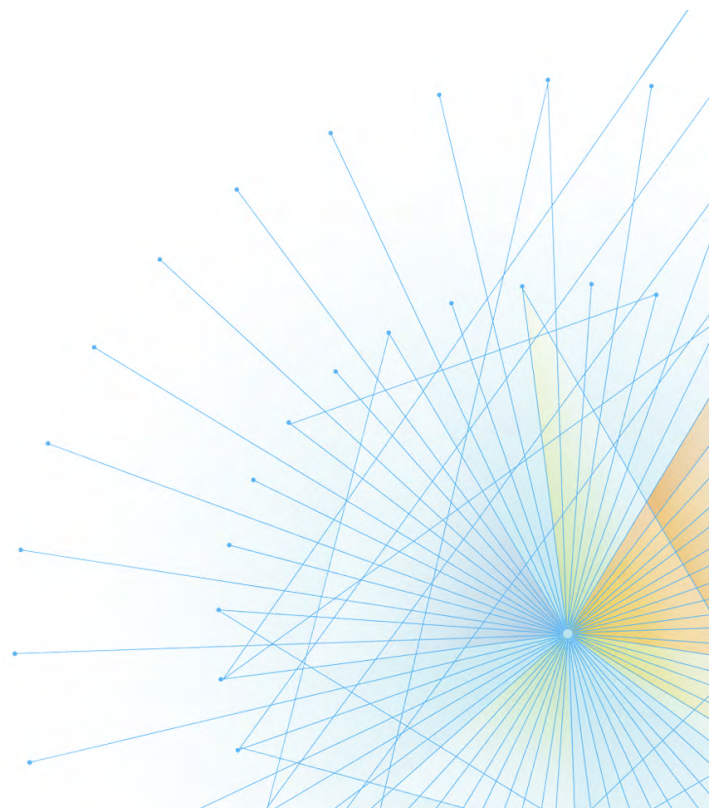




The Mainframe Software Partner For The Next 50 Years

# Abend-AID Fault Analytics Installation and Configuration Guide

Release 19.04



Please direct questions about Abend-AID Fault Analytics  
or comments on this document to:

**Compuware Support Center**

**<https://go.compuware.com/>**

This document and the product referenced in it are subject to the following legends:

Copyright 1999-2019 Compuware Corporation. All rights reserved. Unpublished rights reserved under the Copyright Laws of the United States.

U.S. GOVERNMENT RIGHTS-Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in Compuware Corporation license agreement and as provided in DFARS 227.7202-1(a) and 227.7202-3(a) (1995), DFARS 252.227-7013(c)(1)(ii) (OCT 1988), FAR 12.212(a) (1995), FAR 52.227-19, or FAR 52.227-14 (ALT III), as applicable. Compuware Corporation.

This product contains confidential information and trade secrets of Compuware Corporation. Use, disclosure, or reproduction is prohibited without the prior express written permission of Compuware Corporation. Access is limited to authorized users. Use of this product is subject to the terms and conditions of the user's License Agreement with Compuware Corporation.

Fault Analytics, Code Coverage, File-AID, Abend-AID, FrontLine, and Compuware Shared Services are trademarks or registered trademarks of Compuware Corporation.

IBM, AD/Cycle, CICS, DB2, DFSMS, DFSORT, IMS, Language Environment, IBM MQ for z/OS, MVS, OS/390, VisualAge, and z/OS are trademarks of International Business Machines Corporation.

ACF2, CA-MIM, CA-ROSCOE, ENDEVOR, LIBRARIAN, PANEXEC, PANVALET, and Top Secret are trademarks or registered trademarks of CA Technologies, Inc.

Adobe® Reader® is a trademark of Adobe Systems Incorporated in the United States and/or other countries.

All other company and product names are trademarks or registered trademarks of their respective owners.

# Contents

<b>Introduction</b> .....	<b>5</b>
Contents of this Guide. ....	5
Who Should Read this Guide. ....	5
Documentation .....	5
Online Help .....	6
Compuware Customer Solutions .....	6
Before Contacting Customer Solutions. ....	6
<b>Planning the Fault Analytics Installation</b> .....	<b>9</b>
How the Components Communicate .....	10
Fault Analytics Collector Installation. ....	11
Fault Analytics Web Application Installation. ....	12
Memory Size Considerations for Linux and z/OS UNIX Installations .....	12
<b>The z/OS Fault Analytics Collector</b> .....	<b>13</b>
Overview. ....	13
Datasets. ....	13
FAC Instances. ....	13
LNKLST and LPALIB .....	14
Storage Use .....	14
System Security .....	15
User-Written Fault Events .....	15
Default Subsystem .....	15
Subsystem-Directing DD Statement .....	15
Migrating to Fault Analytics 17.02. ....	15
Verifying the Installation. ....	16
Communicating with the CES .....	17
IP Versions .....	17
Connection Parameters .....	17
Running the FAC. ....	17
Configuration Parameters .....	18
Configuration Parameters Format. ....	19
Comments. ....	19
Continuation Lines. ....	19
Operator Commands .....	19
Log Open Command. ....	19
Log Close Command .....	20
Shutdown Command. ....	20
Emergency Termination. ....	20
\$42FADEL .....	21
Copying the Log for Transmission .....	21

z/OS Fault Analytics Collector Messages .....	21
Configuring the REXX EXEC .....	21
Displaying Messages .....	22
Messages .....	22
<b>User-Defined Events API – Mainframe .....</b>	<b>65</b>
API Format .....	66
COBOL .....	66
Assembler .....	66
C/C++ .....	66
PL/I .....	66
Debugging .....	66
Processing the API Call .....	67
Using the Fault Analytics Custom Mainframe API .....	67
Return Codes .....	68
Coding Examples .....	68
General Description .....	68
Input to CFMAPI .....	69
Sample Input to CFMAPI: .....	69
Input to COBFMAPI .....	69
Sample Input to COBFMAPI: .....	69
<b>Fault Analytics Fields .....</b>	<b>71</b>
<b>Fault Analytics Custom API Fields .....</b>	<b>75</b>
<b>Using Fault Analytics with Abend-AID .....</b>	<b>79</b>
Abend-AID .....	79
Abend-AID for CICS .....	79
<b>Fault Analytics Export and Load Process .....</b>	<b>81</b>

# Introduction

This guide provides instructions to complete the configuration of Fault Analytics after it has been installed via the Compuware Enterprise Services (see the *Compuware Web Products Installation and Configuration Guide* for the installation of Fault Analytics and other Compuware products that use that service).

## Contents of this Guide

- [Planning the Fault Analytics Installation](#) — Describes items to consider while preparing your site for Abend-AID Fault Analytics installation and configuration.
- [The z/OS Fault Analytics Collector](#) — Provides detailed instructions for installing the Fault Analytics Collector.
- [User-Defined Events API – Mainframe](#) — Describes how to use the mainframe API call for user-defined events.
- [Fault Analytics Fields](#) — Describes each of the Fault Analytics fields.
- [Fault Analytics Custom API Fields](#) — Describes each of the custom API fields.
- [Using Fault Analytics with Abend-AID](#) — Details how to enable Abend-AID and/or Abend-AID for CICS so they can provide Fault Analytics transaction report and region fault data.
- [Fault Analytics Export and Load Process](#) — Provides detailed procedures for converting a Fault Analytics database from SQL Server to DB2.

## Who Should Read this Guide

The *Abend-AID Fault Analytics Installation and Configuration Guide* is intended for system administrators or programmers who are responsible for implementing Fault Analytics. Fault Analytics online help contains additional reference and usage information.

## Documentation

User documentation is available on Compuware Support Center website at <https://go.compuware.com>.

The following documents comprise the Abend-AID documentation set:

- *Abend-AID Installation and Configuration Guide*: Provides instructions for installing Fault Analytics, Abend-AID for CICS, and the Abend-AID Viewer. It includes information about setting up these products to fit the development and system configurations at your site.
- *Abend-AID Advanced Configuration Guide*: Supplements the *Abend-AID Installation and Configuration Guide*, providing additional configuration instructions and information.
- *Abend-AID Messages and Codes*: Lists the informational and error messages and their explanations that you may encounter while using Abend-AID, Abend-AID for CICS, or the Abend-AID Viewer. It also describes any recommended user response. These messages are also available for downloading from the FrontLine website to a Chicago-Soft, Ltd.'s MVS/QuickRef™ database.

