The Integrity Controls Environment (ICE) application
Image FOCUS ensures, to the extent possible,
maximum availability of a z/OS Sysplex and its Images.

Image FOCUS

15.0

Getting Started

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: 2019-6-24

1 Foreword

1.1 Copyright, Trademark and Legal Notices

1.1.1 Copyrights

This Getting Started and the related Software Product(s) are protected under a Copyright dated 2019 by NewEra Software, Inc. All rights are reserved.

1.1.2 License Agreement

This Getting Started 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 familiarize users with the fundamental capabilities of **Image FOCUS**. Chapters 5 and 6 cover the installation, setup and basic functions of **Image FOCUS**. The **Image FOCUS** product family is the most advanced IPL quality management product set on the market today and is used for IPL integrity, global change management, and standardization of z/OS configuration components. It is used in all phases of the IPL lifecycle, from development, testing and staging through production. Organizations worldwide use it to achieve and maintain the most error-free, standardized production environment possible. Users can automate special projects like moving to a new release of the operating system, consolidation and standardization efforts.

Image FOCUS is designed to assist the user in testing, monitoring and protecting the IPL integrity of a host operating system or Sysplex using z/OS (or any prior MVS-based system) and includes JES, VTAM, TCP/IP and CICS in its inspections. It provides the ability to test the components that define the operating system environment in the actual manner in which each component will be used during an actual IPL. This testing, or IPL inspection, can be done in a variety of ways using **Image FOCUS** -- on a request basis accessed in the Workbench Selection, in an interval monitoring method accessed in the Production Selection and in batch mode.

The **Getting Started Guide** explores the basic setup of the request and monitoring method of the image inspections. Default names are used as examples in this document. Please note all changes are required to conform to your site-specific standards.

The guide assumes that you have an understanding of the IBM z/OS operating system and know how to allocate datasets and APPLIDs. If you have questions, contact your System Programmer or NewEra Software. Additional copies of the guide can be downloaded from our website:

www.newera.com/startifo.pdf

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.

- 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 Image FOCUS

Image FOCUS is an Integrity Controls Environment (ICE) Application whose primary function is to provide Inspection and Baseline services to users of the z/OS operating system, its subsystems and Parallel Sysplex. Image FOCUS and its components run as a started task under any current release of z/OS.

1.4.1   Inspection Services

Inspection Services performs a "Virtual IPL" of each Image beginning with the validation of the IPL Unit Address and LOADPARM, PARMLIB and PROCLIB. Members are checked for syntactical correctness and related datasets for referential integrity and attribute characteristics that would result in a future IPL failure. Subsystem and Sysplex relationships are inspected and/or crosschecked with other Images.

1.4.2   Baseline Services

Baseline Services builds and stores a "Blueprint" of valid, viable configurations. Each contains the content of configuration members and/or files discovered during the "Virtual IPL". Each Baseline is automatically updated at a defined monitoring interval. Continuous updates ensure working configuration copies and provide the basis for configuration change detection.

1.4.3   System Components

Image FOCUS is composed of three major components, each of which may be optionally installed and operated independently of the others. A description of each follows:

1.4.3.1   IFOR – For Recovery

When installed to support the Recovery selection, the Image FOCUS IFOR started task will maintain its own independent communications subsystem and provide ISPF application support to a single locally attached non-SNA 3270 console.

1.4.3.2   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 their own 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.

1.4.3.3   IFOBG – For Background Operations

The Image FOCUS Background (IFOBG) started task will report IPL Event or Image changes that would result in future IPL failures to a designated user or group through the TSO Broadcast Facility or via Email. These notices are sent at intervals controlled by Image FOCUS or optionally by the site's job scheduler.

The results of a successful background interval inspection are stored as Image Package Files. These files are accessible by both Image FOCUS and its sister product, Stand Alone Environment (SAE), and are scanned by the Image Compare Facility (available in both products) to determine changes between individual Package Files or a current IMAGE Configuration.

1.5   Product Limitations

When using Image FOCUS keep in mind that we at NewEra have used our professional best efforts to design and build Inspectors that function in accordance with our understanding of available IBM documentation and real-world experience. In this ongoing process you play a key role. With your help, we would like to document those cases where actual MVS and z/OS system implementation appears to differ from the published documentation available to the z/OS user community. Where possible, undocumented of conflicting system behavior will become a part of the overall Inspection "Rule Set" used by the Image Focus Inspection Server.

To aid us in this process, please keep the following in mind as you use Image FOCUS:

1. The Image FOCUS inspection process attempts to validate members and configuration files for proper syntax and content.
2. Some members and configuration files are checked line-by-line, while others are validated by section or as a whole.
3. IBM documentation for some PARMLIB members and subsystems is not clear. This may result in one of the following:

   a. Errors may appear in members during a real IPL that are not detected by Image FOCUS or,
   b. Image FOCUS may report errors that do not generate errors during a real IPL.

Errors, Warnings and Notices generated by Image FOCUS may be due to a misunderstanding of the documentation in IBM manuals or a defect in the Image FOCUS Inspection application(s). Whatever the case, if you receive an Error, Warning or Notice from Image FOCUS that you have a question about, please let us know and we will evaluate it, correct it in Image FOCUS or work with IBM to change their documentation.

1.6   Environmental Restrictions

The Integrity Controls Environment (ICE) in which Image FOCUS executes, offers access to ISPF/PDF, ISPF/PDF applications, REXX programs and CLISTs within the context of certain program restrictions.

1. 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.]

2. There can be only one locally attached non-SNA 3270 console per IFOR (Image FOCUS Recovery) address space. If additional user access is needed, the user may start additional IFOR address spaces.

3. Native TSO commands and services are not fully supported.

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

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

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

7. 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 (Multi-user Image FOCUS) support where each user has a dedicated ISPF profile dataset.

8. 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 Enhancements in this Release

Image FOCUS 15.0 is built on the latest ICE code base Version 14 Patch 15. In the months since Version 14.0 Patch 15 was made generally available, numerous changes improving the availability, reliability and serviceability of the Image FOCUS Core have been made. They are listed in the Image FOCUS 15.0 Read Me.

1.7.1 This Release

- In this release of Image FOCUS the z/OS Core and its Subsystem and Supplemental Inspectors has been enhanced to provide support for z/OS V2R3. It is recommended that current users upgrade to this new release as soon as possible.

1.7.2 Prior Releases

- User of IPLCheck Family of Predictive Failure Analysis Applications will benefit from the added change detection function now found in the optional Image Manager application.

  The Image Manager creates three distinct Image Configuration Baselines for each identified LPAR, one baseline each for the Production and Alternate configurations as identified by IPLCheck (The Moving Baselines) and a startup Snapshot of LPAR Environment following the most recent IPL (The Fixed Baseline). Notification of changes discovered may be sent via Email, SMS Text and/or posted to the System Log.

- Enhanced Notification and Report Distribution functions have been added to the Background Inspection and Change Detection Process via a new IFO Control Member NSEBKG00 .

- The Image FOCUS z/OS Core and optional Component and Supplemental Inspectors have been enhanced to provide support for z/OS V2R3.

- Image FOCUS now provides direct access to the IPLCheck Family of applications via the IPLCheck-Viewer. IPLCheck applications are Predictive Failure Analysis (PFA) "Health Checks". The analytic processes used are based on NewEra's proven z/OS Inspection Server Technology that supports all releases of z/OS. The Family includes:

  1. **IPLCheck-Core** is directed to automatically discover the IPL PARMs of each 'Production' z/OS LPAR to which it is assigned. It evaluates running settings for syntax and related system components for structural integrity.
  2. **IPLCheck-Plus** is directed to 'Alternate' z/OS LPARs via user-managed settings that override IPLCheck-Core discoveries. Alternates include Unit Address, LoadParm, Catalog and development IPLPARM and PARMLIB datasets.

3. **IPLCheck-Dynamic** evaluates LPALST, LNKLST, APFLST and SYMLST settings. Mismatches with 'Actual' production or alternate configurations often result in a loss of functionality when an LPAR is re-IPLed.
4. **IPLCheck-Subsystems** extends the discovery and standards enforcement found in IPLCheck-Core and IPLCheck-Plus to include the z/OS subsystems JES, VTAM, CICS and various TCP/IP components.
5. **IPLCheck-Viewer** analytic findings are reported to the Health Checker Framework where they are immediately distributed, by LPAR, for review and remediation. The Viewer provides a centralized focal point where the state of all LPARs can be reviewed simultaneously.

