGONs and ATTACH commands to be used.

This parameter has no meaning if LOCAL console (non-VTAM) terminals are being used.

USER= This parameter is used only with IFOR, as a method of supplying a USERID on the Image FOCUS Logon Panel, so that the user does not need to type in the USERID on each logon. If this parameter is supplied, the user will still be allowed to change the USERID on the panel, if desired. The value for this parameter must be a 1 to 8 character USERID. This parameter is optional and there is no default.

TASK= statement to initialize the Local 3270 functions. Customize Member &nssprfx.PARMLIB NSEPRM00 to comply with installation standards. The supplied TASK= statement follows:

```
TASK=NSKINIT AUTOINDEX SUBSYS(NSE0)
```

NSKINIT= the name of the Local 3270 initialization module.

INDEX= the MVS Attention Index to be used.

AUTOINDEX= an alternative to the INDEX keyword. If used, it will attempt to dynamically locate an available MVS attention index for Image FOCUS use. Note: AUTOINDEX is specified on the NewEra supplied TASK=NSKINIT statement when Image FOCUS is installed.

SUBSYS= a dynamically built MVS subsystem name. NSE0 should be used unless there is another MVS subsystem with that name.

3.27 Improved Performance with VLF Caching

Performance may be improved, especially for users of the Supplemental Inspectors, if the user catalog associated with the high-level qualifiers for Image FOCUS, is subject to VLF caching. In our test/development environment, we have our user catalog set up in a COFVLFxx parmlib member as follows:

```
CLASS NAME (IGGCAS)
      EMAJ (CATALOG.VVPWRKG)
      MAXVIRT (512)
```

To see if the catalog is using VLF caching, a catalog display command is used:

```
F CATALOG,REPORT,CACHE
IEC351I CATALOG ADDRESS SPACE MODIFY COMMAND ACTIVE
IEC359I CATALOG CACHE REPORT 427
*CAS*****
*   HIT%  -RECORDS-  -SEARCHES  --FOUND--  -DELETES-  -SHR UPD-  --PURGE-- *
*
*   CATALOG.VVPWRKG                                (VLF)
*   92%      612      93,077      86,399      2,401      0      0 *
```

3.28 Individual Users

All users in IFO Multi-User have their own ISPF profile and Image FOCUS tables. This allows each user to set up unique IMAGE Definitions, Reports, and ISPF settings. The ISPF profile dataset, and the Image FOCUS table dataset, are allocated using the PX (profile exec) Command Processor. PX is the default Command Processor that runs as the first command, when a user logs on to Image FOCUS. PX runs the REXX program, PROFM. PROFM allocates new datasets or uses existing datasets, if they were created by a prior execution of PX. Customers may customize PROFM to meet specific site standards.

3.29 Post Installation Tasks

Having successfully completed the installation steps described above, you are ready to build a Licensed Copy of Image FOCUS, configure Image Packages, enable/disable the alternate password, add 3270 Attention Exits and activate product options that support the automated startup of IFOM and IFOR, multi-user use of IFOR and the automation of background IMAGE Inspections.

NOTE: These post-installation tasks will only need to be completed if you utilized the Self-Authorized version of the download link. If you used the Fully Pre-authorized version of the download link, no modifications to PARMLIB member NSEPRM00 will be necessary.

3.29.1 Creating a Valid Copy

Customize &nssprfx.PARMLIB Member member NSEPRM00 by adding the license codes that were supplied by NewEra Support. Member NSEPRM00 is contained in the &nssprfx.PARMLIB dataset.

3.29.2 Licensed Copy

Add the following lines to member NSEPRM00: In the example below, “cccccccccccc”, “aaaaaaaaaaaaa” and “xxxxxxxxxxxxx” are the license codes that were supplied by NewEra Software. The license code for the Image FOCUS Core is identified as LTAUTH=. The base authorization code, for each CPU that is licensed, is identified as AUTHc0= where c is an ordinal value between 1 and 8 identifying a specific licensed CPU. The options are subsequently identified as OPTHcn=, where c is the ordinal CPU number and n is a number between 1 and 8 designating which option is licensed. Licensing options are:

- | | |
|-----------------------------|--------------------------------------|
| 1 - Subsystem Inspectors | 5 – Health Checker |
| 2 - Supplemental Inspectors | 6 – New Release Analysis (Workbench) |
| 3 - Production View | 7 – The Control Editor |
| 4 – Recovery View | 8 – Fast DASD Erase |

Sample license code formatting:

```
COMPANY= your company name
LTAUTH=cccccccccccccc (UPDATE BY:xx/xx/xx)
AUTH10=aaaaaaaaaaaaaa (SERIAL Number/MODEL/TYPE) (Begin in column 1)
OPTH11=xxxxxxxxxxxxxxx (Subsystem Inspectors)
```

3.29.3 Evaluation Copy

If you are evaluating Image FOCUS on a trial basis, add the following lines to &nssprfx.PARMLIB Member member NSEPRM00. In the example below, “cccccccccccc” is the evaluation code for the Image FOCUS Core, “aaaaaaaaaaaaa” is the Trial Authorization Code and “xxxxxxxxxxxxx” represents the options (in this example, the Subsystem Inspectors).

```
COMPANY= your company name
EVAL00=cccccccccccccc (IFO - EXPIRES:xx/xx/xx)
AUTH10=aaaaaaaaaaaaaa (SERIAL Number/MODEL/TYPE) (Begin in column 1)
EVAL01=xxxxxxxxxxxxxxx (SSI - EXPIRES:xx/xx/xx)
```

3.29.4 Alternate Security Password

If you would like to Enable/Disable Alternate Security, you will need to customize Member NSEPRM00, contained in the &nssprfx.PARMLIB dataset.

To Enable/Disable Alternate Security, add the following line to member NSEPRM00: ALTPASS=ENABLE or DISABLE (Begin in column 1)

The default password is DISABLE; to obtain the Alternate Password, contact NewEra Software Technical Support by using one of the following:

1-800-421-5035 or 408-520-7100
Email: support@newera.com

3.29.5 3270 Attention Exits

Attention exits are supported, in a limited fashion, for command processors that use the STAX service. Attention exit processing may operate differently than in real TSO. This support was designed to allow automatic SDSF screen updates to be interrupted.

3.29.6 Security and Usage Accountability

This section describes the type of security and accountability Image FOCUS utilizes to allow user access to its functions. Image FOCUS does not bypass any of the security and auditing features of MVS.

3.29.6.1 System Security

Image FOCUS utilizes the standard Security Access Facility (SAF) interface used by the major MVS security products, (e.g., RACF, ACF2, Top Secret). It allows the Image FOCUS user to utilize currently assigned passwords, or the same user ID used, for access to TSO. The security level assigned to Image FOCUS is the same level as the security level assigned to the user ID.

3.29.6.2 Alternate Password

In the event that the security system address space is unavailable, or the security system is inoperable, an alternate password may be used to access Image FOCUS. As an option, the alternate password can be Enabled/Disabled during installation. To obtain the Alternate Password, please contact NewEra Technical Support by using one of the following:

1-800-421-5035 or 408-520-7100
Email: support@newera.com

3.29.6.3 Accountability

MVS provides accountability for Image FOCUS via SMF and other generally available system reporting tools. This allows records of the appropriate type to be written to the SMF log. These records can then be processed using the site's existing system tools.

3.29.6.4 Dataset Security

The Image FOCUS datasets should be protected, using the appropriate security facilities, to prevent unauthorized access.

3.29.7 Configuring to Store Packages

Packages are automatically built by the Image FOCUS background task, so the background Image Inspection started task IFOBG must be set up. There are three DD statements in the IFOBG JCL that support package building. They are:

NSEPKNDX is used to define the package index. The index is a PDS and has one member for each unique IMAGE name. Each member contains a record that describes the name and location of a package PDS. This dataset is allocated during Image FOCUS installation and this dataset must NOT be a PDSE (see below).

NSEWORK is used to define a work dataset that is used to build a package during Image Inspection. This dataset is a sequential dataset that is allocated in the IFOBG JCL.