- *Abend-AID Reference Summary*: Provides a handy summary of the Abend-AID Viewer, Abend-AID for CICS, the Abend-AID Web Browser Interface, Fault Analytics report sections, Abend-AID SNAP-AID, and Fault Analytics DD statements.
- *Abend-AID Release Notes*: Provides a summary of the enhancements for the current release and the supported environments.
- *Abend-AID User/Reference Guide*: Provides guidelines and instructions for using Fault Analytics basic language support, Extended Language Support (XLS), SNAP-AID, Abend-AID for DB2, Abend-AID for IMS, Abend-AID for IDMS, Fault Analytics DD statements, and the Abend-AID Viewer.
- *Abend-AID for CICS User's Guide*: Describes the functions and features of Abend-AID for CICS. It also contains problem determination examples that illustrate the product's use.
- *Abend-AID Fault Analytics Installation and Configuration Guide*: Provides information about how to complete the configuration of the Abend-AID Fault Analytics Web Application and instructions on how to install the Fault Analytics Collector. The Fault Analytics web application is installed during the installation of Compuware Enterprise Services. The *Compuware Web Products Installation and Configuration Guide* provides information about the installation of Compuware Enterprise Services (CES) and the Abend-AID Fault Analytics manager.

## Online Help

The Abend-AID Fault Analytics online help includes help for customizing and viewing Management Reports, and reference information.

Click **Help** > **Help Contents** to open the online help for Fault Analytics:

- Click **Contents** to see an outline of available topics designed as a user guide.
- Click **Index** to see a list of key terms in alphabetical order.
- Click **Search** to hunt for topics.
- Click **Glossary** for terminology definitions.

After opening a dialog box and clicking within it, press **F1** to open online help for that dialog box.

## Compuware Customer Solutions

Visit the Compuware Support Center, <https://go.compuware.com>, to find product documentation, knowledge articles, and other technical resources. You can open a case with the Customer Solutions team, order products, and much more.

Contact Customer Solutions by phone:

- USA and Canada: 1-800-538-7822 or 1-313-227-5444.
- All other countries: Contact your local Compuware office. Contact information is available at <https://go.compuware.com>.

Visit Compuware on the web at <http://www.compuware.com> for additional product information.

## Before Contacting Customer Solutions

If you need support services, please obtain the following information before calling Compuwares Customer Solutions:

- The name and release number of the Fault Analytics product you are using. This information is available from the **Help** menu by clicking **About**.

- If you have an issue with the Fault Analytics Collector, provide Compuware Customer Support with the entire job output for the Fault Analytics Collector that contains the errors.
- Installation information including:
  - Installed options
  - Whether the product uses local or network databases
  - Whether the product is installed in the default directories
  - Whether the product is a standalone or network installation
- Environment information, such as the operating system and release on which the product is installed, network specifications, and the names and releases of other applications that were running.
- The location of the problem in the Fault Analytics option software, and the actions taken before the problem occurred.
- The exact product error message, if any.
- The exact application, licensing, or operating system error messages, if any.





# Planning the Fault Analytics Installation

The Fault Analytics option to Abend-AID consists of two primary components, a web application and a fault collector running on the mainframe. Each component must be installed prior to beginning any configuration.

**Fault Analytics Web Application:** is installed as part of the Compuware Web Products installation. See the *Compuware Web Products Installation and Configuration Guide* for information on installing the Fault Analytics Web Application.

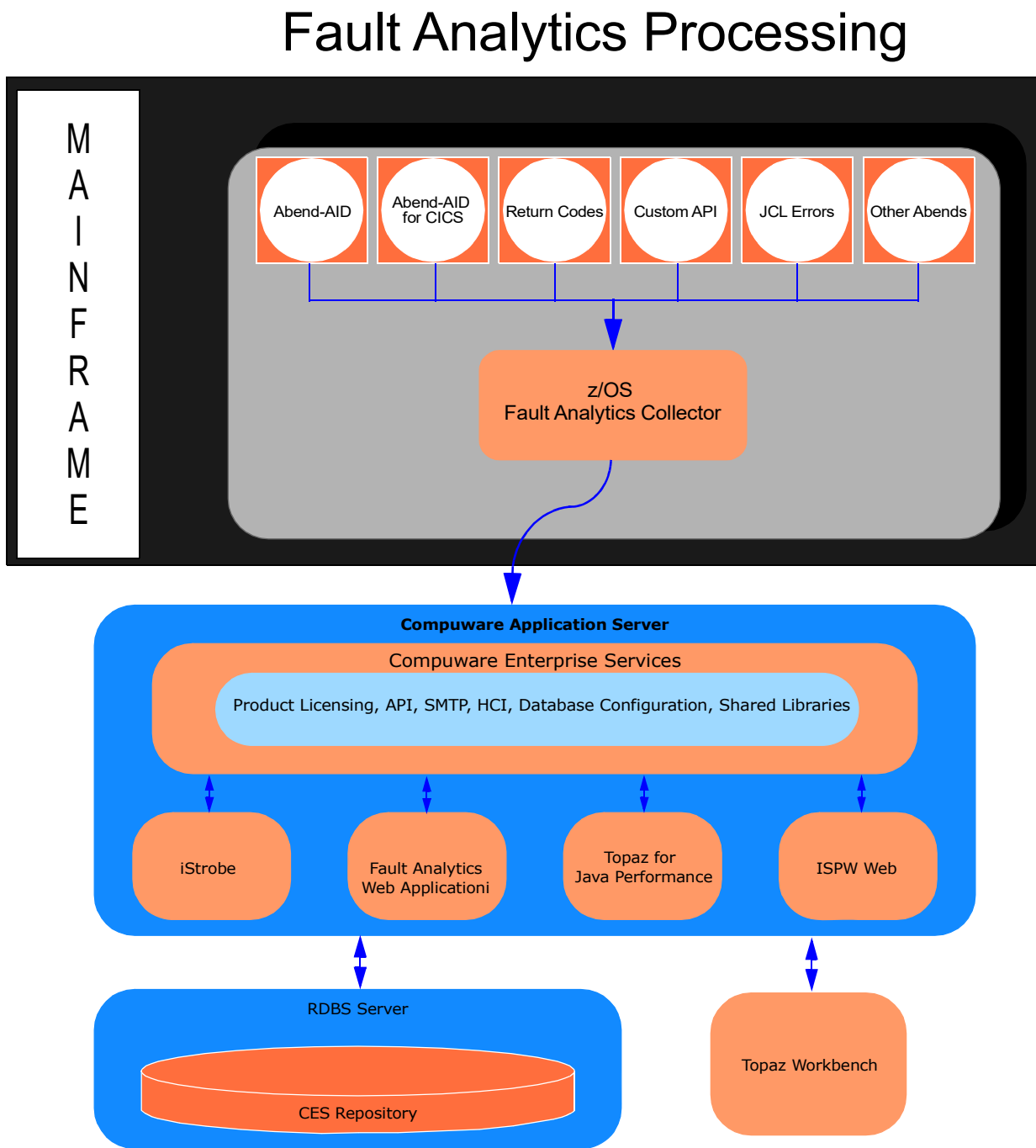
Fault Analytics receives fault events from one or more Fault Analytics Collectors and stores those events in a database. **Fault Analytics Web Application** runs on z/OS UNIX, Linux, or Windows. One instance of Fault Analytics Web Application can receive events from any number of FACs. The number of fault events and the topology of your network are two of the factors that determine how many FAC instances are required for your situation.

Fault Analytics is a web application that can be accessed from any of the supported web browsers.

Fault Analytics supports a number of databases. Refer to the Compuware Enterprise Services (CES) Installation Guide for details. [Figure 1](#) shows communication and data flow of the various Fault Analytics components, companion products, and the mainframe. Fault Analytics is installed in the same file system environment as CES, so the Fault Analytics' files contained in the CES installation directory can be accessed directly. Refer to the appropriate operating system-specific installation chapter in the *Compuware Enterprise Components Installation and Configuration guide* for your installation setup and security considerations.

**z/OS Fault Analytics Collector (FAC):** is installed as part of Abend-AID/Common Components. See [The z/OS Fault Analytics Collector](#) and the *Abend-AID Installation and Customization Guide* for more information on installing and configuring the z/OS Fault Analytics Collector. The Fault Analytics Collector (FAC) runs on each LPAR in your enterprise from which you want fault events collected. Compuware's Abend-AID products are the main source of fault events. Other sources are jobs that end with JCL errors, jobs that end with non-zero return codes, and jobs that abend when no dump was produced (thus, no Abend-AID report). In addition, your own user-generated events are collected. Abend-AID or Abend-AID for CICS is not required on an LPAR that is running the FAC. The most complete information about an abend fault event is obtained from Abend-AID or Abend-AID for CICS. You are not restricted to only one FAC on any given LPAR. You may run as many as you want.