- The Image FOCUS Component Inspector, which allows individual members to be inspected, as been enhanced with the addition of the XPARMLIB Inspector. This new inspector reports defects in the construction of ParmLib Members that are not defined by Directors in the IEASYSxx ParmLib Member. Members in this group include:

ADYSET	ANTMIN	ANTXIN	APPCPM	ASCHPM
BLSCECT	BLSCUSER	CNIDTR	COFDLF	COFVLF
CONFIG	CTIBPX	DFHSSI	EPHWP	EXSPAT
GTFPARM	HZSPRM	IDAVDT	IDAVDT	IEADMC
IEASLP	FGPSEDI	IIKJPRM	IOEPRM	IPCSPR
IVTPRM	MSGFLD	TSOKEY	XCFPOL	

- Beginning with release 10.0 of Image FOCUS users will need separate License Keys to unlock the Workbench, Production and Recovery Views. This allows for the separate licensing of these individual features.

1.8   System Requirements

1.8.1   Prerequisites

To use Image FOCUS, you will need the following:
- Integrity Controls Environment (ICE) 15.0 or higher
- Access to ACF/VTAM
- A standard security system (e.g., RACF, ACF2 or Top Secret)
- A valid USER ID and PASSWORD
- A non-SNA locally attached console that supports 24X80 mode (Recovery Mode) or a VTAM (TSO Multi-User Mode) supported display terminal.

    You will find the latest release of ICE at www.newera.com.

1.8.2   The License Key

A License Key is required to activate Image FOCUS. Once the License Key is inserted in the ICE Control Member NSEPRM00 the functions of Image FOCUS will be unlocked and become immediately accessible from the ICE Primary Menu.

2   Table of Contents

3 Image FOCUS Terms and Definitions

The following are definitions of frequently used terms found in this document, as well as in **Image FOCUS** panels and screens.

- **Blueprints:** Blueprints are copies of the components extracted during an inspection by the IFOBG process. They are stored when a change has been detected to any component in the IPL process. These Blueprints are used to identify and track changes to the members and datasets that define a Sysplex, Image, subsystem or user-defined data source.

- **IFOBG:** IFOBG involves the running of the inspection process under the control of a provided started task using interval timing to run unattended inspections in BACKGROUND (see "Production Selection" below).

- **IFOM:** The IFOM procedure creates a MASTER address space that will control all **Image FOCUS** users. This address should be started after an IPL and must be available in order for users to access the **Image FOCUS** VTAM Application.

- **IFOS:** The IFOS procedure is used when a user logs onto the VTAM Application. A separate address space is created for each user.

- **Inspection:** An Inspection involves the processing of the IPL path and applicable rules for the IPL and startup of a Sysplex, Image or Subsystem. It includes key components such as PARMLIB members, PROCLIB, JES, VTAM, TCP/IP and CICS definitions.

- **Packages:** Packages are a dataset, one for each inspection request, which contain the generations of Blueprints.

- **Production Selection:** The Production Selection involves the set up and control of the IFOBG started task and is used for review of the Blueprints. It is used to monitor the integrity of a Sysplex or Image, detect changes and provide notification of status based upon the results of an inspection.

- **Recovery Selection:** The Recovery Selection provides access to ISPF through the **Image FOCUS** product.

- **Workbench Selection:** The Workbench Selection involves the set up, management and execution of inspection requests. This Selection includes analysis capabilities and interfaces into more advanced functions and services.

4 Image FOCUS Evaluation Questionnaire

Company:_____	Tester:_____
Phone:_____	Email:_____
Today's Date:_____	Download Date:_____
Start Date:_____	Code Expiration Date:_____

4.1 Ten Steps to Installing **Image FOCUS**

□ Download Image FOCUS from the NewEra website. Patch level: _____

□ Upload install job to mainframe.

□ Configure and run the install job. Check return codes.

□ Run the ALLOC and BUILD jobs. Check return codes.

□ Put trial authorization control statements into PARMLIB member NSEPRM00.

□ Move IFOM, IFOS, IFOBG, and IFOR into your system PROCLIB.

□ Update the Image FOCUS Procs. Image FOCUS HLQ: _____

□ Set up an Image FOCUS APPLID.

□ Start IFOM, IFOBG, and IFOR.

□ Log onto Image FOCUS.

4.2 Ten Steps to Using **Image FOCUS**

□ Log onto Image FOCUS.

□ Use the Workbench.

□ Define an Image for Inspection. Image name: _____

□ Promote Image to Production.

□ Set up the Monitor Interval / Frequency and User Notification.

□ Run the Monitor IFOBG. What was the result? _____

□ Run the Release Analysis. Which future release was tested? _____

□ Run the Component Inspector.

□ Run the Control Editor.

□ Run the Recovery Selection.

Problems? Contact NewEra Software technical support (support@newera.com)

5   Image FOCUS Installation

Image FOCUS is one of several applications that execute within the Integrity Controls Environment (ICE).   To install ICE and activate Image FOCUS, please refer to the **ICE Installation and Configuration User Guide**, a link to which may be found on this page of the NewEra website:

http://www.newera-info.com/Docs.html

The following can serve as an installation checklist as well as provide tips and suggestions to make your install an effortless process. After the installation has been completed, we will address the set up and execution of Image FOCUS in Chapter 6 of this document.

5.1   Installation Checklist – Getting Ready

The installation process begins by requesting the Image FOCUS Install Job (a sequential dataset) from the NewEra Software website.

- **Download request:** From the www.newera.com homepage, select "Evaluators - Download Image FOCUS" and follow the instructions.

- **Open the email:** You will receive an email from NewEra Software that contains a weblink to download the Install Job (sequential dataset).

5.1.1   Typical Evaluation Email from NewEra

From: ahr@newera.com [mailto:ahr@newera.com]
Sent: Monday, September 18, 2017 3:50 PM
To: new@evaluator.com
Cc: support@newera.com
Subject: IFO Evaluation

Dear: Evaluator, Your Company
Date: 09/18/17 - 15:57:51

Subject: IFO Evaluation

Thank you for your interest in NewEra and our Products. We are very pleased that you have decided to begin an evaluation. If at any time should you need assistance please contact us.

Follow the link below to reach your Image FOCUS Evaluation Resources.

Regards,

Technical Support, NewEra Software
mailto:support@newera.com

▪ **Click on the web link within the email:** A special NewEra Software webpage will appear with authorized downloadable Authorized Application Name(s).

Authorized Application Name	Download	Read Me	User's Guide
---	-------------------	----------------	--------------------
Image FOCUS Core Rel_150_Lev_Pxx	Click	Click	Click

▪ **Locate the links listed on the webpage:** Towards the bottom of the webpage, locate the Authorized Application Name(s). There are links for Download (Install Job dataset), ReadMe, and User Guide for each authorized application.

In this example the application is "Image FOCUS Core Rel_150 Lev_Pxx" (where "Pxx" represents the patch level). The Application Names will change with new releases and new patch levels.

- **Download and save the datasets:** Click on the Download, Read Me and User Guide links for each authorized application. Save these datasets onto a hard drive (local or network). Note: The Image FOCUS "Download" file is the Install Job and has an ".nez" file extension.

- **Allocate the Install Job dataset:** Allocate a dataset for the Install Job on the mainframe. The Install Job space requirements are listed below:

    SPACE=(CYL,(35,5)),LRECL=80,BLKSIZE=6160, RECFM=FB

- Copy the Install Job to the mainframe: Copy the Image FOCUS Install Job dataset to the mainframe. Note: The file must be transferred in Binary; verify that the last line contains only two @ signs.

- **Edit the Install Job on the mainframe:** Change the Jobcard parameters to conform to your site-specific standards. Do not renumber this member and do not make global changes. Modifications should not be made past line 27 of this member.

- **Specify and Record HLQ and Volume Names:** Specify the HLQ and Volume names for the Image FOCUS datasets within the Install Job. Record them below for future reference:

    &nssprfx =_____

    &dskvolu =_____

- **Submit the Install Job:** Exit the Edit Session before submitting the job. The Install Job creates a library called HLQ.INSTLIB (where HLQ is replaced by the &nssprfx symbolic). Verify the job return codes.

    Do Not Submit this job from ISPF Edit. If you experience a B37 space abend when you submit the job, this likely is due to submitting the job from ISPF Edit. Save and Exit the ISPF Edit session and submit the job from the TSO command line (ISPF Option 6 - Command Shell), or from ISPF Option 3.4.