NSEMODE is used to define the attributes for allocating PDS datasets for storing the Image packages. This is not a real dataset, just a model of the dataset that will be allocated by the background task when a new Image PDS is required. The DSNAME on the DD statement contains the characters "\$IMAGE" at the end of the DSNAME. This will be replaced with the Image name, when the Image PDS is allocated.

3.29.8 Email Option

The Mail Option requires authorization to use TCP/IP services under z/OS by defining a RACF OMVS segment; your installation may have a default OMVS segment defined and no further customization may be needed. If you receive an ICH408I message, indicating that no OMVS segment was defined when running Mail functions, then the OMVS segment has not been set up properly.

To use the Mail Option to send Inspection Reports from IFOBG, you will need to configure the Mail Options and select the Mail Option from the Background Options Menu.

3.29.9 Configuring Email

To configure or re-configure the Mail Settings, from the ICE Main Menu, select the “WorkView” option, then select the “Settings” option, and then the “EmlNotes” option. The Workbench Email Notification panel will appear.

3.29.9.1 Mail Settings

```

                                IFO 19.0 - Workbench Email Notification

Server Settings:
Mail Server      (Name or IP address of SMTP server)
===> MAIL.LIVEZONE.NET
From            (Email address)
===> SUPPORT@NEWERA.COM
Primary
Destination     (Email address)
===> PAT@NEWERA.COM
Secondary
Destination     (Email address)
===>
TCP/IP          (Name of TCP/IP service or blank for default service)
===>
Timeout        (Timeout in seconds for TCP/IP operations)
===> 060
SMTP Port      (Port for SMTP connection or blank for default port)
===>
Prompt         (Always prompt for Mail Settings Y/N)
===> N
    
```

Enter or overtype the values for the following mail configuration variables:

3.29.9.2 Mail Server

This is the fully qualified name of the SMTP server that will be used to send the mail.

3.29.9.3 From Address

This is the email address of the person, organization, or server that is sending the mail or designated to receive acknowledgement. The IFO Report Server will automatically respond to this address with an “Acknowledgement” of receipt noting the success of the upload. In the event the Server is unable to complete the upload, it will note the reason for the failure in the acknowledgement.

3.29.9.4 Primary Destination

The Primary Destination or default destination of Inspection Reports sent using the “M” Function should be SUPPORT@NEWERA.COM, a NewEra Software supported and maintained Web Site. However, this value maybe overtyped with any valid email address.

3.29.9.5 Secondary Destination

The Secondary Destination may be any valid email address. Inspection Reports arrive embedded as text in the main body of the email and as an attached file.

3.29.9.6 TCP/IP

This is the name of the TCP/IP address space. It may be left blank if the default address is used.

3.29.9.7 Timeout

This is the value of the TIMEOUT in seconds that will be used as Image FOCUS waits for confirmation of contact with the receiving entities.

3.29.9.8 SMTP Port

This is the value of the port used for SMTP connection. Leave this field blank to use the default port number.

3.29.9.9 Prompt

Workbench Email Notification may be accessed at several locations. If you wish to change the Email Settings before sending an email, for example the Primary or Secondary recipients, set the value of Prompt to 'Y'. This will result in a prompt for settings update being issued each time this email is requested within Workbench.

3.29.10 Message Management

Image FOCUS Inspection Reports detail the state of each inspection action and inspection result using an 8-character message number. This message number is composed of three independent elements: positions 1-3 are the Inspector Identifiers, positions 4-7 are the Message Numbers and position 8 is used to denote Message Severity. Message Severity levels include: “I” to indicate an Information message, “N” to indicate a Notice message, “W” to indicate a Warning message, and finally “E” to denote an Error message. A string of descriptive Message Text follows each Inspection Message to help amplify in meaning. The Inspection Report lines below show these relationships and an ERROR being reported by message number IFO0615E.

```

IFO0935I SEARCHING FOR BPXPRMMS MEMBER.
IFO0940I BPXPRMMS FOUND IN PARMLIB(1) VOL=VTMVSG;DSN=SVTSC.PARMLIB.
IFO0675I BPXPRMMS LAST CHANGED DATE=2021/08/01 TIME=14:32:46 USER=IBMUSER.
IFO0923I BPXPRMMS MEMBER CONTENTS ARE AS FOLLOWS:
|-----1-----2-----3---TOP OF MEMBER---5-----6-----7-----
|/*****
|/* Copy from CSQ700.SVSC.CUSTOM.INSTALL(BPXPRMMS) to
|/* VENDOR.PARMLIB(BPXPRMMS) .
|/* Update VENDOR.PARMLIB(IEASYSVN) OMVS=(OM,VN), to add MS --->
|/* OMVS=(OM,VN,MS)
|/*****
|MOUNT FILESYSTEM('CSQ700.MQM.HFS')
| TYPE(HFS)
| MODE(READ)
| MOUNTPOINT('/usr/lpp/mqm/v7R0M0')
IFO0615E UNBALANCED COMMENTS DETECTED.
IFO0718I SEARCHING FOR HFS DATASET(S) .
IFO0724I CATALOG NAME FOR CSQ700.MQM.HFS IS CATALOG.CSQ700.
IFO0998I CSQ700.MQM.HFS FOUND ON VOLUME VTMQ7A.
    
```

All Inspection Message severity is based on published IBM documentation, industry and customer experience. By default, they are considered “Technically Correct”, deserving of serious attention and ignored at the risk of losing system integrity. These cautions notwithstanding, based on specific site experiences and unique site requirements, users may wish to alter these message severities. This can be accomplished by using the optional NSEMSG00 PARMLIB member.

In the Inspection Report lines shown above, take note of the ‘IFO0615E’ message. If it is considered appropriate to change this message from a severity of ERROR to a severity of WARNING, insert the following message syntax into the NSEMSG00 PARMLIB member.

```

IFO0615E(W)
    
```

In certain circumstances, it may be desirable to limit the message severity change to only those cases that are further qualified by all or a portion of the content of the message text that is associated with the Inspection Message.

In the first example, shown below, the message severity is changed from a WARNING to NOTICE, but only if the word `PROCEDURE TCPIP` is also found in the message.

In the second example, the message severity is changed from a WARNING to an ERROR, but only if the prefix `SYS1` is found in the message.

```
IFO0983W(N) ' PROCEDURE TCPIP '  
IFO0749W(E)      ' SYS1'      /* find SYS1 Datasets */
```

When message text is used as a qualifier, the string to be matched with the text must be enclosed in single quotes. The quoted qualifier may appear anywhere in the message text between columns 13 through 71.

If the string to be matched contains a single quote, then place two single quotes in succession to represent a single quote as shown in the example below.

```
IFO0796E(W)  'LET'S GO'  /* match LET'S GO */
```

The increase or decrease in message severity that results from the use of NSEMSG00, along with all reported ERROR, WARNING and NOTICE messages, and the entire NSEMSG00 member, are reported in the Message Summary Report. The Message Summary Report is linked to the Inspection Report Index using the label MSS_RPT.

There may be times when you would like an Information Message, an "I", which would not normally be included in the Message Summary, to appear. To accomplish this, code the desired message severity the same as the old. In the example below the text is presented for amplification of the related Information Message text only and is not necessary.

```
IFO0940I(I) LOADW1 FOUND IN IPLPARM(0) VOL=VPMVSB;DSN=SYS1.IPLPARM.
```

3.29.10.1 NSEMSG00 SYNTAX Rules

The entire line may be made a comment by placing an asterisk in column 1.

- Comments may be added to any line, with or without a string, and may appear before or after the string.

A blank in column 1 on any line of NSEMSG00 will cause a syntax error.

The actual Inspection Message to be changed must begin in column 1 and end in column 8.

- The desired message severity: I, N, W or E must be preceded by “(“beginning in position 9 followed by the new severity and then followed by “)” in position 11.

3.29.10.2 NSEMSG00 Limitations

Message Filtering/Changes has certain limitations. Currently message IFO0909E cannot be changed.