Figure 1. Fault Analytics Components and Data Flow



## How the Components Communicate

All communication between the Fault Analytics Collector and Fault Analytics Web Application (Compuware Enterprise Services) is through TCP/IP. Remember, however, that:

- A Fault Analytics Collector must be running on each LPAR from which you want fault events collected.
- At least one instance of Fault Analytics Web Application/CES must be available.

## Fault Analytics Collector Installation

The Fault Analytics Collector is installed as part of Abend-AID/Common. Configuration of the Fault Analytics Collector is found in the *Abend-AID Installation and Customization Guide*.

Installing the Fault Analytics Collector (FAC) requires the following:

- A familiarity with SMP/E and the mainframe environment.
- Access and permissions to alter the datasets created under the high-level identifier used in the media browser.
- RACF authority to:
  - Update a link list dataset.
  - Either update an existing APF-authorized dataset or to create a new one.
  - Update your RACF rules to assign a user ID for a started task if a started task is desired.
- Knowledge to update the JCL to execute the FAC or to create a started task in your PROCLIB.
- A systems programmer to:
  - Assign a four-character subsystem ID for each FAC.
  - Ensure that this ID is unique across the entire LPAR.

The SYS1.PARMLIB must *not* be updated as part of the Fault Analytics installation.

- Your installation's Work Load Manager (WLM) support personnel, if you intend to use the zIIP-enabled SRB function of the FAC. The utilization of zIIP execution for the SRB is not required from a WLM point of view, but upon its execution, your zIIP utilization will increase. If you choose not to use this feature, then all of the FAC's execution will be on a GCP.
- A system programmer who administers the CMSC.

## Fault Analytics Web Application Installation

**Fault Analytics Web Application** is installed as part of **Compuware Enterprise Services (CES)**. CES is an application server used to provide a common platform and common functionality to any Compuware product choosing to leverage it. See the *Compuware Web Products Installation and Configuration Guide* for information on installing Fault Analytics and other CES-related Compuware point products.

Older releases of Fault Analytics (pre-12.04) used the “Fault Analytics Server” to handle events. For post-12.04 releases, this server function is handled and administered through Compuware Enterprise Services (CES). Refer to the *Compuware Web Products Installation and Configuration Guide* for information on installing CES and other point products.

To access the Fault Analytics Web Application *Administration* for the first time, use the following *case-sensitive* login credentials:

- In the **User name** field, type `FMAdministrator`
- In the **Password** field, type `admin`.

**IMPORTANT:** Compuware recommends that you immediately change the password for obvious security considerations.

## Memory Size Considerations for Linux and z/OS UNIX Installations

Ensure that the Fault Analytics install directory, the CES install directory, and the temporary directories are all backed by sufficient space in HFS/ZFS files mounted at those directories.

The System `/tmp` directory is configured in the z/OS parmlib BPXPRMxx member. There should be a section as follows:

```
MOUNT FILESYSTEM('/TMP')
TYPE(TFS)
MODE(RDWR)
PARM('-s 2048')
MOUNTPPOINT('/tmp')
```

If you are unable to alter the System `/tmp` size value for your site, then you will need to point the `install.sh` script to a directory that is backed by a larger HFS/ZFS file system. For example, pointing the `install.sh` script to a user-defined temporary directory within the user’s home directory (see [Figure 2](#)).

**Figure 2.** Sample `install.sh` altered for alternative temporary directory

```
export JAVA_HOME=/VERSYSB/usr/lpp/java/J7.1_64
export PATH=$JAVA_HOME/bin:$PATH
export LIBPATH=$JAVA_HOME/lib:$LIBPATH:.
export TMPDIR=/u/username/tmp
java -Xnoargsconversion -Dfile.encoding=ISO8859-1 -Dlax.nl.env.IATEMPDIR=/u/username/tmp/ -jar install.jar
-i console
```

# The z/OS Fault Analytics Collector

## Overview

The z/OS Fault Analytics Collector (FAC) is the mainframe component of Compuware's Fault Analytics system. It runs on all LPARs from which you want to collect fault events and can run with or without Compuware's Abend-AID products. The FAC is installed as part of Abend-AID Common Components. You generate the FAC jobs by using the Abend-AID Configuration and Customization Dialog. Refer to the *Abend-AID Installation and Configuration Guide* for more information.

You choose what information you want FAC to capture. These choices are made via the parameters in the dataset described in [Configuration Parameters](#) on page 18.

On each LPAR, FAC consists of the following:

- One long-running address space
- An optional z/OS subsystem routine that looks for JCL errors and operator commands
- An optional SMF accounting exit routine that looks for jobs that end with completion codes that you want reported to Fault Analytics.

The following sections give important information about the Fault Analytics Collector.

## Datasets

The FAC requires one mandatory and one optional dataset. The mandatory dataset is a VSAM RRDS, which holds the queue of records collected by FAC pending completion of processing. Storing the events reduces the likelihood that they will be lost due to communication or system errors. The optional dataset is a VSAM KSDS, which contains log/trace records.

Each of these datasets is defined automatically via the IDCAMS program using parameters you supply in the Configuration Parameters dataset. These datasets cannot be manually pre-allocated by you. The queue dataset is defined only once and is used thereafter. The log dataset can be defined fresh for each use or you can append new log information onto an existing log.

Compuware recommends that you turn logging on only when asked to do so by Compuware Customer Support because it can adversely affect FAC performance.

## FAC Instances

You can execute multiple instances of the FAC simultaneously on one LPAR. For example, you may want to test a new or updated version while running your production version.

Each FAC instance must have a unique four-character subsystem ID. This ID distinguishes one FAC from another, as well as differentiating it from other subsystems running on the LPAR. The subsystem ID can be the same on every LPAR; however, if you run more than one FAC on the same LPAR, each FAC must have a different subsystem ID. This subsystem ID is specified in the Configuration Parameters dataset. You may want to check with your system programmers to ensure that the value you pick is not already used by another subsystem. Note that this subsystem must *not* be defined in the SYS1.PARMLIB IEFSSNxx member. If it is, the FAC will fail to start.

Not only can multiple FAC instances run on a single LPAR, earlier versions of Fault Analytics can run on the same LPAR as the FAC. All events processed by the FAC can also be processed by an earlier supported version of Fault Analytics. This allows you to compare the event processing and ensure the new version is working as expected.

Each instance of the FAC has its own Configuration Parameters dataset and therefore each can collect the same or different sets of JCL errors, steps ending with non-zero completion codes, and steps that have abended but Abend-AID did not process. All FAC instances process all events generated by Abend-AID, License Management System, and user-written programs. The FAC is enabled as soon as you place the module AAFMSTUB into the LNKST dataset available to Abend-AID and you issue the F LLA,REFRESH operator command. See [Migrating to Fault Analytics 17.02](#) on page 15 for more information.

## LNKLST and LPALIB

The following six Fault Analytics modules, located in the Abend-AID Common Modules SKAZAUTH authorized library, must be available to all programs and must reside in a LNKST dataset:

- AAFMSTUB
- CWAFPUBL
- CWFEM
- CWFEMX
- MFMAGUID
- MFMAPUBX

Compuware recommends that you do not place any modules in your LPALIB.

With the exception of the modules listed above, execute all other FAC modules from a //STEPLIB or //JOB LIB DD statement in the JCL used to start FAC. This job can be a started task or a batch job. Executing FAC from a STEPLIB helps to ensure that the correct version of each module is used. In addition, doing so allows multiple versions to exist and to be executed without impacting each other.

The STEPLIB or JOBLIB from which FAC is executed must be APF-Authorized. Only modules MFMMAIN and MFMDELET are bound with AC=1. All other modules are bound with AC=0. Doing so conforms to IBM's system integrity guidelines.

In accordance with IBM's system integrity guidelines, all access to the FAC is via a stacking, non-space-switching PC routine, a z/OS subsystem, and an instance of the IEFACTRT SMF accounting exit routine.

## Storage Use

Use of CSA (below the 16M line common storage) is restricted only to the subsystem interface control blocks, and use of ECSA (above the 16M line common storage) is kept to an absolute minimum. Shared data spaces are employed for logging and queuing in order to not use extended common storage more than is absolutely necessary. All modules are loaded either in private storage or in extended common storage. The FAC SYS PRINT report dataset (which can be browsed via SDSF while FAC is executing), lists all common storage use so that you can see and plan for FAC execution. In addition, this dataset shows all modules used along with their latest assembly date and time and the highest Compuware issue tracking number associated with each module. This report dataset will help in debugging later.