- **Edit and submit the member ALLOC:** This job allocates the Image FOCUS datasets. Change the Jobcard parameters to conform to your site-specific standards (no other changes required). Verify that the HLQ and Volume names are correct and submit the job. Verify the job return codes.

- **Edit and submit the member BUILD:** This job builds the Image FOCUS product (populates the Image FOCUS datasets). Change the Jobcard parameters to conform to your site-specific standards (no other changes required). Verify that the HLQ and Volume names are correct, and submit the job. Verify the job return codes. If you receive a B37 abend, an ISV intervention is managing the blocks (increase the sizes and restart).

```
DSLIST – Data Sets Matching IFO.IFOX

COMMAND ===> _____   Scroll ===> PAGE
```

```
Command – Enter "/" to select action ...............Message ....... Volume
-----------------------------------------------------------------------
IFO.IFOX.CTL.GLOBAL                  – (Control Editor Specific)
IFO.IFOX.CTL.NPAD                    – (Control Editor Specific)
IFO.IFOX.ICEWORK                     – (Control Editor Detectors Specific)
IFO.IFOX.INSTLIB
IFO.IFOX.IPLCHECK.system_name.LOG – (IPLCHECK Specific)
IFO.IFOX.JRN.NPAD                    – (Control Editor Specific)
IFO.IFOX.LOAD
IFO.IFOX.PACKAGE.INDEX
IFO.IFOX.PARMLIB
IFO.IFOX.PROFILE
IFO.IFOX.REPORT.INDEX
IFO.IFOX.SAMPLIB
IFO.IFOX.SISPCLIB
IFO.IFOX.SISPMENU
IFO.IFOX.SISPPENU
IFO.IFOX.SISPTABB
IFO.IFOX.SISPTABL
IFO.IFOX.USERLIB
********************* End of Data Set list ********************************
```

- **Authorize Load Library:** Follow the install instructions found in the Image FOCUS User Guide to authorize the LOAD library. Dynamically add this library to the APF list or add the dataset to the correct PARMLIB member. Refresh the APF list or perform an IPL.

  Standard Command to dynamically add an authorized library (issue from an operator console or an equivalent utility):

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

  Standard Command to refresh the APF list: (issue from an operator console or an equivalent utility):

  ```
  SET PROG=xx
  ```

- **Specify Image FOCUS Licensing Information:** Follow the Image FOCUS User Guide instructions for either "Fully Pre-Authorized" (no control cards needed) or "Self Authorized" (evaluation keys are required in PARMLIB member NSEPRM00).

- **Review additional Installation Checklists:** Review the additional installation checklists found in this chapter and follow the instructions if they apply to your environment.

5.2   Installation Checklist - Multi-Users using a VTAM Application

If you plan to allow multiple Image FOCUS users, you will need to create a VTAM application for Image FOCUS. Remember that you will need to vary the APPLID active before it can be used. If

you choose not to create and use a VTAM application, Image FOCUS can only be used in what is referred to as Recovery mode, which is a single user in dedicated terminal mode only.

5.2.1   Setting up VTAM APPLID

When installing Image FOCUS as a VTAM application to support multiple users, you will need to edit the following procedures and copy them into one of the PROCLIB datasets. For more information, see Section 5 of the Image FOCUS User Guide.

- **IFOM - Proc IFOM:** a started task that will remain active until stopped. The IFOM procedure is used to create a MASTER address space that will control all Image FOCUS users. This address should be started after an IPL and must be available in order for users to access the Image FOCUS VTAM Application. The IFOS procedure is used when a user logs onto the VTAM Application. A separate address space is created for each user.

- **IFOS - Proc IFOS:** a started task that is started by IFOM when each user logs on. This task will self-terminate when the user logs off.

5.2.2   VTAM Setup Tips

- You may need to add this application to your VTAM session management product.
- Verify that VARY ACTIVE was specified for the APPLID.
- If the APPLID is changed, validate the changes throughout.
- IFOM must have VTAM APPLID (IFO) specified in PARM (PARM line must have a comma in column 71).
- You may need to define SUBS (subsystem) IFO1 to the resident security system (RACF, etc.). This subsystem is needed for IFOM.
- Users must have read/write access. Otherwise "Not Authorized to create dataset" error messages may be issued during START IFOM.

5.3   User Logon and Security Considerations

It is important to remember that when a user logs on to Image FOCUS, in either VTAM or recovery mode, the user should use their normal USERID and PASSWORD. Image FOCUS will make the necessary SAF calls and verify security access with the resident security system. Access to Image FOCUS can be restricted in this way.

The user can enable an exception to this as described in Section 8 of the Image FOCUS User Guide. Also, consider security rights for the Image FOCUS address spaces. They will need access to all of the datasets that will be examined during an IPL inspection. This will include PARMLIB(s), PROCLIB(s), JES, VTAM, TCP/IP, and CICS datasets.

5.4   The Next Installation Step

The next step in the installation will be to update the PARMLIB dataset for Image FOCUS. The member &nssprfx.PARMLIB(NSEPRM00) controls the execution of IFOM, IFOBG and contains control statements for the temporary and permanent licensing of Image FOCUS provided to you by NewEra Software.

If you have not received these control statements, please email support@newera.com or call 800-421-5035 or 408-520-7100.

5.5   The State of the Install

Completing the installation to this point will allow the IFOM address to execute, users to logon to the VTAM application and Image FOCUS to perform its inspections on a request basis via the Workbench Selection.

5.6   Installation Checklist - Recovery Use

The IFOR started task is used for recovery purposes. The IFOR started task, with its local console support, allows Image FOCUS logons even if VTAM is unavailable. This is a single use application and the address will terminate when a user logs off.

- ▪ IFOR   - Proc for a single user recovery system.

5.7   Installation Checklist - Background Use

One of the major features of Image FOCUS is its ability to perform inspections in an automated, unattended method, using a supplied procedure – IFOBG. You should include this procedure in your testing of Image FOCUS.

Edit the IFOBG procedure (change the VOLSER) and copy to a PROCLIB dataset. Carefully review the edit instructions at the bottom of the member for the DD statement NSEMODEL. You may need to allocate a dataset with the correct name as Image FOCUS uses this name to build new datasets used to track changes; these are called package datasets. If this is an SMS dataset, follow the instructions within the PROC. We recommend that you specify an HLQ which SMS will not migrate the packages and reports.

Note: IFOBG must have write access to the HLQ. The NSEPRM00 member may require additional customization for IFOBG. Details of the changes are found in the Image FOCUS User Guide.

- ▪ IFOBG - Proc for the Background Monitor started task

Once again be aware of the security needs of this address space. In addition to reading the IPL datasets, this address space will also need to create and update other datasets. Review Section 8 of the Image FOCUS User Guide for security information.

5.8   Other Image FOCUS Components

The installation of other Image FOCUS components can be done on an as needed basis, but we will not implement them in these initial Getting Started tests.

The INSTLIB dataset contains an index member that explains the use of the other members in this dataset where these other members add further functions. They include running the Image FOCUS inspections in batch using IFOBAT, providing sample custom inspectors such as IFOREXX, and with MAILINST enabling an email service interface to Image FOCUS.

Before you begin to install additional components, please review the members carefully in order to make certain you make productive use of their capabilities.

5.9   Additional Customization

Additional customization can be done for either a single user or multiple users if required and the INSTLIB dataset contains sample profile programs for this purpose.

5.10   The Next Step

Now that the installation of the basic functions of Image FOCUS has been completed, we will address the use of the Image FOCUS product.

6   Image FOCUS Walk Through

In this section we will take a step-by-step approach to set up and run inspections in both the Workbench and Production selection.

6.1   Step 1: Log onto Image FOCUS

To begin using Image FOCUS, log onto the VTAM application set up in the prior chapter. The Image FOCUS Logon Panel will appear after the VTAM application has connected successfully with the IFOM address space. Log onto Image FOCUS with your standard USERID and password.

```
-------------------- Image Focus 15.0  Pxx LOGON PANEL ------------------
          PF3/PF15 ==> LOGOFF              PA2  == > RESHOW

  LOGON PARAMETERS:                               SECURITY PARAMETERS:

  USERID    ===>                                  PASSWORD     ===>

                                                  NEW PASSWORD ===>

  COMMAND   ===> PX PROFM                         CONFIRM NEW  ===>

                                                  GROUP IDENT  ===>


 USERID REQUIRED
```

After you have logged onto Image FOCUS, the Image FOCUS Primary Menu is displayed.

```
                    Integrity Control Environment: ICE

     P    Production   - Image Focus Production          Userid   - PROBI1
                                                         Time     - 17:24
     W    Workbench    - Image Focus Workbench           Terminal - 3278
                                                         System   - S0W1
     R    Recovery     - Image Focus Recovery            Applid   - IFOP
                                                            Image Focus 15.0
     C    Control      - TCE Administration/Selections       Patch Level 00

     V    Viewer       - IPLCheck Results Focal Point

     D    Definitions  - Definitions & Settings

                        **************************
                        * Control Task: DOWN     *
                        * Recovery     : DOWN     *
                        **************************

     X    Exit         - Terminate

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```

6.2   Step 2: Workbench Selections

The Workbench Selection option will assist in the analysis of each Image Component by providing Operating System and Subsystem Inspection, Release Analysis and Configuration Change Management Tools. Each of these tools will generate Inspection Logs or Change Reports that focus attention on non-conformities in and changes to critical configuration components and/or their integrity.

Select Option W (Image FOCUS Workbench) from the Image FOCUS Primary Menu. The Workbench Selections panel is displayed.