4 ICE Definitions and Settings

Definitions/Migration/Control Aids

```

                                IFO 19.0 - Definitions/Migration/Control Aids

C  CustDefs  .. - Define Custom Inspectors/Apps          Userid   - PROBI1
M  Migrates  .. - Migrate Definitions & Settings        Time     - 09:32
I  ICEAdmin  .. - Set Admin/User Access Controls        Sysplex  - ADCDPL
                                           System   - ADCD113
                                           IFOh1q  - TEST
                                           Image Focus 19.0
                                           Patch Level P0

X  Exit      - Return to the TCE Primary Menu

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```

4.1 CustDefs - Custom Inspectors and Applications

A Custom Inspector is one of two unique inspectors you define (in addition to the LOAD Module and/or Member Inspector) that can be included and run inline with Sysplex, Image and New Release Inspections.

1. A parm field from the JCL is passed to an inspector, and
2. An "Include member from the system PARMLIB concatenation".

4.1.1 Custom Inspector Selection

Selecting option 'C' from the Definitions & Settings Menu will display the Custom Inspectors & Applications Selection Screen.

```

                                IFO 19.0 - Defined Inspectors/Applications
Option ==>

I  Inspect  .. - Custom Inspection Interface          Userid   - RFAUL1
A  UserApp  .. - Custom Application Interface        Time     - 08:20
                                           Sysplex  - ADCDPL
                                           System   - ADCD11
                                           ApplId   - TEST
                                           Image Focus 19.0
                                           Patch Level P0

X  Exit      - Return to the TCE Primary Menu
    
```

Selecting option 'I' from the Custom Inspectors & Applications Settings Menu will display the Custom Inspectors Selection Screen.

```

                                IFO 19.0 - Custom Inspector Selection                                Row 1 to 5 of 5

Line Commands:
  S - Select Definition  D - Disable (Clears Definition)

LINE  INSPECTOR  STATUS
CMD   NAME      ----- TITLE -----
..   LOAD      ENABLED   LOAD MODULE INSPECTOR
..   MBRS      ENABLED   PDS MEMBER INSPECTOR
..   CSDS      ENABLED   CICS CSD INSPECTOR
..   CUST1     DISABLED
..   CUST2     DISABLED
***** Bottom of data *****
    
```

To define a Custom Inspector, place an "S" on the selection line before CUST1 or CUST2. To update the location of the installed LOAD Inspector that you have downloaded from the NewEra Web Site, place the "S" before the Inspector Name LOAD. Now press enter to display the Custom Inspector Definition Screen.

4.1.2 Custom Inspection Definition

Custom Inspector Definition Screen

```

                                Image Focus Define Custom Inspection

COMMAND ==>

Inspector Name   : CUST1      (Name of Inspector)
Inspector ID    : U3        (2-Character Inspector ID)
Inspector Title ==>
                                (1 to 32 Character Title)

Configuration File (Required)
Source DDNAME  ==>          (Configuration File DD in JCL)
V-Format Recs ==> N        (Allow variable length records in source Y/N)
Sequential Type ==> N      (Source is sequential or PDS w/Member Y/N)

Setup (Optional)
Program Name   ==>          (PGM= in JCL of component to be inspected)
Panel Suffix   ==> 2        (Component Inspector panel suffix)

INSPECTION PROGRAM (Optional)
Load Module Name ==>
- OR -
Rexx Program Name ==>
Rexx Program Resides in:    (fully qualified Data Set Name)
Data Set Name ==>
Volume Serial ==>
    
```

To define a custom inspector, provide the required Name, ID and Inspector Title. Next, provide the name of the source dataset, its format, and the optional program name (PGM=),

if any, that will appear in the JCL used to start the subsystem that is the target of the inspector.

If a custom inspection application is written in assembler or REXX exits are to be used, place its program name in the appropriate Inspection Program Name field. PFK3 and the Custom Inspector Settings are saved and become available to the Sysplex, Image, Release and Subsystem Inspection Definition Screens.

4.1.3 Defining Custom Applications

User-created or "Plug-in" applications, that generate Custom Report(s), can be added to Image FOCUS at any time and accessed directly via the Image FOCUS user interface.

4.1.3.1 Custom Report Selection

You may define up to seven Custom Applications. To add or modify a Custom Application Definition, select option A from the Custom Inspectors and Applications panel. This action will immediately display the Custom Application Selection Screen.

```

                                IFO 19.0 - Custom Application Selection          Row 1 to 12 of 12
Line Commands:
  S - Select Definition      D - Disable (Clears Definition)

LINE  APPL      INDEX      REXX      STATUS
CMD   NAME      CMD        PGM
..  INDEX      SF         NSIMNDE  ENABLED  REPORT INDEX TOOLS
..  CEDIT      HS         NSIMCEA  ENABLED  CONTROL EDITOR TOOLS
..  ISNBASE    IB         ISNBASE  ENABLED  ISNBASE
..  ISNEDIT    ED         ISNEDIT  ENABLED  ISNEDIT
..  ISNDASD    DA         ISNDASD  ENABLED  ISNDASD
..  NSIMVUE    IV         NSIMVUE  ENABLED  IPLCHECK VIEWER
..  CUST1      .          .        DISABLED
..  CUST2      .          .        DISABLED
..  CUST3      .          .        DISABLED
..  CUST4      .          .        DISABLED
..  CUST5      .          .        DISABLED
..  CUST6      .          .        DISABLED
***** Bottom of data *****

```

4.1.3.2 Custom Application Definition

To define a Custom Application, put an S on the command line next to the Application you wish to define and press Enter. This action will display the Define Custom Application panel. Using this screen, you define to Image FOCUS the name, location, commands, and points of entry that will be used to access the application that will be used to create the Custom Application.

4.1.3.3 Line Commands

The defined application/report can be called using one of six possible line commands, from either foreground or background operations, including the Inspection Report Index. The assigned commands MUST be represented by 2 UPPER CASE Characters.

```

                                IFO 19.0 - Defining a Custom Application

APPLICATION IDENTIFICATION:
Name    ==> CUST1              (Name of Application)
Title   ==>                               (1 to 32 Characters)
APPLICATION PROGRAM:
Line Command Characters          (2 Character Line Commands)
==>    ==>    ==>    ==>    ==>    ==>
Rexx Program Name ==>          (7 Characters)
Rexx Program Resides in:        (A Fully Qualified DataSet Name)
Data Set Name ==>
Volume Serial ==>              (Optional)
APPLICATION REPORTS:
Indexed Report Member Select, extracts full report N (Y/N)
Indexed Report Members Allowed:
==>          ==>          ==>          ==>
==>          ==>          ==>          ==>
==>          ==>          ==>          ==>
Inspection Reports Allowed: (Y/N)
Workbench: Sysplex              ==> N      Sysplex Release ==> N
           Single Image         ==> N      Component         ==> N
Controlled: Sysplex             ==> N

COMMAND ==>
    
```

4.1.4 Application Interface Examples

All custom Inspectors and/or Reports must be called by Image FOCUS via a REXX application.

4.1.4.1 Calling Source

Since Report Applications defined to Image FOCUS may be called by their own "Native Interface" via TSO, it may be important for your application to distinguish which interface is actually making the call. Since Image FOCUS will QUEUE parameters to the application via the stack, one way to determine the calling source is to determine if there is data in the QUEUE. The following sample can be added to make this determination.

```

/*****
/* Determine Application Environment TSO vs IFO          */
/*****
debug = QUEUED()

IF debug = 0 then      /***** NO DATA ON THE STACK STACK -TSO *****/
    STANDALONE = 1
ELSE STANDALONE = 0   /***** Get Report DSN from the STACK -IFO *****/
    
```

4.1.4.2 QUEUED Parameters

If you determine that Image FOCUS has QUEUED parameters to the stack, you may want to PULL them and use them individually in your application. To PARSE the stack and PULL these parameters into your application, add the following REXX Statement.

```

PARSE PULL REPDSN REPDDN REPMEM REPIFRL REPTITLE REPCMD REPTYPE REPRSLT REPSEG .
    