If you execute RMF and look at storage remaining after a job terminates, you may see 1328 bytes of CSA storage attributed to the FAC job. These bytes are used for the SSCT and SSVT subsystem control blocks and must never be freed. Therefore, the storage is shown on the RMF report. Do not be concerned about this storage.

## System Security

RACROUTE (interfacing to RACF, ACF/2, or TOPSECRET) is used to ensure that the user ID under which the FAC address space is running has ACCESS(ALTER) to the queue and the log datasets when these need to be defined or ACCESS(CONTROL) when the datasets exist and need only to be updated.

The Fault Analytics Collector (FAC) can be configured to collect JCL errors via JCL\_ERRORS(YES). The FAC tries to read the JES spool for the job that had the JCL error in order to get and display the reason for the JCL error from the IEF452I, IEF453I, and IEF452I messages. In order to do so, FAC requires READ access to the CL(JESSPOOL).

No attempt is made by FAC to limit which user IDs can enter operator commands. This is an installation responsibility if it is desired. Refer to [Operator Commands](#) on page 19.

## User-Written Fault Events

Any programs that you have written for earlier versions of Fault Analytics that call CWFPM to publish your own events will continue to execute with the new Fault Analytics. No changes to these programs are required.

## Default Subsystem

The default subsystem specification has been deprecated in Fault Analytics Release 12.3. Once the module named AAFMSTUB is installed in the LNKST dataset, all instances of the FAC receive all events generated by Abend-AID, License Management System, and by user-written programs.

## Subsystem-Directing DD Statement

An FAC subsystem-directing DD statement takes the form //AAFMxxxx DD DUMMY, where xxxx is replaced with the four-character subsystem ID that you want to handle fault events from this program. This DD statement is placed into the JCL of the job that may fail and that will publish fault events. This DD statement names the FAC subsystem that is to handle any fault events generated by the programs executed in this job step.

Do not place this DD statement in the FAC JCL, but instead place it in the job that will abend and for which you want the abend event captured by the subsystem named in the DD statement.

The named FAC subsystem must be active. If it is not, the fault event is ignored and the data is lost. When the subsystem-directing DD statement is present, only the one subsystem named in the DD statement processes the event, regardless of the number of instances of the FAC active on the LPAR.

In the absence of any subsystem-directing DD statement, all fault events are processed by all instances of the FAC that are active on the LPAR. If the subsystem-directing DD is present, only the subsystem named in the DDNAME processes the event.

JCL errors, steps ending with non-zero completion codes, and steps that have abended but Abend-AID did not process have always been processed by all instances of the FAC. Now events generated by Abend-AID are processed in this manner as well.

## Migrating to Fault Analytics 17.02

Each of your site's LPARs can be changed to use Fault Analytics Collectory (FAC) 17.02 one at a time. In addition, you can run Fault Analytics 12.4, 16.05, and FAC 17.02 releases at the same time on the same LPAR, and even have fault events processed by all instances of the FAC on the LPAR. In this way you can ensure that FAC 17.02 is executing correctly.

Compuware recommends that you first install the FAC on a test LPAR. Copy the six modules previously discussed in [LNKST and LPALIB](#) on page 14 into a link-listed dataset on this LPAR. If this

dataset is shared with other LPARs, they will be affected by the presence of the new modules because changes have been made to these modules for FAC 16.3. The AAFMSTUB module in 17.02 sends each event from Abend-AID, License Management System, and from user-written programs to every active instance of the FAC on the LPAR.

Once you have the six modules in a LNKLIST dataset, you can start the FAC 17.02 address space. This FAC, plus any other instances of the FAC that are versions 12.4 or 16.05, will process all events, as well. Each instance of the FAC is invoked for each possible event, and depending on the parameters you have set for each, either processes or ignores the event.

## Verifying the Installation

1. Submit the JCL located in the Abend-AID installation sample library (CTL) member \$46FAVER, to ensure that the modules that must be in a link list dataset are properly available.

This job prints a report giving the status of each module that must be in a link list dataset. The report created by \$46FAVER should resemble that shown below.

**Figure 3.** Sample \$46FAVER Report

```

MFM222E  AAFMSTUB  WAS FOUND IN LINK LIST DATA SET:
MFM224I          VOL=SMS900 DSN=ENTQA.AF.SMFMAUTH
MFM225I  CORRECTLY BOUND AS REENTRANT
MFM227I          AND IS AT VERSION 120300

MFM223I  CWAFPUBL  WAS FOUND IN LINK LIST DATA SET:
MFM224I          VOL=SMS900 DSN=ENTQA.AF.SMFMAUTH
MFM225I  CORRECTLY BOUND AS REENTRANT
MFM227I          AND IS AT VERSION 120300

MFM222E  CWFM      WAS FOUND IN LINK LIST DATA SET:
MFM224I          VOL=SMS900 DSN=ENTQA.AF.SMFMAUTH
MFM225I  CORRECTLY BOUND AS REENTRANT
MFM227I          AND IS AT VERSION 120300

MFM222E  CWFMX     WAS FOUND IN LINK LIST DATA SET:
MFM224I          VOL=SMS900 DSN=ENTQA.AF.SMFMAUTH
MFM225I  CORRECTLY BOUND AS REENTRANT
MFM227I          AND IS AT VERSION 120300

MFM223I  MFMAGUID  WAS FOUND IN LINK LIST DATA SET:
MFM224I          VOL=SMS900 DSN=ENTQA.AF.SMFMAUTH
MFM225I  CORRECTLY BOUND AS REENTRANT
MFM227I          AND IS AT VERSION 120300

MFM223I  MFMAPUBX  WAS FOUND IN LINK LIST DATA SET:
MFM224I          VOL=SMS900 DSN=ENTQA.AF.SMFMAUTH
MFM225I  CORRECTLY BOUND AS REENTRANT
MFM227I          AND IS AT VERSION 120300

```

Any errors found by \$46FAVER will be flagged with an asterisk, and the text of the error will indicate what was found to be wrong. This program will end with a return code of 12 if any errors are found.

2. Correct any errors before attempting to execute the Fault Analytics Collector (FAC).

Your link list datasets may be APF-authorized, and their names and volume serials will differ. These do not constitute errors and will not be flagged with an asterisk.



3. Repeat this process on every LPAR on which you intend to collect fault events. Every time you start the FAC, the verification program is automatically run and the results are shown in the SYSPRINT dataset. Hence you can see over time whether the FAC in your link list dataset has changed.

## Communicating with the CES

The Fault Analytics Collector (FAC) establishes a TCP/IP connection with the Fault Analytics Web Application, which is running on a single instance of Compuware Enterprise Services (CES).

The FAC maintains a copy of all fault events on disk until Fault Analytics replies that it has taken responsibility for the event. Once the FAC receives the reply, the event is deleted.

### IP Versions

Communication with the CES can be via IPv4 or IPv6. The FAC always tries to obtain an IPv6 socket, but if this fails, reverts to IPv4. You do not need to enable IPv6 on all your LPARs at the same time because communication between IPv4 and IPv6 is correctly handled by TCP/IP.

You can specify a full IP address or IP name of the CES using the IPv4 or IPv6 display formats.

### Connection Parameters

A single connection is established between each FAC and a Fault Analytics web application instance. The Fault Analytics web application (via CES) never establishes a connection with an FAC. Thus, each Fault Analytics/CES instance is considered a *server* and each FAC is considered a *client*. This distinction exists only for setting up communication and establishing a connection. Once a connection exists, either end can initiate a request. The other end will respond with a reply. A connection exists until:

- Either the FAC or CES terminates.
- An operator terminates the connection.
- A system or communication failure occurs.

In the case of when FAC or CES terminates or a failure occurs, the FAC attempts to reestablish the connection on a timed basis. The operator must reestablish any connection that has been previously terminated.

## Running the FAC

The Fault Analytics Collector (FAC) is a long-running address space active on each LPAR where you want to collect fault events. You can execute the FAC from JCL as a batch job or from a procedure as a started task. The Abend-AID installation sample library (CTL) members are \$40FACJB and \$41FACPR.

Choose whether to execute the FAC as a batch job or a started task.