```
                    Image Focus - Workbench Selections
 Option  ===>

   I    Inspect     - SYSPLEX/IMAGE Inspection         Userid   - DEMO2
                                                       Time     - 09:02
   IR   Inspect/R    - Inspection w/Release Level       Terminal - 3278
                                                       System   - NEZ1
   A    Actions     - Copy Controlled Image Definitions Applid   - IFOC
                                                         Image Focus 15.0
   Y    Component   - Single Component Inspection         Patch Level  00

   R    Reports     - Inspection Reports

   O    Options     - Workbench Options

   N    Notify      - User Inspection Notification Settings

   X    Exit        - Return to the Image Focus Primary Menu



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```

6.3   Step 3: The Inspection Selection

Select Option I (Inspect) from the **Workbench Selections** panel. The **System Inspection Selection** panel is displayed.

The names of the Sysplex, Type S, and the Image, Type I, will be set to the defaults and have been discovered for the running system(s). You may change these names, if desired, by over-typing the defaults names of PROD0001 and IMAG0001. If you change these names, please use names that will be both unique and descriptive of the images you wish to inspect.

```
       Image Focus - System Inspection Selection      Row 1 to 2 of 2

 COMMAND ===>                                                 SCROLL ===>

 Line Commands: S - Select  X - Run Sysplex Inspection  W - Work with an Image
        F - Rediscover Sysplex Images (running system)
        N - Report Index (Browse, Print, Mail, Reports)
        I - Insert Image  IX - Insert Sysplex  D - Delete  R - Repeat

 LINE -- ENTRY --   SYS(PLEX) IPL   LOAD      ------ LAST INSPECTION ------
 CMD  TYPE  NAME      NAME    ADDR  PARM       DATE     TIME     RESULT
 ..    S  PROD0001  NEZ1PL
 ..    I  IMAG0001  NEZ1      0A80 0A83W8.1
 ***************************** Bottom of data *****************************
```

6.4   Step 4: Single Image Inspection

To work with one of the Images, place a W (Work with an Image) next to one of the images on the **System Inspection Selection** panel. The **Single Image Inspection** panel is displayed.

```
       Image Focus - Single Image Inspection      Row 1 to 1 of 1

 COMMAND ===>                                              SCROLL ===> PAGE
 Line Commands
   General:      S - Select  X - Inspect Now  C - Compare  N – Index
   Running Syste  m: U - Use Host IPL Parms      Y - Dynamic Audit
 LINE  IMAGE     SYS    IPL   LOAD        ----- Inspection Result -----
 CMD   NAME      NAME   ADDR  PARM         DATE     TIME    RESULT
 ***************************** Bottom of data *****************************
```

6.5   Step 5: Define Image for Single Image Inspection

Select the Image by placing an S next to the image on the *Single Image Inspection* panel. The ***Define Image for Single Image Inspection*** panel is displayed.

```
         Image Focus – Define Image for Single Image Inspection

                               (USER ASSIGNED NAME –
 IMAGE NAME       ==> IMAG0001    UP TO EIGHT CHARACTERS; DEFAULTS
                                 TO MVS SYSTEM NAME WHEN FOUND)
 MVS IPL INPUT
 MVS IPL ADDRESS ==> 1000        (FOUR DIGITS)
 MVS LOAD PARM   ==> 0CE3W1.1    (UP TO EIGHT CHARACTERS)
 SYSCAT SUFFIX   ==>             (IEA347A SPECIFY MASTER CATALOG PARAMETER)
 IEASYS00 SUFFIX ==>             (IEA101A SPECIFY SYSTEM PARAMETERS)
 ADD'L COMMNDxx  ==> IF          (SEE DOCUMENTATION)
 FILTERING INPUT
 HARDWARE NAME   ==> VM–TOKEN    (PROCESSOR NAME)
 LPAR NAME       ==>             (LPAR NAME)
 VM USERID       ==> ETPGMLN     (MVS VM USERID)
 ADD'L PARMLIB INPUT           (Concatenated in front of LOADxx Parmlibs)
 DATASET         ==>
 INSPECTION AREA    ---System--- ----Subsystems----- -Supplemental- --Custom--
 PROCESSING OPTIONS  OPSYS DSRPT JESx VTAM TCPS CICS LOAD MBRS CSDS CST1 CST2
 INSPECTION      ==>     Y     Y    Y    N    N    Y    N    N    Y    N    N

 COMMAND ===>
```

This panel defines the details of the inspection request including the Name, IPL address and loadparm. Confirm the IPL information and make corrections as needed. Note that the fields for SYSCAT and IEASYS suffix will only be available if your loadparm value requests prompting.

6.6   Step 6: The ADD'L COMMNDxx field

The ADD'L COMMNDxx field is important to installations that use a method other than a COMMNDxx member to start one or more of the major Subsystems - JES, VTAM, TCP/IP and CICS. The suffix name for this user created supplementary member must be provided on this panel.

If your site starts the major subsystems of JES, VTAM, TCP/IP and/or CICS by using a COMMNDxx member in PARMLIB, or if you do not wish to inspect these Subsystems, you may proceed to Step 7.

In order to provide **Image FOCUS** with the start location and JCL for these subsystems, the start command must be part of the IPL path, so **Image FOCUS** will look for these in the COMMNDxx member. If the start commands are not present, we ask that you provide them to **Image FOCUS** through an auxiliary COMMNDxx member to be used only by **Image FOCUS** during its inspections. Create a new COMMNDxx member that contains the start command for the subsystems. Be sure to include any start parameters that are needed. A sample COMMANDxx Member is shown below.

```
EDIT       USER.PARMLIB(COMMNDNE) - 02.01              Columns 00001 00072

Command ===>                                            Scroll ===> PAGE
********************************* Top of Data *********************************
 000001 COM='S TCPIP,SUB=MSTR'
 000002 COM='S NET'
```

Once this member has been created, request the use of the member by placing the suffix name on this panel on the ADD'L COMMNDxx line. Then request the subsystems to be included in the inspection by setting the value to Y below each label at the bottom of this panel, as seen in the *Define Image for Single Image Inspection* panel.

6.7   Step 7: Submit the Inspection

When finished with the updates to the *Define Image for Single Image Inspection* panel, press <ENTER> to submit the inspection. The inspection will begin and a small display will appear showing the progress of the inspection.

```
'--------------------------'
|   OPSYS    *PROCESSING*   |
'--------------------------'
 Performing Image Inspection
```

6.8   Step 8: View the IMAGE Report Index

When the inspection has completed (Step 7), **Image FOCUS** will display the *Image Report Index* panel. This panel provides access to the complete report or any portion of the report by making a selection from the list. The index can be sorted by Results (default), Member or Sequence.

Review the results of the inspection and make any changes to your system. Then rerun this final step in order to correct any problems or defects that **Image FOCUS** may have identified.