```

A sample Custom Inspector can be found in the INSTLIB member SAMREXX. Note that REPCMD, as shown in the example below, is the Line Command that you entered to call the application. Image FOCUS supports up to six such Line Commands calling the same Application. It is recommended that you use these various possible commands as needed to call specific sub-routine functions or reports within your application.

```

/*****
/****   Get the Current Inspection Report from IMAGE Focus   ****/
/*****
PARSE PULL REPDSN REPDDN REPMEM REPIFRL REPTITLE REPCMD REPTYPE REPRSLT REPSEG .
/*****
/*When the program gets control the first item on          */
/* the stack will be the parameters passed from the        */
/* higher level routine.                                   */
/*                                                         */
/* Parm 1 (REPDSN) is the dataset name or the string N/A.  */
/* Parm 2 (REPDDN) is the ddname or the string N/A.        */
/* Parm 3 (REPMEM) is the related member name or the string N/A. */
/* Parm 4 (REPIFRL) is a 20-byte string that contains the Image */
/* Focus release level information.                          */
/* Parm 5 (REPTITLE) is a 32-byte string that contains the Report */
/* Title from the custom report definition.                  */
/* Parm 6 (REPCMD) is a 2-byte line command used or ** if called */
/* from the Custom Analysis function.                        */
/* Parm 7 (REPTYPE) is a 2-byte report id to identify the source */
/* of the report:                                           */
/* FI -Foreground Image inspection                          */
/* FR -Foreground Release inspection                        */
/* FX -Foreground Sysplex inspection                       */
/* FY -Foreground Subsystem inspection                     */
/* BI -Background Image inspection                         */
/* IX -Indexed Report                                      */
/* Parm 8 (REPRSLT) is Inspection Result                    */
/* E -Error                                                */
/* W -Warnings                                              */
/* N -Notice                                                */
/* S -Success                                               */
/* Parm 9 (REPSEG) is cluster number                        */
/* 0 -Is not a cluster style report                         */
/* n -Is the relative report number -REPSEG                */
/*****

```

4.1.5 Returning to Image FOCUS

It is highly recommended that you return control to Image FOCUS via a RETURN in your REXX application and NOT an EXIT.

4.2 Migrates - Migration Definitions and Settings

The migration tool is used to copy Image FOCUS customized data from one Image FOCUS release to the next. The use of the migration tool is an optional step in the installation process that is used to:

Migrate Background and Foreground data when using the Image FOCUS IFOR Recovery mode of operation;

Migrate individual user data tables when using the Image FOCUS IFOM/IFOS Multi-user mode of operation.

Each user must do the migration of their individual data using this menu option.

4.2.1 Migration Tool

The Migration Tool allows Image FOCUS settings to be imported and exported. This accomplishes the following:

- Saves Image FOCUS settings when a new release of Image FOCUS is installed;
- Saves Image FOCUS settings when certain fix packages for Image FOCUS are installed;
- Saves Image FOCUS settings when an existing release of Image FOCUS is re-installed;
- Copies Image FOCUS settings from one user to another.

```
IFO 19.0 - Migrate Definitions - Import/Export

I  Imports  .. - Import Definitions and Settings      Userid   - RFAUL1
E  Exports  .. - Export Definitions and Settings      Time    - 09:59
                                           Sysplex - ADCDPL
                                           System  - ADCD113
                                           ApplId  - TEST
                                           Image Focus 19.0
                                           Patch Level P0

X  Exit      - Return to the TCE Primary Menu

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Option ==>
```

4.2.1.1 Export

The export function saves Image FOCUS settings by category.

```

                                IFO 19.0 - Export Configuration Settings

WORKBENCH DEFINITIONS:
  Sysplex Inspection           ==> Y      (Y/N)
  Release Inspection           ==> Y      (Y/N)
  Component Inspection         ==> Y      (Y/N)
  Mail Options                 ==> Y      (Y/N)

PRODUCTION DEFINITIONS:
  Inspection                   ==> N      (Y/N)
  Options                      ==> N      (Y/N)
  Mail Options                 ==> N      (Y/N)
                                -----
                                |Note: The Control Task |
                                |should be down if |
                                |Controlled Definitions |
                                |are being exported. |
                                -----

CUSTOM DEFINITIONS:
  Custom Inspection            ==> Y      (Y/N)
  Custom Application           ==> Y      (Y/N)
    
```

Each category of settings will be saved in its own sequential dataset. The high-level qualifier for each dataset is specified in the FG (Foreground Options Panel) in the Import/Export Dataset field. The default is &SYSUID.IFOWK.IXPORT. The categories and associated dataset names are described below.

4.2.1.2 Foreground Definitions

&SYSUID.IFOWK.IXPORT.IMAGE	Sysplex Inspection
&SYSUID.IFOWK.IXPORT.SYSPLEX	Release Inspection
&SYSUID.IFOWK.IXPORT.RELEASE	Subsystem Inspection
&SYSUID.IFOWK.IXPORT.SUBSYS	Custom Inspection
&SYSUID.IFOWK.IXPORT.CIMAGE	Custom Report
&SYSUID.IFOWK.IXPORT.CREPORT	Mail Options
&SYSUID.IFOWK.IXPORT.FGMAIL	

4.2.1.3 Background Definitions

&SYSUID.IFOWK.IXPORT.BIMAGE	Background Options
&SYSUID.IFOWK.IXPORT.BOPTION	Mail Options
&SYSUID.IFOWK.IXPORT.BGMAIL	

These datasets will be allocated by the export function if they do not exist. If the datasets do exist, then they will be overwritten.

4.2.1.4 Import

The import function reads Image FOCUS settings by category from a previous export.

```

IFO 19.0 - Import Configuration Settings

WORKBENCH DEFINITIONS:
IMAGE/SYSPLEX Inspection ==> N      (Y/N)
Release Inspection       ==> N      (Y/N)
Component Inspection     ==> N      (Y/N)
Mail Options             ==> N      (Y/N)

PRODUCTION DEFINITIONS:
Inspection               ==> N      (Y/N)
Options                  ==> N      (Y/N)
Mail Options             ==> N      (Y/N)
-----
|Note: The Control Task |
| should be down if    |
| Controlled definitions |
| are being imported.  |
-----

CUSTOM DEFINITIONS:
Custom Inspection        ==> N      (Y/N)
Custom Application       ==> N      (Y/N)
    
```

4.2.1.5 Migration from a Release

Image FOCUS settings, for Release IFO 19.0 and more recent releases, can be exported and imported into any future Image FOCUS Release.

4.2.1.6 IMPORT/EXPORT Datasets

IMPORT/EXPORT Datasets are, by default, stored using the following dataset naming convention.

- 1st Level Index ==> &SYSUID
- 2nd Level Index ==> IFOWK
- 3rd Level Index ==> IXPOR

If this does not fit your individual or site standard, you will need to access the Foreground Options Menu via the Workbench View and change them as needed.

4.2.1.7 Operational Considerations

Foreground Settings are not available for migration since they control the migration settings. Although Custom Inspector settings may be migrated, Image Definitions with Custom Inspectors defined to run in background must be manually deleted from background and re-added to background in order for custom inspections to run.

Background definitions are shared among all users. Only one user should be migrating background categories. The background task should be down while doing an Export or Import so the Migration Tool may have exclusive access to the background datasets.

4.3 ICEAdmin – Set Admin/User Access Controls

The Integrity Controls Environment (ICE) offers users a unique set of system inspection, system reporting, and background processing features. However, some features may not be useful or advisable for all ICE users. The 'ICEAdmin' Option will help in creating custom user interfaces that provide only the functions ICE users require.

Entering the Production View for the first time under this release, the following Pop-Up message will appear.