- If you choose the batch job option, the z/OS STOP and MODIFY commands are directed to the *jobname* you specified in the JCL.
- If you choose the started task option, the z/OS STOP and MODIFY commands are directed to the *identifier* you specified on the START command. For example, if you named the procedure in your procedure library CPWRAAFM, you issue the following command to start the FAC:

```
S CPWRAAFM.AAFM.
```

In the above example, AAFM is the identifier of the stated task. It can be used to display information about the task or stop the task. Refer to the *MVS System Commands* manual for details.

**Notes on the JCL:**

1. Compuware recommends that a REGION parameter of 0M be specified in order that the private area for FAC not be unduly constrained. As indicated earlier in this document, the storage usage has been carefully analyzed to insure that no more than is necessary is consumed.
2. TIME=NOLIMIT is recommended because FAC is a long running job and should not be canceled due to exceeding the installation's CPU time maximum.
3. You can change the job class or performance group to achieve a specific storage and CPU time use instead of using the JCL default parameters.
4. PARM='LANGUAGE=EN' is required.

**Note:** There is an additional, optional, sub-parameter for the PARM parameter. This sub-parameter, SUFFIX, takes a value that identifies the member of the CMSC that contains the configuration parameters. The SUFFIX values is provided by the administrator of the CMSC. A default value is used if SUFFIX is not specified.

5. The SYSPRINT statement is required but may point to DASD datasets instead of JES datasets if desired. The DCB characteristics for the SYSPRINT dataset must be RECFM=FBA,LRECL=133,BLKSIZE= \* multiple of 133 \*.
6. The FREE=CLOSE and SPIN=UNALLOC parameters on the SYSPRINT DD statement are required if you have chosen the Automatic Restart Manager (ARM) feature of the FAC. These parameters cause JES/2 to retain each SYSPRINT dataset for each initiation of the FAC as a separate dataset. You can see each execution separately by browsing these datasets.
7. The STEPLIB (or JOBLIB) DD statement if present must specify an APF-authorized load library. If this library is not APF-Authorized, FAC abends with an S047 abend code.

If desired, you can place a procedure in your system PROCLIB and execute this PROC at IPL time using the automatic command facility. The initialization program for Abend-AID can run before or after starting FAC.

## Configuration Parameters

The configuration parameters for FAC running on the mainframe are maintained by the CMSC. Depending on your sites standards, you can define the dataset used by the CMSC and update it with the Fault Analytics configuration parameters. Alternatively, you can give the parameter to the administrator of the CMSC. If you decide to create the parameter dataset it must have the following attributes:

LRECL=80

BLKSIZE= any multiple of 80

RECFM=FB

Refer to the *Enterprise Common Components (ECC) Installation Guide* for more information about the CMSC.

All values that tailor the execution of the FAC reside in the dataset pointed to by CWPARM statement in the CMSC JCL.

When a change is made to the configuration parameters, the FAC must be stopped and restarted for the change to take effect. Whenever you apply PTF maintenance to the FAC, always check the FAC SAMPLE datasets. Any changes to the parameters or additions to them are reflected in this dataset as part of the SMP/E APPLY processing.

You can use the Abend-AID installation sample library (CTL) member MFMPARM as a template for your configuration parameters for the FAC. You can make any parameter you do not want into a comment (asterisk in CC 1), and you can change any values that are specific to your installation.

A description for each parameter is included in the MFMPARM member in the Abend-AID installation sample library (CTL) library. New parameters and/or changed ones will be documented in the MFMPARM member, which will be distributed with any PTF that changes the existing values. Refer to the description of each parameter to see which ones you must change in order to run the FAC.

## Configuration Parameters Format

Positions 1 through 72 of each statement can contain parameter data. Positions 73 through 80 are ignored and can contain a sequence number, but are not required to do so.

Each parameter takes the form KEYWORD(value). Each keyword and the requirements for the values associated with it are documented in the MFMPARM member.

## Comments

A comment is specified by placing an asterisk (\*) in position 1 of a statement. The entire statement is considered part of the comment. Additionally, a comment can be anything enclosed between a slash-asterisk (/\*) and an asterisk-slash (\*). Multiple lines can be contained within comments of this type.

## Continuation Lines

If a parameter value must span multiple lines, specify the value through position 72 and continue the value on the next statement starting in position 1. As many lines as necessary can be used in this way, but each parameter keyword has its own restrictions.

## Operator Commands

The FAC monitors all commands entered at any system console. When the FAC recognizes its command character, it processes the command. For example, if you define the *at* sign (@) as the command character, any text entered at a system console that is preceded by the @ character will be processed only by the corresponding FAC, not by any other subsystem component.

The command character is defined in the parameter dataset and, by default, the MODIFY *jobname* command is used. You can specify a command character for each FAC; however, it must be unique for each FAC. Multiple FAC programs in one LPAR *cannot* share the same command character. They must either have no command character specified, or each must have its own unique character. You are not required to define a command character.

All operator commands can also be entered using the z/OS MODIFY command. For instance, **MODIFY *jobname*,SHUTDOWN** would be equivalent to entering @SHUTDOWN. The verb MODIFY can be abbreviated F. The z/OS STOP command, abbreviated P, is also supported and is discussed in [Shutdown Command](#) on page 20.

Other methods of entering operator commands include sending them to a particular FAC or entering them from an ISPF interface on the z/OS LPAR.

Console messages indicating the success or failure of operator commands and console messages supplying information requested by the operator command are sent to the system console entering the command.

## Log Open Command

The Log Open command causes logging to begin. It can be entered in one of two ways:

- Using the command character defined to the FAC
- Using the z/OS MODIFY (F) command.

Note that all of the parameters concerning logging (the dataset name, volser, tracks, and optional SMS parameters) must have been specified when the FAC started. They cannot be added dynamically.

An example of the MODIFY command is:

```
F jobname,LOG OPEN
```

## Log Close Command

The Log Close command causes logging to end and all system resources consumed by the log task to be freed. It can be entered in one of two ways:

- Using the command character defined to the FAC
- Using the z/OS MODIFY (F) command.

When the log is closed, you can print it using the log print program, or you can REPRO it to a sequential dataset and transmit it to Compuware.

An example of the MODIFY command is:

```
F jobname,LOG CLOSE
```

## Shutdown Command

The Shutdown commands shuts down one or more components of the system. They can be entered in any of three ways:

- Using the command character defined to FAC
- Using the z/OS MODIFY (F) command
- Using the z/OS STOP (P) command

Operands on the Shutdown command are optional and specify the manner of the shutdown. These operands are NORMAL and IMMED. NORMAL is the default.

NORMAL is the safest method of shutting down one or more components of the system and, barring any extremely unusual conditions, ensures that no fault events in flight at the time of the shutdown are lost. The FAC stops accepting fault events. If the connection with the FAC is active and if the communication is in either fault event state or fault event state pending, the FAC gracefully terminates the connection. If the communication is not in either of these states, the TCP/IP connection is closed immediately. The z/OS STOP (P) command is equivalent to entering **SHUTDOWN NORMAL**.

IMMED is the fastest way of terminating one or more components of the system and does not guarantee that in-flight fault events are processed. The FAC stops accepting fault events. If the connection with the CES is active and if the communication is in fault event state or fault event state pending, the FAC terminates the connection immediately. Fault events that have not been sent remain on the queue until the system is restarted, at which time they are sent. The FAC terminates immediately.

You can issue a second shutdown command. For example, a SHUTDOWN NORMAL command can be overridden by a SHUTDOWN IMMED command.

## Emergency Termination

The FAC makes every effort possible to release system resources, especially common storage, when it terminates. This is true whether the termination is normal due to a SHUTDOWN command or abnormal due to a CANCEL command or a program abend. ESTAEX and FRR routines are always in effect to trap abnormal terminations and to free all system resources.

There may, however, be a situation in which the FAC cannot be cancelled due to a z/OS anomaly or failure that precludes the functioning of the CANCEL command. If you are unable to communicate with FAC and want to terminate it, follow the steps below in order. Stop issuing the commands once the FAC terminates.

1. Issue the **STOP *jobname*** command.
2. Issue the **MODIFY *jobname*,SHUTDOWN IMMED** command.
3. Issue the **CANCEL *jobname*** command.
4. Issue the **FORCE *jobname*** command.

Attempt to restart the FAC. If the restart is successful, you can continue to run this job. If the restart is not successful and the FAC indicates that it cannot continue, you can execute the emergency cleanup job, \$42FADEL, which is described below.

## \$42FADEL

\$42FADEL is a stand-alone job, located in the Abend-AID installation sample library (CTL). It attempts to terminate a specified FAC job and attempts to release all system resources held by it.