If you need assistance to analyze the inspection results, please contact support@newera.com or call us at 800-421-5035 or 408-520-7100. We will ask you to send us a full **Image FOCUS** report for our analysis.

```
   Image Focus -  IMAGE    Report Index for  IMAG0001      Row 1 from 194

Line Commands:  S - Select  E - Edit Mode
Report    Line Commands             Report    Line Commands
INDEX     SF M  P  ME MX
Report Filtering for SF, M, and P line commands:
Report Level  ==> 1     (1, 2, 3, or 4)   Member Display ==> Y    (Y/N)


LINE Member      Status       Description
CMD  Name        Code
..  ++ALL        ERROR        Inspection Log 15.0
..  -OPSYS       ERROR        Operating System Inspection
..  -JES2        WARNING      JES2 Subsystem Inspection
..  -JES3        OK           JES3 Subsystem Inspection
..  -HCKR        OK           Health Checker Inspection
..  -VTAM        OK           VTAM Subsystem Inspection
..  -RESOLVE     OK           RESOLVER Data Inspection
..  -TCPIP       OK           TCPIP Profile Inspection
..  -TCPDATA     NO-INSP      TCPIP Data Inspection
..  -TELNET      OK           TELNET Profile Inspection
..  -FTP         OK           FTP Profile Inspection
..  —CICS        OK           CICS SIT Inspection
..  -LOAD        OK           LOAD Module Inspection
..  -MBRS        OK           MBRS Inspection
..  -CSDS        AUDIT        CSDS Inspection
..  -CUST1       OK           Custom Inspection 1
..  -CUST2       NO-INSP      Custom Inspection 2
..  -REPORTS     ERROR        Compliance Documentation
```

6.9   Step 9: View the Inspection Report

A sample of an inspection report can be reviewed by placing an S next to the ++ALL line on the
Image Report Index panel. This report provides complete information regarding all of the components
and their status and use by the inspected image.

```
 BROWSE     INDEXED_REPORT----MEMBER=++ALL           Line 00000000 Col 001 080
******************************* Top of Data ********************************
IFO0999I REPORT FOR IMAGE IMAG0001 SYSTEM S0W1      ERROR.
IFO1000I  REPORT GENERATED BY FOREGROUND EXECUTION ON 09/18/2017 AT 15:01:36.
IFO1001I  SYSTEM ID=S0W1; SYSTEM NAME=S0W1; SYSPLEX NAME=SVSCPLEX.
IFO0000I  REPORT DATASET:  'DEMO1.IFO.REPORT.D2017138.T1440194'.
IFO1008I  PACKAGE INDEX DATASET: 'IFO.IFOP.PACKAGE.INDEX'.
IFO00765I  LICENSED TO NEWERA SOFTWARE INC. (SITE EDITION).
IFO00741I  INSPECTION=Y; STORE PACKAGE=N; RELEASE=.
IFO0727I  Image Focus 15.0.
|
IFO0900I IPL REQUESTED FROM UNIT 1000.
IFO0922I SUPPLIED LOADPARM IS 0CE3W1.1.
IFO0901I  LOADPARM IODF UNIT=0CE3 SPECIFIED.
IFO0901I  LOADPARM LOADW1 SPECIFIED.
IFO0950I  LOADPARM IMSI SPECIFIED AS OR DEFAULTED TO ".".
IFO0901I  LOADPARM IEANUC01 SPECIFIED.
IFO0712I  HWNAME VM-TOKEN SPECIFIED.
IFO0712I  VMUSERID ETPGMLN SPECIFIED.
IFO0712I  ADD'L COMMNDXX IF SPECIFIED.
|
IFO0905I  IPL UNIT 1000 IS VOLUME VIMVSB.
IFO0905I  IODF UNIT 0CE3 IS VOLUME VPMVSB.
IFO0611I  IPL UNIT ADDRESS: RUNNING SYSTEM=1000; TARGET SYSTEM=1000.
IFO0611I  IODF UNIT ADDRESS: RUNNING SYSTEM=0CE3; TARGET SYSTEM=0CE3.
IFO0611I  LOADXX SUFFIX: RUNNING SYSTEM=W1; TARGET SYSTEM=W1.
IFO0611I  IEANUC0X SUFFIX: RUNNING SYSTEM=1; TARGET SYSTEM=1.
IFO0611I  HWNAME: RUNNING SYSTEM=VM-TOKEN; TARGET SYSTEM=VM-TOKEN.
IFO0611I  LPARNAME: RUNNING SYSTEM=-BLANKS-; TARGET SYSTEM=--NONE--.
IFO0611I  VMUSERID: RUNNING SYSTEM=ETPGMQC; TARGET SYSTEM=ETPGMLN.
|
IFO0998I  SYS1.SVCLIB FOUND ON VOLUME VIMVSB.
IFO0757I   1 DASD EXTENTS.
IFO0938I ALLOCATING SVCLIB DATASETS.
IFO0138I  ALLOCATING SYS1.SVCLIB; VOL=VIMVSB.
IFO0151I     ALLOCATED TO SYS00037.
|
IFO0998I  SYS1.NUCLEUS FOUND ON VOLUME VIMVSB.
IFO0757I   1 DASD EXTENTS.
IFO0795E  SYS1.NUCLEUS HAS INVALID ATTRIBUTES.
IFO0796E     SECONDARY ALLOCATION NOT ALLOWED.
```

Continue your review and analysis of this report and rerun the inspection as needed in order to
reach a status for your image that you would like to have monitored on an automatic basis using
the Production Selection and IFOBG.

6.10   Step 10: Production Selections

The Production Selection option supports functions that are used to enable the interval monitoring of an **Image FOCUS**-managed Sysplex or Image. Once active, this critical monitoring function will call the **Image FOCUS** Inspection Server as scheduled to perform a Sysplex-wide validation of the current configuration components that define a running production environment.

As directed by optional settings, Packages are updated and "Need to Know" notices sent.

 Return to the *Image FOCUS Primary Menu* and select Option P for Production Selection. The *Production Selections* panel will be displayed.

```
                    Image Focus – Production Selections

 I    Inspect      – Controlled Image Settings          Userid   – DEMO1
                                                        Time     – 15:11
 A    Actions      – Controlled Image Actions           Terminal – 3278
                                                        System   – S0W1
 O    Options      – Inspection Policies                Applid   – IFOP
                                                         Image Focus 15.0
 C    Control      – Inspection Status and Control        Patch Level  00

 D    Display      – Running System Display

 R    Reports      – Inspection Reports

 P    Package      – Configuration Packages

 N    Notify       – Inspection Notification Settings


 X    Exit         – Return to the ICE Primary Menu

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 Option  ===>
```

6.11   Step 11: Controlled Image Actions

The Production Selection of **Image FOCUS** manages the inspection requests that have been promoted from user created inspections built in the Workbench Selection. The Production Selection does not have an edit facility, so all inspection requests must be created and changed in the Workbench, then promoted to Production. Select Option A from the ***Production Selections*** panel. The ***Controlled Image Actions*** panel is displayed.

```
       Image Focus - Controlled Image Actions          Row 1 to 12 of 12

Line Commands:
P - Promote Sysplex   PR - Promote Sysplex w/replace   D - Delete Sysplex

Workbench   ----------------->   Controlled
LINE -- ENTRY --   SYS(PLEX) IPL      -- ENTRY --   SYS(PLEX) IPL
CMD  TYPE  NAME      NAME     ADDR    TYPE  NAME      NAME     ADDR
..    S  PROD0001  SVSCPLEX
..    I  IMAG0001  S0W1      1000
..    I  IMAG0002  S0W1      1000
****************************** Bottom of data ******************************
```

6.12   Step 12: Promote Inspection Definition

Place a P on the Sysplex (Type S) line of the ***Controlled Image Actions*** panel. This will move the Inspection definition from the workbench to the production area of **Image FOCUS** (***Production Definition Actions*** panel). This process needs to be repeated only if the definition request changes or a new request is to be added.

```
       Image Focus - Controlled Image Actions          Row 1 to 12 of 12

Line Commands:
P - Promote Sysplex   PR - Promote Sysplex w/replace   D - Delete Sysplex

Workbench   ----------------->   Controlled
LINE -- ENTRY --   SYS(PLEX) IPL      -- ENTRY --   SYS(PLEX) IPL
CMD  TYPE  NAME      NAME     ADDR    TYPE  NAME      NAME     ADDR
..                                    S  PROD0001  SVSCPLEX
..                                    I  IMAG0001  S0W1      1000
..                                    I  IMAG0002  S0W1      1000
****************************** Bottom of data ******************************
```