```

    ◇-----◇
    ◇           IFO 19.0 - ICE Dialog Access - WARN Mode           ◇
    ◇                                                                 ◇
    ◇           Temporary Access to this ICE Dialog Services Granted. ◇
    ◇-----◇
  
```

This message is intended to notify ICE users of their level of Application Access and the Control Mode under which their access is being granted – DENY|WARN|NONE. By default, all users are allowed access to ALL ICE Applications as Control Mode, by default, is set to 'WARN'.

The functional options accessed from the ICE Administrator/User Controls Panel are used to control/modify settings, name ICE Administrators, establish Global Control Mode, define user Application Access Rights, and review user Application usage. Panel-Specific Help is available by pressing PFK1.

ICE Administrator/User Controls:

```

    IFO 19.0 - ICE Administrator/User Controls

    I  SetAdmin  .. - Authorize ICE Administrators           Userid   - RFAUL1
    N  NSEParms .. - Set NSEParms Category Boundary         Time     - 10:05
    G  Padlocks  .. - Global Padlock Access Controls        Sysplex  - ADCDPL
    U  UserMode  .. - ICE User/Application Controls         System   - ADCD113
    P  Password  .. - Set Password Prompting Controls      ApplId   - TEST
    L  UserLogs  .. - ICE User/Application Audit Log        Image Focus 19.0
    A  Activate  .. - Dynamically Activate Controls        Patch Level P0

    X  Exit      - Return to the TCE Primary Menu

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    Option ==>
  
```

Of the available options, the first three – SetAdmin, NSEParms, and Padlocks – are used to define ICE Environment Global Settings. The next three options – UserMode, Password, and

UserLogs – are ICE-user Specific. The final option – Activate – is used to dynamically activate any changes/updates to ICE Application Control settings.

The Integrity Controls Environment - ICE 19.0

4.3.1 SetAdmin – Naming the ICE Administrator

Optionally, ICE Administrators may be defined in this panel by entering their TSOUserIds. By default, all named ICE Administrators are granted unrestricted access to all ICE Applications. The Primary and Supplemental classifications differ only in that the Primary Administrator is the ONLY Administrator allowed to dynamically update ICE Control Settings. Upon entry into the panel, the current Administrators are shown in both the left and right columns. To update or add an Administrator, over-type or type the TSOUserId into the Updated Definition field. Selecting a field using the '/' Row Command and pressing enter will display field specific help. Panel-Specific Help is available by pressing PFK1.

ICE Administrator Assignments

```

TCE 19.0 - ICE Administrator Assignments

-----ICE Controlled Target----- ---JRNxx--- -----Last Update-----
L ADCD113 IFO.TEST.PARMLIB      00 00 Yes   44 LASTUSER 17/03/28 08:37
P --LPAR-- ---ParmDsn Qualifier--- Sf Sf Act Ctls -UserId- yy/mm/dd hh:mm

-----ICE Administrators-----
----Current Definition---- Cm --Primary User-- Cm ----Updated Definition----

                probil .. ICE Primary Admn .. probil

----- --Supplemental-- -----

                rfaul1 .. Assigns Admin 01 .. rfaul1
                pharl2 .. Assigns Admin 02 .. pharl2
                ibmuser .. Assigns Admin 03 .. ibmuser
                gbags1 .. Assigns Admin 04 .. gbags1
                gbags2 .. Assigns Admin 05 .. gbags2
                PROBI2 .. Assigns Admin 06 .. PROBI2

Note: The Primary ICE Administrator Cannot be Dynamically Updated.

Option ==>
    
```

Administrator Settings are found in the NSEJRNxx Configuration Member.

4.3.2 Padlocks – Setting the Global Padlock

This panel displays the current Padlock Global and Boundary Settings. To change the Padlock Access Control Settings, cursor under – Deny|Warm|None – and press enter. To activate – ON – or deactivate – OFF – a control Boundary, cursor under the value shown in the left column and press enter. This action will toggle the value between ON and OFF. Selecting a field using the ‘/’ Row Command will display field specific help. Panel-Specific Help is available by pressing PFK1.

Padlock Access Control Features

```

TCE 19.0 - Padlock Access Control Features

-----TCE Controlled Target----- ---JRNxx--- -----Last Update-----
L ADCD113 IFO.TEST.PARMLIB      00 00 Yes   44 LASTUSER 21/03/28 08:37
P --LPAR-- ---ParmDsn Qualifier--- Sf Sf Act Ctls -UserId- yy/mm/dd hh:mm

-----Padlock Access Controls-----

TCE Padlock Mode of Controlling Access:  .. Deny  /. Warn  .. None
Mode - WARN - Users without Padlock Access Rights Warned of Denials.

----Current Definition---- Cm ---Boundaries--- Cm ----Updated Definition----

                ON .. Control Category .. ON
                ON .. Control Datasets .. ON
                ON .. Control Commands .. ON
                OFF .. Control WrkGroup .. OFF
                ON .. Control RoleBase .. ON
                ON .. Control IFOUsers .. ON

.. CatRules .. DsnRules .. CmdRules .. WgpRules .. RoleBase .. AidRules

Option ==>
    
```

The Settings in this panel are ‘Global’, meaning that they are shared among all ICE Applications. If you specifically want to activate/deactivate Image FOCUS Application Control, update just the IFOUsers Control Boundary.

Boundary Control Settings are found in the NSEJRNxx Configuration Member.

4.3.3 UserMode – ICE Application Access Rights

If the IFOUsers Boundary Control is set to 'ON', all ICE Users, with the exception of ICE Primary or Supplemental Administrators, will fall within the ICE Application Control Boundary - under the defined MODE of Global Padlock Control – DENY, WARN, NONE. In this state, all ICE Users – except Administrators – are treated – Denied or Warned – equally.

Using the Row Commands provided in the Worksheet shown below, you can override the Global or Custom Application Settings on a User-by-User basis, building application sets that are specific to a user’s role within the organization. Panel-Specific Help is available by pressing PFK1.

ICE Application User Access Rules

```

TCE 19.0 - ICE Application User Access Right Row 1 to 7 of 7
--NSIMSLX 0427--
-----ICEAccess Rules-----
----- 7 Controlled Application AccessIds -----
Row Selections: Add_User_Rule Delete_User_Rule Updates_User_Rule Copy_User_Rule
--- Select Sub-Head to Sort, Query above Sub-Head, Enter Saves a Row Update ---
- Row -----User State----- ---Start--- ---Stops--- --User Record Comments--
-----
S Num -UserId- Admin Apps Mode yymmdd hhmm yymmdd hhmm -----Freeform Text-----
- 001 PROBI1 Prime SALU DENY ----- 21/05/03 16:35 PROBI1
- 002 RFAUL1 Admin OPER DENY ----- 21/02/04 09:04 PROBI1
- 003 RFAUL1 Admin RACF DENY ----- 21/02/04 09:04 PROBI1
- 004 GBAGS1 Admin OPER WARN ----- 0800 ----- 1600 21/02/04 09:04 PROBI1
- 005 PROBI1 Prime MVSX NONE ----- 21/03/09 14:03 PROBI1
- 006 GBAGS2 Admin **** WARN ----- 21/03/23 06:37 PROBI1
- 007 PROBI1 Prime RACF NONE ----- 21/03/30 08:33 PROBI1
***** Bottom of data *****
Option ==> Scroll ==> CSR
    
```

4.3.3.1 Adding User Access Privileges

To define a user’s ‘Access Rights’ with respect to a ‘Single ICE Application’, place ‘A’ on any Row Command Entry-Point and press enter. This action will display the ‘Adding ICE User Access Rules’ Pop-Up. Panel-Specific Help is available by pressing PFK1.