The PARM= on the EXEC statement must specify the four-character subsystem ID of the Fault Analytics Collector instance you want to terminate.

User ABEND 100 and 101 may occur and messages describing the abends will be written to the job log. User ABEND 100 indicates that the PARM= is not exactly four bytes long, and User ABEND 101 indicates that the subsystem ID specified on the PARM= operand cannot be found in the system. Messages MFM400 through MFM403 may be written to the job log as well.

## Copying the Log for Transmission

At the request of Compuware Customer Support, you may be asked to start the logging facility for a specified period of time and to transmit the log to Compuware for analysis.

The logging facility must be disabled before this log copy job will run. Issue the FAC LOG CLOSE command to stop logging and free the log for copying.

Running the log for long periods of time degrades performance of the Fault Analytics Collector and can consume a large amount of disk space.

Sample JCL to copy the Fault Analytics Collector log to a sequential dataset is shown in [Figure 6](#).

## z/OS Fault Analytics Collector Messages

The section entitled [Messages](#) on page 22 contains all program messages that existed at the time of this release. Following release, new messages and message explanations may be added, and corrections of the messages themselves may be made. For that reason, there is a facility for examining the most current message text and explanation using a TSO REXX EXEC named MFMMSGS. Compuware recommends that you use this facility to determine the explanation, system action, and user response for any messages issued by the Event Processor.

## Configuring the REXX EXEC

Configure the REXX EXEC by doing the following:

- Update your TSO LOGON PROC as follows, which will permanently allow you to run the REXX EXEC without further alterations to your environment:
  - a. Add the Event Processor load library to the STEPLIB concatenation.

- b. Add the Event Processor EXEC library to the ISPEXEC and ISPPROC concatenation.

## Displaying Messages

Do the following to display messages after adding these datasets to your ISPF concatenations:

1. Execute MFMMSGS by entering **TSO MFMMSGS** on any ISPF command line. The panel shown below appears.

**Figure 4.** System Message Display Panel

```

COMPUWARE FAULT ANALYTICS - SYSTEM MESSAGE DISPLAY
COMMAND ==>                                SCROLL ==> PAGE
*****
ENTER MESSAGE ID: _____  ENTER LANGUAGE CODE: EN

ENTER 6 CHARACTER MESSAGE ID AND CHANGE THE LANGUAGE CODE
THEN PRESS ENTER.

YOU MAY STEP THROUGH THE MESSAGE TEXT MODULE AUTOMATICALLY BY
SIMPLY PRESSING ENTER.

```

2. Enter a six-character message ID in the ENTER MESSAGE ID field or simply press **Enter** to page through all the messages. A sample message is shown below.

**Figure 5.** Sample Message on System Message Display Panel

```

Compuware Event Publisher for System z Row 1 to 15 of 19
System Message Display
-----
Message ID . . MFM107      Language . . EN

MFM107E SUBSYSTEM_ID PARAMETER MISSING

EXPLANATION:      The SUBSYSTEM_ID parameter names a unique 4-character name
                  for this FAC instance. This name must not be duplicated on
                  this LPAR, and must NOT be defined in the SYS1.PARMLIB
                  IEFSSNxx member.

SYSTEM ACTION:    FAC execution ends.

USER ACTION:      Add the SUBSYSTEM_ID parameter to the //SYSIN data set and
                  reexecute FAC. This 4-character name must be unique across
                  all subsystems running on this LPAR but may be the same on

Command ==> _____ Scroll ==> CSR

```

## Messages

### MFMM001 INITIALIZATION @@ FOR FAC @@ VER @@.@@.@@

**Severity:** Informational

**Explanation:** This informational message indicates that initialization of FAC has started or ended. The subsystem ID and the version of the product are displayed.

**System Action:** Processing continues.

**User Response:** None.

**MFM001E AN ERROR HAS OCCURRED DURING LOAD FOR MODULE @@**

**Severity:** Error

**Explanation:** At FAC system startup an attempt is made to load all the processing modules into storage. This load was unsuccessful for the module named in this message.

**System Action:** FAC terminates.

**User Response:** Ensure that the //STEPLIB or //JOB LIB DD statements in the JCL executing FAC point to the correct data sets and that these data sets contain the correct release of FAC.

**MFM002E MODULE=@@ R15=@@ R1=@@**

**Severity:** Error

**Explanation:** This message follows MFM001 and gives the module name as well as the contents of R15 and R1 at the completion of the LPAD operation.

**System Action:** FAC terminates.

**User Response:** Save the information in this message if you have to contact your systems programmer or Compuware.

**MFM003E COMMON AREA STORAGE NOT AVAILABLE FOR MODULE @@**

**Severity:** Error

**Explanation:** This message indicates that the attempt to load the module named in the message into extended common storage has failed because there is not enough available storage to hold the module.

**System Action:** FAC terminates.

**User Response:** Increase the amount of common storage, specifically subpool 241, and start FAC again.

**MFM004E AN ERROR HAS OCCURRED DURING BLDL FOR MODULE @@**

**Severity:** Error

**Explanation:** At FAC system startup an attempt is made to load all the processing modules into storage. The BLDL for this load was unsuccessful for the module named in the message.

**System Action:** FAC terminates.

**User Response:** Ensure that the //STEPLIB or //JOB LIB DD statements in the JCL executing FAC point to the correct data sets and that these data sets contain the correct release of FAC.

**MFM005E MODULE=@@ R15=@@ R1=@@**

**Severity:** Error

**Explanation:** This message follows MFM004 and gives the module name, and the contents of R15 and R1 at the completion of the BLDL operation.

**System Action:** FAC terminates.

**User Response:** Save the information in this message if you have to contact your systems programmer or Compuware.

**MFM006E SUBSYSTEM @@ ALREADY EXISTS AND IS ACTIVE**

**Severity:** Error

**Explanation:** This message indicates that the 4-character subsystem ID you specified in the //SYSIN DD parameter data set already exists on your system and it is an active FAC subsystem.

**System Action:** FAC terminates.

**User Response:** Ensure that the subsystem ID you have specified is unique on your system then restart FAC or stop the instance of FAC that holds this name.

**MFM007E ECSA STORAGE NOT AVAILABLE FOR SUBSYSTEM @, R15=@@**

**Severity:** Error

**Explanation:** This message indicates that the attempt to obtain storage for the subsystem control block has failed. There is not enough storage above the line in extended CSA subpool 241 for these blocks.

**System Action:** FAC terminates.

**User Response:** Increase the amount of extended CSA subpool 241 storage and restart FAC.

**MFM008I MODULE P/T DATE TIME VERSION ADDRESS**

**Severity:** Informational

**Explanation:** This message is displayed only at FAC startup. It names the columns shown below in multiple message numbers MFM009. The module name, highest Compuware problem tracking number, the date and time the module was last assembled, the version of the module and the main storage address where it is loaded are shown.

**System Action:** Processing continues.

**User Response:** None.

**MFM009I @@ @@ @@ @@ @@ @@ @@**

**Severity:** Informational

**Explanation:** This message lists one module loaded by FAC. See the MFM008 message for a description of the columns.

**System Action:** Processing continues.

**User Response:** None.

**MFM010E SDUMPX TAKEN SUCCESSFULLY FOR FAC @@ ABEND**

**Severity:** Error

**Explanation:** This message is displayed on the system console by the FAC dump routines. It names the abend code.

**System Action:** Execution terminates.

**User Response:** Prepare the dump for examination by your systems staff or for transmission to Compuware. Reexecute FAC.

**MFM011E SDUMPX FAILED FOR FAC @@ ABEND. RETCODE=@@/@@**

**Severity:** Error

**Explanation:** This message is displayed on the system console by the FAC dump routines and it indicates that the attempt to obtain a system dump has failed. The return and reason code for the failure is shown in the message.

**System Action:** Execution terminates.

**User Response:** Examine the return and reason codes or supply this message to Compuware Technical Support. Reexecute FAC.

**MFM012E @@ ABEND DUMP IN COMPUWARE FAC**

**Severity:** Error

**Explanation:** This message is the title for all SDUMPX macros issued by FAC. This title indicates the abend code that caused the dump to be taken.

**System Action:** Execution terminates.

**User Response:** Ensure that the dump is preserved and can be given to your systems programming staff, or sent to Compuware's Technical Support. Reexecute FAC.

**MFM014E MFMLOGER VSAM @@ ERROR**

**Severity:** Error

**Explanation:** This message indicates that a non-zero return code has resulted from a VSAM FAC log request. The name of the request is contained in the message.