6.13   Step 13: Execute Inspection Request

Now that the inspection request has been promoted, it is available to be executed by the monitoring started task – IFOBG. Set up and control of this started task is reached by first returning to the *Production Selections* panel, and then selecting Option O (Inspection Policies). The *Inspection Policies* panel is displayed.

```
                      Image Focus – Inspection Policies

  Control Task Enabled     ==> Y          (Y/N)
  Job Scheduler Controlled ==> N          (Y/N)


  Start Date  ==> 09/01/2017  (MM/DD/YYYY)
  Start Time  ==> 00:00       (HH:MM)
  Interval    ==> 01:00:00    (DD:HH:MM)     Days:Hours:Minutes
  Notify      ==>             (USERID)

Report Dataset:                          Package Control:
  1st  Level Index ==> IFO         Maximum Packages per PDS ==> 30
  2nd  Level Index ==> IFOPBG         (Set to zero for no limit)
  3rd  Level Index ==> REPORT
  Reports to keep ==> 30
  CYLs Primary/Secondary ==> 2    / 2
Mail Report Option  ==> N    (reports to mail)
  A – all; N – none; W – warnings or errors; E – errors; S – success
Bypass Package Store ==> N       N – if changes always store packages
  W – don't store if warnings or errors; E – don't store if errors
  Override Inspections with the Options Below ==> Y    (Y/N)
  Processing Options: OPSYS DSRPT JESx VTAM TCPS CICS LOAD MBRS CSDS CST1 CST2
Inspection       ==>     Y     Y     Y    Y    Y    N    N    N    N    N    N
Store Package    ==>     Y     Y     N    N    N    N    N    N    N    N    N
COMMAND ===>                                            SCROLL ===> PAGE
```

Starting at the top of this panel, make sure the Monitor Task Enabled is set to Y. This will allow the started task to start and execute the inspections. The date and time need not be changed since the inspections will begin if the stated time and date have past. You may want to change the Notify field so that you will be able to see sample messages created by **Image FOCUS**. Change the Report Dataset fields. Specify the same 1st Level Index and 2nd Level Index to match the HLQ (&nssprfx) symbolic defined during the **Image FOCUS** installation (Chapter 5).

Other changes to make to this panel are near the bottom. Change the Bypass Package Store field to N. This will allow for the creation of a Blueprint even though errors may appear. We recommend this for testing only and this action should be reviewed before actually deploying **Image FOCUS** as an integrity monitor. Change the Override Inspections below to a value of Y, and change the option matrix so that the Inspection and store package options for the OPSYS and DSRPT are set to Y. JES, VTAM, TCP/IP and CICS can optionally be set to Y. These settings will ensure ALL inspection requests promoted into production will be inspected using the same settings and **Image FOCUS** will perform Blueprint stores and compares. During the execution of these inspections by IFOBG, the Monitor option panel will not be accessible.

6.14   Step 14: Start the IFOBG Started Task

The started task BACKGROUND (IFOBG) is the platform from which all Inspection and Monitoring activity is run. Knowing that it is functional and running is critical. To ensure that you are informed of its status, this notice is updated each time you enter the Primary Menu. If the Background is "DOWN", you should go directly to the Production Selection. Select the Status Monitor Option to determine the reason why.

It is recommended that IFOBG be run continuously. Upon completion of the changes in Step 13, press <ENTER> or <PF3>. This will save these settings and start the IFOBG started task. The inspection will be run, a report created, and the initial Blueprint will be stored for defined image(s).

Return to the **Production Selections** panel and select Option C (Inspection Status and Control) to monitor the IFOBG started task. The **Control Task Status and Control** panel is displayed. Should you need to stop this started task, restart it, or to refresh the setting, the commands available on this panel provide those controls. This task can also be started or stopped using normal console commands.

```
            Image Focus – Control Task Status and Control

COMMAND ===>
------- CONTROL TASK ESSENTIALS ------.----------- LOGON INFO --------------
REQUIRED   ACTUAL    | Userid : DEMO1
Enabled          :   YES  : YES     | Prefix : DEMO1
Status           :RUNNING: RUNNING  | STCname: IFOPS
Sysplexes Promoted: >0   : 2        | LU/Cons: TCP00004
Sysplexes Enabled : >0   : 2        | System : S0W1
| Sysplex: SVSCPLEX
------- CONTROL TASK DETAILS --------|------------ GENERAL ----------------
JobnScheduler Controlled:  NO        | Company: NEWERA SOFTWARE INC. (SITE
Jobname   : IFOPBG                   | Status : LICN LICENSE
Userid    :          Notify:         | Feature: 23VTLMP12ESMFH12
Start Date: 09/21/2017  (MM/DD/YYYY) | Status : llllllllllllll..
Start Time: 00:00       (HH:MM)      | Serial : xx78E0
Interval  : 01:00:00    (DD:HH:MM)   | Type   : 2097
Current   : 09/18/2017  15:42:21     | Model  : 722
Interval Base  : 09/18/2017  15:27:39| Subs   : IFPM        Appl: IFOP
Last Inspection: 09/18/2017  15:27:39| IFO Rel: 15.0
Next Inspection: 09/19/2017  15:27:39| MVS Rel: Z/OS V2R3  FMID: HBB7770
-------------------------------------'------------------------------------

ACTION===>       (blank – update display; S – Start; P – Stop; C – Cycle now)
Note: Allow up to one minute for actions to take effect.
```

6.15   Step 15: Review Inspection Reports

Upon completion of the inspection, the reports can be reviewed by returning to the *Production Selections* panel and select Option I (Controlled Image Settings). The *Controlled Image Settings* panel is displayed. By placing an N next to the image, the index for the most recent report will be built and made available. Review the reports as in Step 9. Rerun the inspections in the Production Selection by using the C (Cycle) command on the monitor status screen.

```
        Image Focus – Controlled Image Settings            Row 1 to 2 of 2

Line Commands: S – Select    N – Index (Browse, Print, Mail, Reports)

LINE -- ENTRY --    SYS(PLEX) IPL  USERID/  INSP  ------ LAST INSPECTION ------
CMD  TYPE  NAME        NAME   ADDR LOADPRM ENABLE    DATE      TIME    RESULT
..    S  PROD0001   SVSCPLEX        PHARL3   Y..  09/18/2017   15:26   ERROR
..    I  IMAG0001   S0W1      1000 0CE3W1.1  Y..  09/18/2017   15:21   ERROR
***************************** Bottom of data ******************************
```

6.16   Step 16: Confirm Blueprint

After the inspection has completed, and if you have used the settings as documented in Step 13, a Blueprint for this image was created. Return to the *Production Selections* panel and select Option P (Configuration Packages). The *Stored Package Operations* panel is displayed.

```
             Image Focus – Stored Package Operations

 B    Browse        – Browse Packages              Userid   – DEMO1
                                                   Time     – 15:51
 C    Compare       – Same Image Compare           Terminal – 3278
                                                   System   – NEZ1
 CX   Compare       – Cross Image Compare          Applid   – IFOP
                                                    Image Focus 15.0
                                                    Patch Level  00




 X    Exit          – Return to the previous menu

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 Option  ===>
```

6.17   Step 17: List all Image Package Datasets

Select Option B (Browse) from the **Stored Package Operations** panel. The **Stored Package Index** panel is displayed. It contains a selection list of all Image package datasets.

```
        Image Focus – Stored Package Index              Row 1 to 9 of 9

IMAGE PACKAGE INDEX DATASET: IFO.IFOP.PACKAGE.INDEX
VOLSER: VPWRKH

USING THE SELECTION LISTS THAT FOLLOW, SELECT THE SYSTEM IMAGE BY NAME
AND THEN SELECT THE DATE OF THE IMAGE PACKAGE FOR WHICH TO BROWSE.

CMD   IMAGE      VOLUME    DSNAME

..    IMAG0001  VPWRKG    IFO.IFOP.PACKAGE.IMAG0001
**************************** Bottom of data ******************************
```

6.18   Step 18: Select an Image

Select the image you have inspected from the **Stored Package Index** panel. This will display the list of available packages and the reports created in support of the Blueprint.

```
        Image Focus – Select Stored Package         Row 1 to 14 of 24

IMAGE PACKAGE DATASET: IFO.IFOP.PACKAGE.IMAGJES2
VOLSER: VPWRKG

Line Commands: S – Select Package   R – Select Report

CMD   Date     Result  ----------- Report Data Set Name -----------
..    09/08/15   W     IFO.IFOPBG.REPORT.D2017008.T1644411
**************************** Bottom of data ******************************
```

6.19   Step 19: Request Blueprint Report

Request the most current Blueprint reports by placing an R on the selection line on the **Select Stored Package** panel. The **Report Entry Selection** panel displays the reports created with this Blueprint. These reports can be selected and reviewed as in Step 8.

```
        Image Focus – Report Entry Selection         Row 1 to 7 of 7

Line Commands: S – Select Report

LINE   REPORT   INSP.    ENTRY    RECORD    -------- Inspection --------
CMD    TYPE     ID       NAME     COUNT        DATE      TIME    RESULT
..   LOG      OPSYS    AUDITLOG    58      09/08/2017  16:50:  SUCCESS
..   IMAGE    OPSYS    IMAG0001   9937     09/08/2017  16:45:  ERROR
**************************** Bottom of data ******************************
```

6.20   Step 20: Update PARMLIB

Now that we have a Blueprint stored, we need to make a change to a PARMLIB member to demonstrate the **Image FOCUS** ability to detect and report changes. If you created PARMLIB member COMMNDNE in Step 6, use ISPF Edit to modify this member. The example below shows a change made to COMMNDNE (adding line 3 - "THIS IS A TEST LINE TO SHOW CHANGES"). If you did not create PARMLIB member COMMNDNE, you can edit any other PARMLIB member that was used during the inspection process.

```
EDIT       USER.PARMLIB(COMMNDNE) - 02.01            Columns 00001 00072

Command ===>                                          Scroll ===> PAGE
******************************** Top of Data ******************************
 000001 COM='S TCPIP,SUB=MSTR'
 000002 COM='S NET'
 000003 THIS IS A TEST LINE TO SHOW CHANGES
```

6.21   Step 21: Rerun Inspections

In this step, we will rerun **Image FOCUS** to discover the PARMLIB change and to analyze the change for any problems.