```

◇-----◇
◇ TCE 19.0 - Adding ICE User Access Rules ◇
◇ IFO - Select Application ◇
◇ --User-- -----Application Access Rule----- ---FreeForm Comment--- ◇
◇ ---Id--- --Rules-- ---Start--- ---Stops--- -----Text----- ◇
◇ ----- Prod Mode yymmdd hhmm yymmdd hhmm ----- ◇
◇ -USERID- ----- 21/05/11_10:35_RFAUL1 ◇
◇-----◇
    
```

With this release of ICE, five ICE Applications are Controlled. They include:

- PROD – The Image FOCUS Production View
- WORK – The Image FOCUS Workbench View
- DEFS – ICE Environment Definitions and Controls

- CNTL – Access to The Control Editor Configuration Dialogs
- ADMN – ICE System Administration Dialogs

Any user may be given access to one or all of these ICE Applications, but only one application may be added at a time. To complete and save a new or updated Rule Definition, return to the prior panel and reselect 'Add New'. Specify '****' as the Product Name to denote – access or restrictions – to all possible controlled ICE Applications in a single entry.

4.3.3.2 USERMODE

To override the Default or Custom Global Padlock MODE – DENY, WARN, NONE – enter the desired MODE. If the Global MODE is set to 'DENY', but the USERMODE is set to 'WARN', the user will be given access to the Named Application – PROD, WORK, DEFS, CNTL, ADMN – however, the user will receive a Pop-Up Warning when accessing the Application. MODE assignments are Application/UserId specific.

4.3.3.3 Access Window

Each User may be assigned to an optional 'Access Window'. If an 'Access Window' is assigned, it will be applied on an Application/UserId basis.

4.3.4 UserLogs – Access/Display User Activity

ICE Application Users - Summary

```

IFO 19.0 - ICE Application Users - Summary      Row 1 to 10 of 10
--NSIMILX 0427--                               --ICEApps Users--
----- Environment is IFO.COMMON - 7 Application Users -----
Row Selections: Shows ICEUser_Timeline_Report Display_Application_User_Timeline
- Row ----Application Last Used----- Bkg Your -----Period to Date-----
S Num -UserId- ----Date-Time-Last---- Set News Days Week Mths Qtrs Years Totals
- 001 RFAUL1  21/05/11-10:57--ADMN-- ---   0   2   2   2   2   2   2
- 002 PHARL2  21/05/07-15:57--WORK-- ---   0   0   0  32  177  177  319
- 003 GBAGS2  21/05/07-10:26--CTLS-- ---   0   0   0  17  180  180  430
- 004 ADCDMST 21/03/19-08:39--WORK-- ---   0   0   0   0   5   5   5
- 005 PHARL3  21/03/19-08:36--WORK-- ---   0   0   0   0   8   8  108
- 006 GBAGS1  21/12/15-10:04--WORK-- ---   0   0   0   0   0   0   4
- 007 RFAUL2  21/09/15-09:01--CTLS-- ---   0   0   0   0   0   0   9
- 008 -----
- 009 Total   All_Application_Access ---   0   2   2  51  372  372  877
- 010 =====
***** Bottom of data *****
    
```

Application User Timeline Report

```

/*****
/*
/*          ICEUserId "PHARL2" Application Usage - Timeline Detail          */
/*
/*          Date:2021/05/11 - Time:10:59:38 - User:RFAUL1                  */
/*
/*
/*****

Rows --Access Control-- -Access Attempts- -GblRules- ----UserApp Specific----
Numb -UserId- Apps Mode yy/mm/dd hh:mm:ss Admin Mode Ctl Mode Window yy/mm/dd
-----
0001 PHARL2  WORK NONE 21/05/07 15:57:17 ADMIN WARN NOP ----
0002 PHARL2  CTLS NONE 21/05/07 14:18:05 ADMIN WARN NOP ----
0003 PHARL2  CTLS NONE 21/05/07 14:05:09 ADMIN WARN NOP ----
0004 PHARL2  SETA GBLSMODE 21/05/07 13:51:38 ----- GBLSMODE NOP USERS_MODE USE
0005 PHARL2  OPER GBLSMODE 21/05/07 13:50:42 ----- GBLSMODE NOP USERS_MODE USE
0006 PHARL2  CTLS NONE 21/05/07 13:28:17 ADMIN WARN NOP ----
Command ==>                               Scroll ==> PAGE
    
```

Application User Timeline Worksheet

```

TCE 19.0 - ICE User Application Audit Log      Row 1 to 12 of 319
--NSIMILX 0427--                               --ICE Audit Log--
----- 319 Application Audit Log Records -----
Row Selections: Show_Application_Access
--- Select Sub-Head to Sort, Query above Sub-Head, Enter Saves a Row Update ---
- Rows --Access Control-- -Access Attempts- -GblRules- ----UserApp Specific----

S Numb -UserId- Apps Mode yy/mm/dd hh:mm:ss Admin Mode Ctl Mode Window yy/mm/dd
- 0001 PHARL2 WORK NONE 21/05/07 15:57:17 ADMIN WARN NOP ----
- 0002 PHARL2 CTLS NONE 21/05/07 14:18:05 ADMIN WARN NOP ----
- 0003 PHARL2 CTLS NONE 21/05/07 14:05:09 ADMIN WARN NOP ----
- 0004 PHARL2 SETA GBLs 21/05/07 13:51:38 ----- GBLs NOP USER USERMO ----
- 0005 PHARL2 OPER GBLs 21/05/07 13:50:42 ----- GBLs NOP USER USERMO ----
- 0006 PHARL2 CTLS NONE 21/05/07 13:28:17 ADMIN WARN NOP ----
- 0007 PHARL2 CTLS NONE 21/05/07 12:52:22 ADMIN WARN NOP ----
- 0008 PHARL2 WORK NONE 21/05/07 12:10:56 ADMIN WARN NOP ----
- 0009 PHARL2 CTLS NONE 21/05/07 10:28:38 ADMIN WARN NOP ----
- 0010 PHARL2 CTLS NONE 21/05/06 17:14:15 ADMIN WARN NOP ----
- 0011 PHARL2 CTLS NONE 21/05/06 17:13:38 ADMIN WARN NOP ----
- 0012 PHARL2 WORK NONE 21/05/06 17:07:40 ADMIN WARN NOP ----

Option ==> Scroll ==> CSR
    
```

4.3.5 Activate – Activate Control Updates

All IFO User Control settings MUST be activated, using this dynamic update option, before they become effective.

5 Appendix A – SMP/E Overview

The information presented in this Appendix is derived from the following Web Site:

<https://www-01.ibm.com/support/knowledgecenter/zosbasics>

It is presented here in a summary form as a valuable tutorial to those who are new to the SMP/E Process or need a refresh of their SMP/E knowledge. The links shown within each section below will take you directly to additional information at the above referenced Web Site.

5.1 \$SM40DDF – JOB: SMPDDDF

The DDDEF entry contains the information SMP/E needs to dynamically allocate a specific data set. With DDDEF entries, you do not have to provide a DD statement for every data set SMP/E may need to process a particular command. When SMP/E determines that it needs a specific data set, it looks for a DD statement that it can use to allocate that data set. If there is no DD statement, SMP/E checks whether the current zone contains a DDDEF entry for that data set. If so, it uses the information in the DDDEF entry to dynamically allocate the data set.

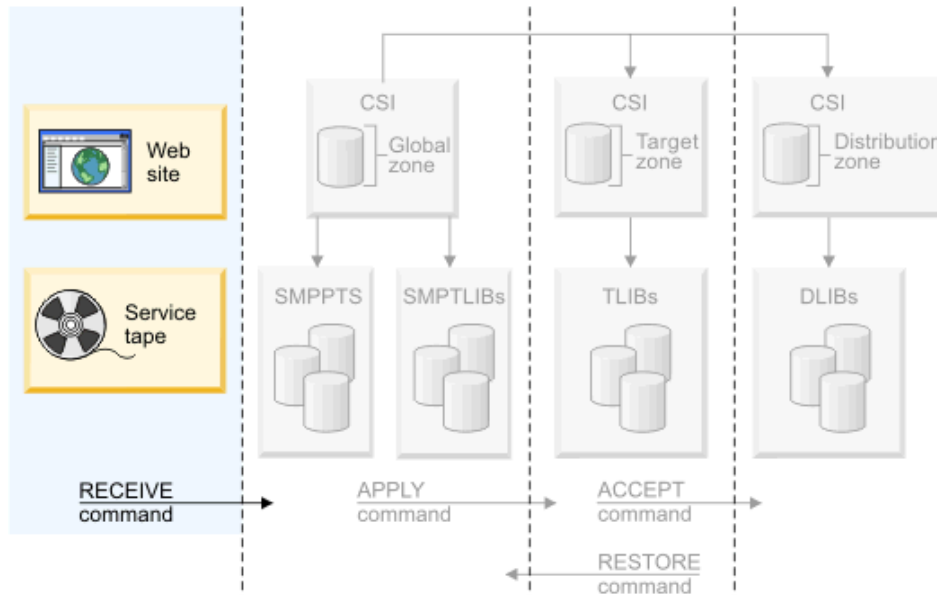
https://www-01.ibm.com/support/knowledgecenter/SSLTBW_2.1.0/com.ibm.zos.v2r1.gim2000.entddd.htm

Note: The source above contains additional information.

5.2 \$SM40REC – JOB: SMPRECV

The RECEIVE command allows you to take a SYSMOD that is outside of SMP/E and stage it into the SMP/E library domain, which begins to construct the CSI entries that describe them. This staging allows them to be queried for input into later processes. More recently, the source can be electronic from a Web site, although usually it comes from a tape or even a third-party vendor media.

5.2.1 SMP/E RECEIVE process



These tasks include:

- Constructing entries in the Global Zone for describing the SYSMOD.
- Ensuring the SYSMOD is valid, such as the syntax for modification control statements (MCS) associated to the products installed in the CSI.
- Installing the SYSMOD into the libraries. Example: the PTF temporary store library.
- Assessing the HOLDDATA to ensure errors are not introduced.

During the RECEIVE processing, the MCS for each SYSMOD is copied to an SMP/E temporary storage area called the SMPPTS data set, which contains the inline element replacement or update for that SYSMOD. There are also RELFILES that package the elements in relative files that are separate from MCSs, which are mostly used by function SYSMODs. Relative files are stored in another temporary storage area called SMPTLIB data sets.

SMP/E updates the global zone with information about the SYSMODs that it has received.

Examples of RECEIVE commands:

To receive only HOLDDATA that might require special handling or that is in error, you use this command:

```
SET  BDY(GLOBAL).
RECEIVE HOLDDATA.
```

To receive only SYSMODs for installation into the global zone, you use this command:

```
SET  BDY(GLOBAL).
```

RECEIVE SYSMODS.

To receive all SYSMODs, including HOLDDATA, for a specific product (for example, WebSphere® Application Server), you use a command like the following:

```
SET   BDY(GLOBAL).
RECEIVE FORFMID(H28W500).
```

http://www-01.ibm.com/support/knowledgecenter/zosbasics/com.ibm.zos.zsysprog/zsysprogc_smpereceive.htm

Note: The source above contains additional information.

5.3 \$SM40APL – JOB: SMPAPPLY

The APPLY command specifies which of the received SYSMODs are to be selected for installation in the target libraries. SMP/E also ensures that all other required SYSMODs (prerequisites) have been installed or are being installed concurrently as well as in the proper sequence.

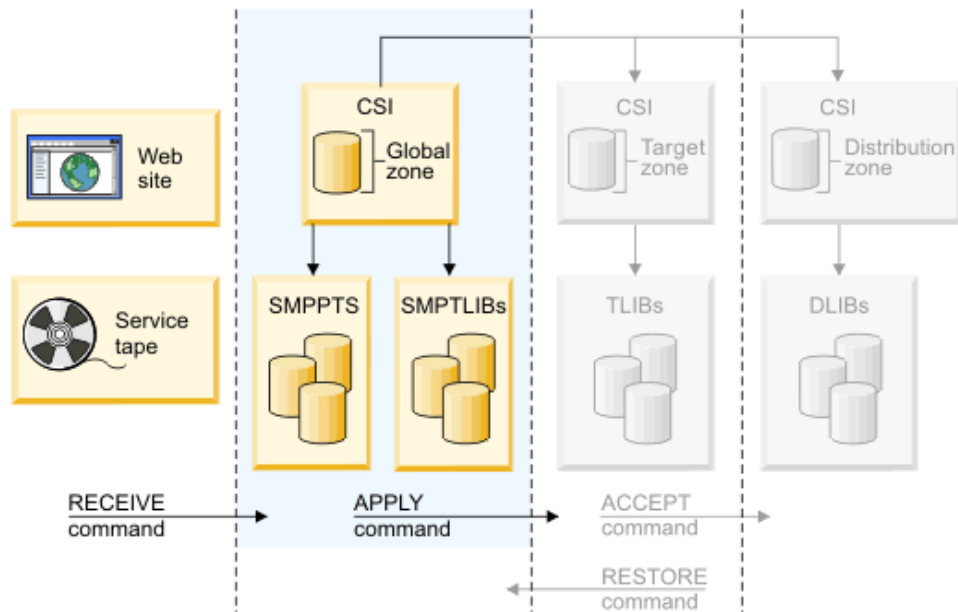
The source of the elements is the SMPTLIB data sets, the SMPPTS data set or indirect libraries depending on how it was packaged. This phase of the SMP/E process entails the following:

- Executing the appropriate utility to install the SYSMOD into the target library, depending on the type of input text supplied and target module being changed.
- Ensuring that the relationship of the new SYSMOD with other SYSMODs in the target zone is correct.
- The CSI is modified displaying the updated modules.

The APPLY command updates the system libraries and should be carefully used on a live production system. It is recommended that you initially use a copy of the production target libraries and zones.

The target zone reflects the content of the target libraries. Therefore, after the utility is completed and the zone updated, it will accurately reflect the status of those libraries.

5.3.1 SMP/E APPLY process



The APPLY processing is where the target zone is accurately updated:

- All SYSMOD entries in the Global Zone are updated to reflect that the SYSMOD has been applied to the target zone.
- The target zone accurately reflects each SYSMOD entry applied. Element entries (such as MOD and LMOD) are also created in the target zone.
- BACKUP entries are created in the SMPSCDS data set so the SYSMOD can be restored, if at all necessary.

Similar to the RECEIVE process, the APPLY command has many different operands for flexibility to select SYSMODs you would like to see for installation in the target libraries, and provides an assortment of output. The directives used instruct SMP/E what you want installed.

Examples of APPLY commands:

To install only PTF SYSMODs, enter a command like the following:

```
SET BDY(ZOSTGT1).
APPLY PTFS.
```

To select PTF SYSMODs, you name them in the directives, for example:

```
SET BDY(ZOSTGT1).
APPLY SELECT(UZ00001, UZ00002).
```

Sometimes, you might want to install only corrective fixes (APARs) or user modifications (USERMODs) into the target library, for example:

```
SET   BDY(ZOSTGT1).
APPLY APARS
      USERMODS.
```

At other times, you might want to update a selected product from a distribution tape:

```
SET   BDY(ZOSTGT1).
APPLY PTFS
      FORFMID(H28W500).
```

Or:

```
SET   BDY (ZOSTGT1).
APPLY FORFMID(H28W500).
```

In these two examples, SMP/E applies all applicable PTFs for the FMID. Unless you specify otherwise, PTFs are the default SYSMOD type.

The APPLY command with the CHECK operand:

There might be times when you want to see which SYSMODs are included before you actually install them. You can do this by including the CHECK operand with commands such as the following:

```
SET   BDY(MVSTGT1).
APPLY PTFS
      APARS
      FORFMID(HOP1)
      GROUPEXTEND
      CHECK.
```

When these commands complete, you can check the SYSMOD status report to see which SYSMODs would have been installed if you had not specified the CHECK operand. If you are satisfied with the results of this trial run, you can enter the commands again, without the CHECK operand, to actually install the SYSMODs.

http://www-01.ibm.com/support/knowledgecenter/zosbasics/com.ibm.zos.zsysprog/zsysprog_smpeaccept.htm

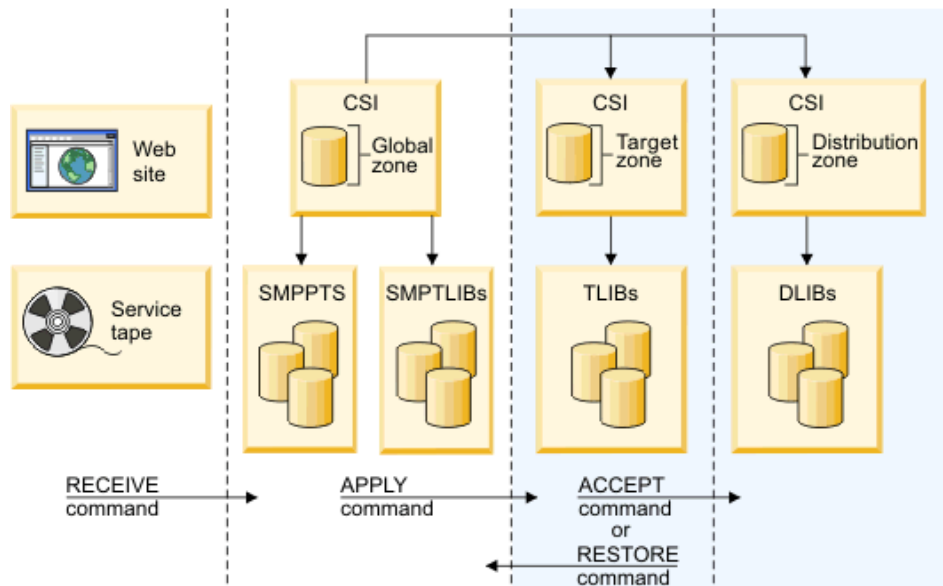
Note: The source above contains additional information.

5.4 \$SM40ACC – JOB: SMPACCPT

When a SYSMOD is installed into its target library, and you have tested it, you then accept the change through the ACCEPT command. This step takes the selected SYSMODs and installs them into the associated distribution libraries.

On the ACCEPT command, you specify operands to indicate which of the received SYSMODs are to be selected for installation. During this phase, SMP/E also ensures that the correct functional level of each element is selected.

5.4.1 SMP/E ACCEPT process



The ACCEPT command performs the following tasks:

- Updates CSI entries with the targeted elements in the distribution zone.
- Rebuilds or creates the targeted elements in the distribution libraries using the content of the SYSMOD as input.
- Verifies the target zone CSI entries for the affected modules and SYSMODs, ensuring that they are consistent with the library content.
- Performs housekeeping of obsolete or expired elements. ACCEPT processing deletes the global zone CSI entries, PTS members and SMPTLIBs for those SYSMODs affected. For example, ACCEPT deletes the global zone SYSMOD entries and MCS statements in the SMPPTS data set for those SYSMODs that have been accepted into the distribution zone.

As a further option, you can skip having SMP/E clean up the global zone cleanup. If so, SMP/E saves this information.

There is a "stop" ACCEPT processing that SMP/E provides so you can ensure that all prerequisites are satisfied before the installation of the SYSMODs. This is a check for you to see what will happen (assist you in detecting problems) without actually modifying the distribution libraries.

After applying the SYSMODs into the Target zone, you can then tell SMP/E to install only the eligible PTF SYSMODs into the Distribution zone:

```
SET  BDY(ZOSDLB1).
ACCEPT  PTFS.
```

Examples of ACCEPT commands:

To install PTF SYSMODS selecting the particular ones:

```
SET  BDY(ZOSDLB1).
ACCEPT  SELECT(UZ00001,UZ00002).
```

There are situations where you may want to update a particular product with all SYSMODs:

```
SET  BDY(ZOSDLB1).
ACCEPT  PTFS
        FORFMID(H28W500).
```

Or:

```
SET  BDY(ZOSDLB1).
ACCEPT  FORFMID(H28W500).
```

In these two examples, SMP/E accepts all applicable PTFs for the product whose FMID is H28W500 located in the Distribution zone ZOSDLB1.

Note: Should the SYSMOD be in error, do not accept it. Use the RESTORE process which takes the updated modules and rebuilds the copies in the Target libraries from the specific modules in the Distribution libraries. Additionally, RESTORE updates the Target zone CSI entries to reflect the removal of the SYSMOD.

Note: When ACCEPT processing is complete, it cannot be backed out. ACCEPT should only be performed after you are satisfied with the performance and stability of the elements of the SYSMOD. **The changes from ACCEPT processing are permanent.**

The ACCEPT processing for prerequisite SYSMODs

When installing a SYSMOD, you may not know whether it has prerequisites (sometimes, an ERROR SYSMOD is held). In these situations, you can direct SMP/E to check whether an equivalent (or superseding) SYSMOD is available by specifying the GROUPEXTEND operand:

```
SET  BDY(ZOSDLB1).
ACCEPT  PTFS
        FORFMID(H28W500)
        GROUPEXTEND.
```

A good way to see which SYSMODs are included before you actually install them is with the CHECK operand:

```
SET  BDY(ZOSTGT1).
ACCEPT PTFS
      FORMFMID(H28W500)
      GROUPEXTEND
      CHECK.
```

Note: If SMP/E cannot find a required SYSMOD, it looks for and uses a SYSMOD that supersedes the required one.

5.5 ACCEPT reporting

When this last phase is completed, the following reports will assist you to assess the results:

- **SYSMOD Status Report:** Provides a summary of the processing that took place for each SYSMOD, based on the operands you specified on the ACCEPT command.
- **Element Summary Report:** Provides a detailed look at each element affected by the ACCEPT processing and in which libraries they reside.
- **Causer SYSMOD Summary Report:** Provides a list of SYSMODs that caused other SYSMODs to fail and describes the errors that must be fixed in order to be successfully processed.
- **File Allocation Report:** Provides a list of the data sets used for the ACCEPT processing and supplies information about these data sets.

https://www-01.ibm.com/support/knowledgecenter/zosbasics/com.ibm.zos.zsysprog/zsysprogc_smpeaccept.htm

Note: The source above contains additional information.

6 Index

A

About IPLCheck, 6
 Access Window, 84
 Access/Display User Activity, 85
 Accountability, 65
 Activate Control Updates, 86
 Adding User Access Privileges, 83
 Alternate Security Password, 15
 Application Interface Examples, 75
 Authorizing ICE Load Libraries, 16
 Auto Keyword Value Determination, 59

B

BEGINPARALLEL, 34

C

Choosing an Installation Method, 19
 Copyrights, 2
 Copyrights of Others, 2
 Customizing an Installation, 33

D

Dataset Security, 65

E

ENDPARALLEL, 35
 External Security Manager Issues, 40

F

Full Non-SMP/E Installation, 20

H

High Level Qualifier, 16

I

ICE
 Authorizing load library, 33
 Automated Operations, 52
 Background Use, 54
 Downloading ICE, 14
 EMail Option, 65

Evaluation Copy, 63
 IFOBAT/A/S keywords, 57
 IFOM started task, 44
 IFOS started task, 45
 Licensed Copy, 63
 Mail Settings, 66
 Master Console Operations, 53
 Planning for Installation, 16
 Post Installation Tasks, 62
 Recovery Use, 47
 Store Packages, 65
 VTAM Application Definition, 43
 ICE ParmLib Members, 34
 ICE Persistent Datasets, 29
 ICEAdmin – User Access Controls, 80
 ICEAGNT, 50
 IFOR PROC, 48
 Install Job, 18

L

License Agreement, 2
 Licensing and Authorization, 14

M

Message Management, 68
 Migration Definitions, 77
 Migration from a Release, 79
 Migration Tool, 77

N

NSEMSG00, 68
 NSWJSCI Options, 38, 55

O

Other Documents, 3

P

Padlocks – Setting the Global Padlock, 82
 Product Installation, 14

R

Remote ICE Configuration Members, 51
 Remote System, 50
 Reporting Problems, 4

S

SetAdmin – Naming the ICE Administrator, 81
SMP/E Installation, 25
Starting The Background, 56
Stopping the Background, 55
System Requirements, 9
System Security, 64

T

Technical Support, 5
The Control Editor
Configuration Requirements for The Control
Editor, 40
Trademarks, 2

U

Updating IKJTSOxx to support The Control Editor,
29
Upgrades and Re-Installation, 31
USERMODE, 84
UserMode – ICE Application Access Rights, 83

V

VTAM Application Definition, 43

W

Who Should Read, 3

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