**System Action:** The log task terminates but execution of FAC continues.

**User Response:** Examine the following messages, which contain detailed information about the nature of the error. Keep this information for your systems programming staff or for the Compuware Technical Support group. Enter the ISPF FAC control system and re-attach and re-open the log.

**MFM015E MFMLOGER VSAM RPL FEEDBACK WORD @@**

**Severity:** Error



**Explanation:** This message contains the value of the VSAM RPL feedback word following a VSAM PUT to the log data set.

**System Action:** The log task terminates but execution of FAC continues.

**User Response:** Examine the following messages, which contain detailed information about the nature of the error. Keep this information for your systems programming staff or for the Compuware Technical Support group. Enter the ISPF FAC control system and re-attach and re-open the log.

#### **MF016E MFML0GER VSAM ACB ERROR FLAG @@**

**Severity:** Error

**Explanation:** This message contains the value of the VSAM ACB error flag following a VSAM OPEN or CLOSE of the log data set.

**System Action:** The log task terminates but execution of FAC continues.

**User Response:** Examine the following messages, which contain detailed information about the nature of the error. Keep this information for your systems programming staff or for the Compuware Technical Support group. Enter the ISPF FAC control system and re-attach and re-open the log.

#### **MF017E SRB ABEND @@ AT DISPLACEMENT @@ INTO MFMSRBRT**

**Severity:** Error

**Explanation:** This message indicates that an abend has occurred at the displacement shown into the SRB routine named MFMSRBRT.

**System Action:** Execution terminates.

**User Response:** If a dump is produced, save it for your systems staff or for transmission to Compuware. Reexecute FAC.

#### **MF018E EXTENDED CSA STORAGE NOT AVAILABLE FOR SRB ROUTINE**

**Severity:** Error

**Explanation:** This message indicates that a STORAGE OBTAIN has failed reporting that extended CSA storage from subpool 241 is not available.

**System Action:** Execution terminates.

**User Response:** Report this condition to your systems programmer who may want to increase the amount of extended CSA storage in the system.

#### **MF019E FAC INITIALIZATION FAILED. RETCODE=@@/@@**

**Severity:** Error

**Explanation:** This message indicates that the initialization routines have failed and the return and reason codes describing this failure are shown

**System Action:** FAC execution terminates.

**User Response:** Examine the SYSPRINT data set for any other messages that may be relevant to the failure. Report this message to the Compuware support staff.

#### **MF020I A LIST OF @@ EXIT ROUTINES FOLLOW:**

**Severity:** Informational

**Explanation:** This message is the header for the MF021 messages that follow. All of the exit routines that you have active plus the one for FAC should be listed. Note that additional exit routines may be added after FAC starts and, if so, their names will not be in this list.

**System Action:** Processing continues.

**User Response:** Verify that the exits you expect to be active are active.

#### **MF021I EXIT ROUTINE MODULE NAME=@@ STATUS=@@**

**Severity:** Informational

**Explanation:** The module name for each exit routine is named in this message.

**System Action:** Processing continues.

**User Response:** None.

**MFM023E MFMQUERT VSAM @@ ERROR R15 RETURN CODE @@**

**Severity:** Error

**Explanation:** This message indicates that a non-zero return code has resulted from a VSAM FAC queue request. The name of the request is contained in the message.

**System Action:** Processing continues.

**User Response:** Examine the following messages, which contain detailed information about the nature of the error. Keep this information for your systems programming staff or for the Compuware Technical Support group.

**MFM024E MFMQUERT VSAM RPL FEEDBACK WORD @@**

**Severity:** Error

**Explanation:** This message contains the value of the VSAM RPL feedback word following a VSAM PUT to the queue data set.

**System Action:** Processing continues.

**User Response:** Examine the following messages, which contain detailed information about the nature of the error. Keep this information for your systems programming staff or for the Compuware Technical Support group.

**MFM025E MFMQUERT VSAM ACB ERROR FLAG @@**

**Severity:** Error

**Explanation:** This message contains the value of the VSAM ACB error flag following a VSAM OPEN or CLOSE of the queue data set.

**System Action:** Processing continues.

**User Response:** Examine the following messages, which contain detailed information about the nature of the error. Keep this information for your systems programming staff or for the Compuware Technical Support group.

**MFM026I STOP COMMAND ACCEPTED**

**Severity:** Informational

**Explanation:** This message confirms that the STOP command entered by an operator has been accepted by FAC and end of job processing has commenced.

**System Action:** Execution terminates.

**User Response:** None.

**MFM027I MODIFY COMMAND RECEIVED**

**Severity:** Informational

**Explanation:** This message confirms that the MODIFY command entered by an operator has been received by FAC and processing of it has commenced. If there are any errors encountered during parsing or execution of the command they will be indicated later.

**System Action:** Execution continues.

**User Response:** None.

**MFM028I @@**

**Severity:** Informational

**Explanation:** This message contains a copy of the entire command entered by the operator via the console. Only the first 120 bytes of the command are displayed.

**System Action:** Execution continues.

**User Response:** None.

**MFM029I TOTAL RECORDS ON DISK QUEUE @@**

**Severity:** Informational

**Explanation:** This message specifies the total number of records on the FAC disk queue.

**System Action:** Execution continues.

**User Response:** None.

**MFM030I NUMBER RECORDS PENDING SEND TO FAS @@**

**Severity:** Informational

**Explanation:** This message specifies the number of records that have yet to be sent to the FAS. They will be sent as soon as possible.

**System Action:** Execution continues.

**User Response:** None.

**MFM031I NUMBER RECORDS PENDING REPLY FROM FAS @@**

**Severity:** Informational

**Explanation:** This message specifies the number of records that have been sent to the FAS but that have not been replied to by the FAS.

**System Action:** Execution continues.

**User Response:** None.

**MFM032E COMPUWARE SUBSYSTEM XXXX REASON CODE XXXX**

**Severity:** Error

**Explanation:** This message indicates that the subsystem named in the message has had a failure and the return code in the message defines the failure.

**System Action:** The subsystem is deactivated but FAC continues.

**User Response:** Determine the cause of the failure, stop and reexecute FAC. Upon reexecution the subsystem will be activated again.

**MFM033E INVALID COMMAND. PLEASE REENTER**

**Severity:** Error

**Explanation:** The command you just entered via the operator console was invalid and will not be processed.

**System Action:** The command is ignored and processing continues.

**User Response:** Reenter a valid command if possible. If the command was valid, refer this problem to the Compuware support organization.

**MFM034E FAS @@@ CONNECTION ENDED BY FAS REQUEST**

**Severity:** Error

**Explanation:** The TCP/IP connection with the FAS has been closed and the FAS requested this close to occur.

**System Action:** Processing continues and attempts will be made to reestablish the FAS connection.

**User Response:** Monitor the SYSPRINT to ensure that the connection with the FAS is reestablished. If not, check the TCP/IP connection between FAC and the FAS.

**MFM035I @@ ARMED FOR AUTOMATIC RESTART**

**Severity:** Informational

**Explanation:** This message indicates that you have selected ARM processing and this is the first time the element named in this message has been armed. That is, this execution is NOT due to an automatic restart.

**System Action:** Processing continues.

**User Response:** None.

**MFM036I @@ RESTARTED DUE TO PREVIOUS ABEND. RSNCD=@@**

**Severity:** Informational

**Explanation:** This message indicates that this FAC has been automatically restarted by the system. The reason code indicates whether the JCL or START command has been changed (RSNCD=108) or has not been changed (RSNCD=104)

**System Action:** Processing continues.

**User Response:** None.

**MFM037E @@ IXCARM REGISTER FAILURE. RETCD=@@. RSNCD=@@**

**Severity:** Error

**Explanation:** An attempt to issue IXCARM macro has resulted in a return code greater than 4. This indicates that the request did not complete. The actual return and reason codes are shown in this message.

**System Action:** Processing continues but without ARM support.

**User Response:** See the "z/OS MVS Sysplex Services Reference" manual for a complete list of the possible return and reason codes. Correct any environmental errors or report this problem to the Compuware software support staff.

**MFM038E @@ IXCARM READY FAILURE. RETCD=@@. RSNCD=@@**

**Severity:** Error

**Explanation:** An attempt to issue IXCARM macro has resulted in a return code greater than 4. This indicates that the request did not complete. The actual return and reason codes are shown in this message.

**System Action:** Processing continues but without ARM support.

**User Response:** See the "z/OS MVS Sysplex Services Reference" manual for a complete list of the possible return and reason codes. Correct any environmental errors or report this problem to the Compuware software support staff.