Return to the *Production Selections* panel and select Option C (Inspection Status and Control), and then use the "C" command to recycle the IFOBG task.

This will run a new inspection, create new reports and a new Blueprint. After the inspection is complete, return to the Return to the *Production Selections* panel and select Option P (Configuration Packages).

Repeat Step 19 and review the new reports. Look at the change summary, CHGSUM, and change detail, CHGDET, reports.

To see the changes between any two Blueprints, return to the *Stored Package Operations* panel and select Option C (Compare).

From the *Select New Package* panel, place an S next to your selected image. Two Blueprints will be available. Select one Blueprint and press <ENTER>. Then select the second Blueprint and press <ENTER>.

```
       Image Focus - Select New Package            Row 1 to 13 of 24

IMAGE PACKAGE DATASET: IFO.IFOP.PACKAGE.IMAGJES2
VOLSER: VPWRKG

SELECT THE DATE OF THE IMAGE PACKAGE FOR WHICH TO PERFORM THE COMPARE.
THIS WILL BE CALLED THE "NEW" PACKAGE.

CMD    Date     Result
..     09/08/17    W
..     09/08/17    E
```

6.22   Step 22: Compare Blueprints

After your selection has been made, a confirmation screen will show the Blueprints to be compared. Press <ENTER> to proceed with the compare.

```
                    Image Focus - Compare Confirmation

     IMAGE COMPARISON WILL NOW COMPARE THE CONTENTS OF THE SELECTED
     PARAMETER LIBRARIES.

       ----- Old IPL Parameters ------   ----- New IPL Parameters -------

       DATE:                 09/08/17    DATE:                 09/08/17
       IMAGE NAME:           IMAGJES2    IMAGE NAME:           IMAGJES2
       IPL ADDRESS:          1000        IPL ADDRESS:          1000
       LOAD PARM:            0CE3W1.1    LOAD PARM:            0CE3W1.1
       SYSCATxx SUFFIX:                  SYSCATxx SUFFIX:
       IEASYSxx SUFFIX:                  IEASYSxx SUFFIX:
       HWNAME:               VM-TOKEN    HWNAME:               VM-TOKEN
       LPARNAME:                         LPARNAME:
       VMUSERID:             ETPGMQC     VMUSERID:             ETPGMQC


     IF OLD AND NEW IPL PARAMETERS ARE DIFFERENT THEN THEY MAY BE THE
     CAUSE OF DIFFERENCES THAT THIS COMPARISON WILL NOT DETECT.

     PRESS ENTER TO BEGIN THE COMPARISON

COMMAND ===>
```

6.23   Step 23: Select Members with Differences

The compare will show a list of members compared and will display those that have a difference. Select a member with the * DIFFERENT * status to view the changes.

```
Image Focus - Image Comparison Summary      Row 1 to 16 of 130

Line Commands:  S- Compare Details  BN- Browse New  EN- Edit New
BO- Browse Old  EO- Edit Old
SELECT ONE MEMBER BELOW:
CMD  MEMBER          STATUS       VOLUME    DSNAME
..   LOADW1          SAME         VPMVSB    SYS1.IPLPARM
..   NUCLSTSV        SAME         VPMVSB    SYS1.IPLPARM
..   IEASYMW1        SAME         VTLVL0    LVL0.PARMLIB
..   IEASYMSV        SAME         VTMVSG    SVTSC.PARMLIB
..   IEASYMVN        SAME         VPMVSD    VENDOR.PARMLIB
..   IEASYS00        SAME         VTLVL0    LVL0.PARMLIB
..   COMMNDNE    * DIFFERENT *  OS39M1    USER.PARMLIB
```

6.24 Step 24: View the Comparison Report

Select the member and the comparison report will display all changes in the member.

```
BROWSE    SYS04318.T155114.RA000.IFOS.R0100049      Line 00000000 Col 001 080
 Command ===>                                              Scroll ===> PAGE
********************************* Top of Data **********************************
  ISRSUPC  -   MVS/PDF FILE/LINE/WORD/BYTE/SFOR COMPARE UTILITY- ISPF FOR z/OS
NEW: SYS04318.T155114.RA000.IFOS.R0100048(COMMNDNE)          OLD: SYS04318.T1551

                   LISTING OUTPUT SECTION (LINE COMPARE)

ID      SOURCE LINES
    ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+-

I - THIS IS A TEST LINE TO SHOW CHANGES

  ISRSUPC  -   MVS/PDF FILE/LINE/WORD/BYTE/SFOR COMPARE UTILITY- ISPF FOR z/OS
NEW: SYS04318.T155114.RA000.IFOS.R0100048(COMMNDNE)          OLD: SYS04318.T1551
```

6.25 Step 25: Conclusion

This concludes your testing of the fundamental capabilities of **Image FOCUS**. With the examples and work you have done up to this point, you will have a good foundation for your continued use of **Image FOCUS**.
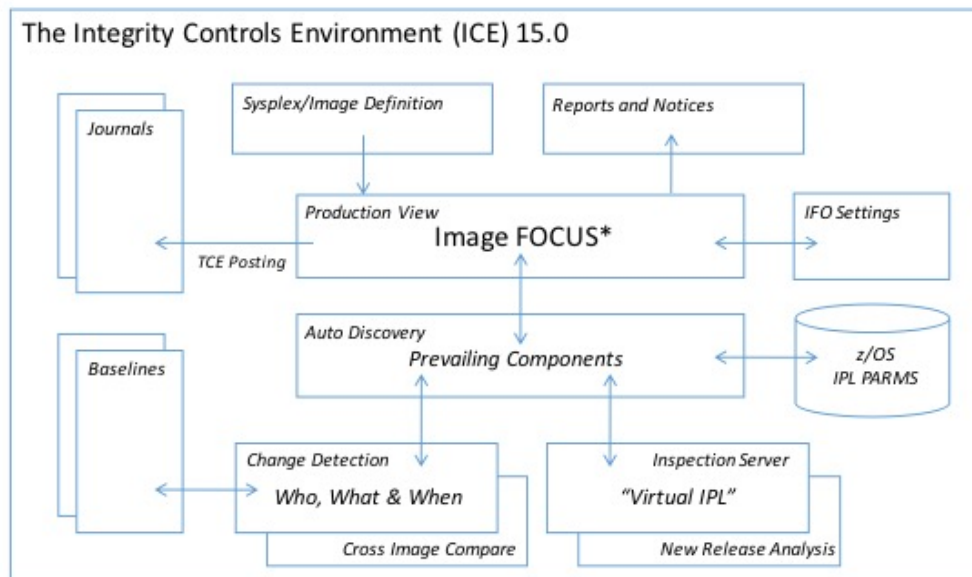
7   About Image FOCUS

Image FOCUS ensures, to the extent possible, the maximum availability of a z/OS Sysplex and its Images. To accomplish this, the power of Image FOCUS and its companions, Change Detection and Inspection Server, are grouped into "Views". Each "View" – Production, Workbench and Recovery is designed to support a focused set of management activities: New Release Analysis, Configuration Change Analysis and Image/Sysplex Inspection. Each enables the Image FOCUS user to quickly gain a full understanding of the complete z/OS configuration.

NewEra Software

z/OS Integrity and Compliance

About Image FOCUS - Product Overview - Production View Detailed

The Integrity Controls Environment (ICE) 15.0

| Journals |
| Sysplex/Image Definition |
| Reports and Notices |
| Production View — Image FOCUS* | IFO Settings |
| TCE Posting |
| Baselines |
| Auto Discovery — Prevailing Components | z/OS IPL PARMS |
| Change Detection — Who, What & When |
| Inspection Server — "Virtual IPL" |
| Cross Image Compare |
| New Release Analysis |

* In addition to the z/OS Operating System Image FOCUS supports JES2/3, VTAM, TCPIP, CICS, MODULES and MEMBERS

7.1   Why Image FOCUS

MVS and z/OS-based systems often evolve into a complex of system Images coupled together to form a Sysplex. Such a Sysplex will often function as the organization's back office, processing and storing critical customer and financial data. Information System customers and users often gain access to this back office data via the Internet through presentation applications housed on UNIX and/or Windows servers. The availability of each of these elements in an Information System is critical to the success of the organization and its partners, its customers, and its employees, and increasingly to comply with government regulations.

7.2   The Inspection Server

The Image FOCUS Inspection Server is a collection of Operating System and Subsystem "Rule Sets" that were developed from available IBM documentation and real-world experiences. These "Rule Sets", which include an understanding of the configuration syntax and the IPL search order process, are used by the Image FOCUS Inspection Server to perform a "Virtual IPL" of the Sysplex, its Images and their Subsystems. One of the results we generate during the "Virtual IPL" is an Inspection Log; we call the others "Packages" and "Notices".

7.3   Inspection Reports

The Inspection Log contains the step-by-step detail of the IPL. It begins with the validation of the IPL Unit and LOADPARM Address and it continues from there, processing each PARMLIB and PROCLIB member for syntactical correctness and related data sets for referential integrity and attribute characteristics. Sysplex relationships defined within the Sysplex parameters of an Image are crosschecked with other Images to ensure Image eligibility in the Sysplex. In final form, the Inspection Report will appear to you as a very detailed IPL Logic Map. This Map documents and validates each and every step of the "Virtual IPL" process and often will become an integral part of your system documentation. Elements which fail to validate during Inspection are flagged as Errors, Warnings or Notices. As you review your first set of Inspection Logs, you will find that, depending on certain optional settings, the logs can be quite lengthy. It is common for a full Inspection Log to exceed a length of 10,000 records. Several tools are provided within Image FOCUS to help you limit the output of an Inspection Log and/or quickly navigate to points of interest.

7.4   Notice of Findings

With each designated Monitor Interval, the Image FOCUS Inspection Server performs a complete check of the Sysplex and its Images. During this automated process, the Inspection Server is looking for configuration changes by comparing the current configuration to the last valid Package "Blueprint". The content of the current members and configuration files would be used to re-IPL the system if it were to fail or to evaluate potential problems. If changes or problems are detected, notification messages are sent.

7.5   Change Detection

The Package is the "Blueprint" of a valid, viable Sysplex and/or Image. It contains the content of the members and configuration files used in the IPL process. Each Image Package is automatically updated and maintained by the Image FOCUS Inspection Server during a Monitoring Interval. This continuous update process ensures you that there is a working copy of the most current configuration. These Packages are used to automatically detect configuration changes, pinpoint configuration problems and make data set repairs.

It is important to note two things: first, the importance of the Package in this process and, second, that by default Packages ARE NOT updated when problems are detected. This ensures that you always have a copy of the configuration components that comprise a viable IPL.

## 7.6   The Integrity Controls Environment (ICE)

The Integrity Controls Environment (ICE) is a VTAM Application that provides access to the ICE Applications Image FOCUS, The Control Editor and The Supplementals. When you are ready to move beyond the functions of IPLCheck, NewEra Technical Support can provide you with the required License Keys. Contact them via Email at support@newera.com.

z/OS Configuration Management and Compliance – ICE 15.0 - Overview
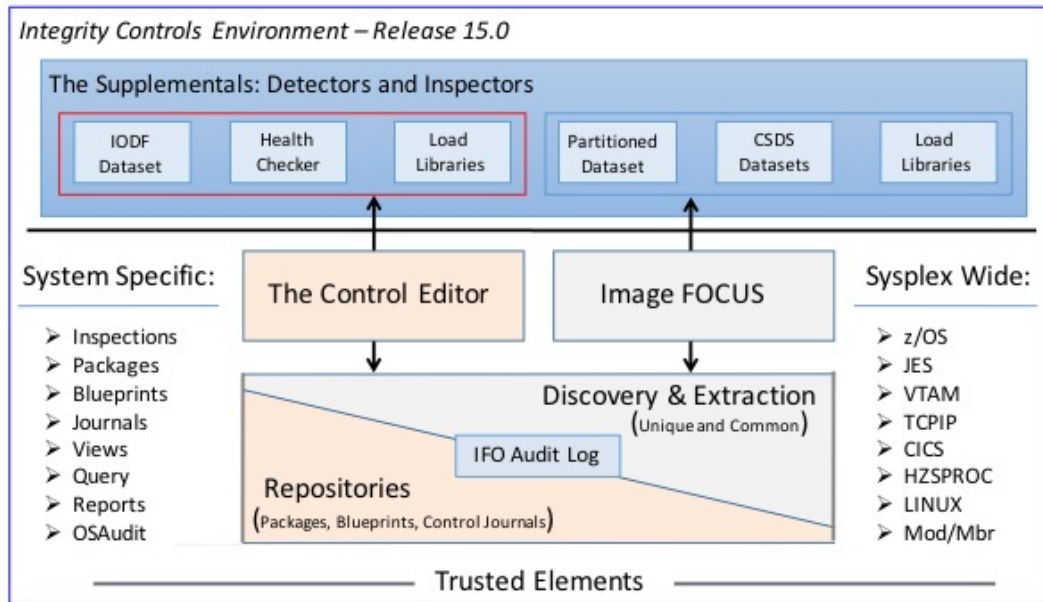
7.6.1 Image FOCUS

The Image FOCUS Application set automatically discovers, extracts, blueprints and inspects the z/OS configuration components that comprise a Sysplex and its Images. Process findings are shared with other ICE applications via a Sysplex Audit Log.

7.6.2 The Control Editor

The Control Editor is a "Compensating Control" that provides a layer of non-invasive security over the z/OS configuration components housed in defined sets of partitioned datasets. TCE significantly enhances the level of security generally provided by the site's External Security Manager (ESM).

7.6.3 The Supplementals

These optional ICE applications provide both additional Inspection and Monitoring functions that extend the scope of the ICE processing to include: Load Libraries, CSDS Datasets, IODF Datasets, named System Health Checkers, RACF and DB2 Configurations.

7.7   What Users are Saying about Image FOCUS

"…I wish we had our own z/OS *Sandbox* a place where we could build and test future systems and train the new guys and gals on how to configure and support z/OS; a place where we could teach them what it's really all about. But in our shop system availability is everything and we just didn't have the resources to set things up the way we wanted. Image FOCUS solved all of that for us. With its "Virtual IPL" capabilities today we can execute a virtual start of z/OS anytime we like without impacting our business systems."

"…Money is always a problem in our shop, it's become a way of life to look for the best value, highest return on investment in everything we do. We've been following NewEra and its z/OS Inspection Technology for a long time and were convinced it could help us guard against future IPL failures. We wrote and submitted our justification for approval but management just couldn't give the "Green Light" because of other financial priorities. I am happy to say that IPLCheck solved all financial concerns. We acquired a license for our six production LPARs. Management now thinks of LPAR Inspection as *MUST HAVE*. Image FOCUS is next on our list!"

"…Our system audit reviews are done as part of our financial audit process. We have been written up several times for not having adequate documentation of actual changes. We do a good job of documenting what we are *going to do* but not what we *actually did*. Image FOCUS filled this hole in our change management process by automatically building configuration baselines, using them to detect and report changes. This really solved two problems for us. First, we're off the *Hot Seat; second, we now have an ongoing process that ensures a full backup of a viable configuration for each Image.*"

"…The thing we like best about the way NewEra is approaching the distribution of its system software environment and applications is that it allowed us to get started with minimal effort and expense, focusing on what we believed to be our most critical issue, LPAR integrity. As we get comfortable with the process we can, at any time, move on to more global z/OS concerns: Sysplex and Subsystem Inspections, Baselines, Change Detection, Release Analysis, Compensating Configuration Control and IODF Configuration Management. We're not certain we'll ever need them but our business is growing and that to us means more regulations and more oversight. It's good to know that the tools we'll need to solve these complex problems are already installed and available."

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