**MFM039I @@ AUTOMATIC RESTART NOT SUPPORTED ON THIS SYSTEM**

**Severity:** Informational

**Explanation:** An attempt to issue IXCARM macro has resulted in a return code indicating that ARM support is not available on this system, or it may be available but stopped.

**System Action:** Processing continues but without ARM support.

**User Response:** See the "z/OS MVS Sysplex Services Reference" manual for a complete list of the possible return and reason codes. You may need to issue the operator command SETXCF START,POLICY,TYPE=ARM in order to activate ARM processing.

**MFM040I @@ DEREGISTERED FOR AUTOMATIC RESTART**

**Severity:** Informational

**Explanation:** This message indicates that an IXCARM has been issued in order for the server to go to a normal end of job.

**System Action:** Processing continues.

**User Response:** None.

**MFM041E COMPUWARE LICENSE MANAGER FAILURE RETCD/RSNCD = @@/@@**

**Severity:** Error

**Explanation:** This message indicates that the call to Compuware's License Management system (LMS) has resulted in return and reason codes shown in the message text. These codes indicate that LMS was unable to process the request to obtain permission to executed. These codes do NOT indicate simply that FAULTMGR is not licensed on this LPAR, but they do indicate that a failure within LMS itself has occurred.

**System Action:** FAC execution ends.

**User Response:** You must contact the person responsible for LMS in your environment. This problem will most likely be resolved by Compuware support personnel.

**MFM042E COMPUWARE LICENSE MANAGER RETCD/RSNCD = @@/@@**

**Severity:** Error

**Explanation:** This message indicates that the call to Compuware's License Management system (LMS) has resulted in return and reason codes shown in the message text. This message is written in place of the

standard Compuware license manager error messages because storage in which to display these messages was not available. This message is NOT an indication that there is a problem with Compuware's license manager. This is a storage shortage issue only.

**System Action:** If the RETCD is 04 execution of FAC continues. If the RETCD is 08 execution ends.

**User Response:** Increase the value specified on the REGION= operand of the JCL used to invoke FAC and reexecute FAC.

#### **MFM043I @@**

**Severity:** Informational

**Explanation:** This message comes from the Compuware License Management System (LMS) and is one of a list of messages indicating the license status of FAC on this LPAR. These messages are explained completely in the Compuware License Management System Messages and Codes manual.

**System Action:** If the messages indicate that FAC is not licensed to run, then execution ends.

**User Response:** Take any action appropriate to the messages written.

#### **MFM044E z/OS PARSER FAILED. MSG FROM @@(@@). @@/@@**

**Severity:** Error

**Explanation:** This message indicates that a non-zero return code has resulted from the attempt to parse a message received from the FAS named in this message.

**System Action:** The connection with this FAS is closed and processing continues. The connection will be reopened at the next connect interval.

**User Response:** This problem generally must be reported to the Compuware Technical Support personnel. But first, turn on the FAC logging facility and attempt to recreate the problem. Have the log and the SYSPRINT data set from FAC ready for the support personnel.

#### **MFM045E REPLY FROM @@(@@) NOT FOUND IN QUEUE INDEX**

**Severity:** Error

**Explanation:** This message indicates that a reply message was received from the FAS and the corresponding request could not be found in the queue index. If this msg occurs only at FAC startup it could be because a cold start of FAC was performed and hence no requests were pending on the disk queue.

**System Action:** Processing continues and message MFM047 is displayed.

**User Response:** A warm restart of the FAC will generally fix this problem. First display the status of FAC disk queue to see if it has become full. If so, increase the QUEUE\_MAX\_EVENTS value specified in the SYSIN parameter data set before restarting FAC.

#### **MFM046E MISMATCH BETWEEN QUEUE INDEX AND QUEUE DATA SET**

**Severity:** Error

**Explanation:** This message indicates that a reply message was received from the FAS and the corresponding request ID was found in the queue index, but when the record was read from disk, it showed a different request ID.

**System Action:** Processing continues and message MFM047 is displayed.

**User Response:** A warm restart of the FAC will generally fix this problem. First display the status of FAC disk queue to see if it has become full. If so, increase the QUEUE\_MAX\_EVENTS value specified in the SYSIN parameter data set before restarting FAC.

#### **MFM047E REPLY ID @@**

**Severity:** Error

**Explanation:** This message follows MFM045 and gives the reply ID that was received from the FAS and which could not be paired with a request ID in the queue index.

**System Action:** Processing continues.

**User Response:** See message MFM045.

#### **MFM048I THE FOLLOWING MODULES ARE LOADED INTO ECSA**

**Severity:** Informational

**Explanation:** This message is printed in the SYSPRINT data set and indicates that all modules named next via MFM009I messages were loaded into ECSA.

**System Action:** Processing continues.

**User Response:** None.

#### **MFM049I THE FOLLOWING MODULES ARE LOADED INTO PRIVATE STORAGE**

**Severity:** Informational

**Explanation:** This message is printed in the SYSPRINT data set and indicates that all modules named next via MFM009I messages were loaded into the private area of FAC.

**System Action:** Processing continues.

**User Response:** None.

#### **MFM050E CONNECTION WITH FAS @@@@ CLOSED**

**Severity:** Error

**Explanation:** This message indicates that the FAS named has failed to reply to three successive heartbeat requests.

**System Action:** If there is a secondary FAS defined, it is tried. If not, the primary FAS is used again. The connection is reopened and a HELLO message is sent. Until a reply to this HELLO is received, fault events are queued on the disk queue and are not sent to the FAS. When the FAS reestablishes fault event state these queued events are sent

**User Response:** Watch to see if communication with the FAS is started. If it is not, then stop and restart either the primary or the secondary FAS.

#### **MFM051E DUE TO 3 MISSED HEARTBEAT REQUESTS**

**Severity:** Error

**Explanation:** This message follows MFM050 indicating that the reason for the closure is missed heartbeats.

**System Action:** See message MFM050.

**User Response:** See message MFM050.

#### **MFM052I FAC IS RUNNING ON @@ RELEASE @@**

**Severity:** Informational

**Explanation:** This informational message indicates the name and release level on which this FAC is running.

**System Action:** Processing continues.

**User Response:** None.

#### **MFM053I LPAR NAME @@ CVTSNAME @@**

**Severity:** Informational

**Explanation:** This informational message indicates the name of the LPAR on which this FAC is running and the name of the operating system on which this FAC is running.

**System Action:** Processing continues.

**User Response:** None.

#### **MFM054E FAC ACTIVE SUBSYSTEM @@ ALREADY MARKED AS DEFAULT**

**Severity:** Error

**Explanation:** This message indicates that during the process of establishing a new FAC subsystem on this LPAR, a previous subsystem named in the message is already active and is already marked as the default subsystem.

**System Action:** FAC execution ends.

**User Response:** Only one FAC subsystem at a time may be marked as the default. Change the parameter specification of this FAC to indicate DEFAULT(NO) and reexecute FAC. Or you can stop the FAC job with the named subsystem, which will allow another subsystem to specify it as the default one. Note that if the FAC instance with the subsystem named is unable to be cancelled, or if it has been cancelled and its subsystem

remains active, then you can specify DEFAULT(YES,FORCE). The existing subsystem will be marked as not the default and the new one will be marked as the default.

**MFM055E INVALID COMMAND @@**

**Severity:** Error

**Explanation:** This message is sent to the FAS in reply to a command from the FAS when that command is not recognized by the FAC.

**System Action:** Processing continues.

**User Response:** Report this problem to the Compuware software support personnel.

**MFM056I FAULT EVENT REQUEST @@ @@ @@ @@**

**Severity:** Informational

**Explanation:** This message is written to SYSPRINT each time a Fault Event request is written to the FAS. The Event Type, Job Name, step name and the Jes JOBID are shown

**System Action:** Processing continues.

**User Response:** None.

**MFM057E FAC SUBSYSTEM @@ ABEND @@**

**Severity:** Error

**Explanation:** This message is written to the master console whenever the Fault Analytics subsystem abends. The name of the subsystem and the system or user abend code are shown.

**System Action:** The subsystem no longer processes either JCL errors or operator commands, but FAC remains active.

**User Response:** When convenient, stop and restart FAC. If this problem reoccurs, obtain a dump, either taken by FAC or the system via a SLIP and report the problem to the Compuware software support staff.

**MFM058E FAC SUBSYSTEM @@ OFFSET @@**

**Severity:** Error

**Explanation:** This message is written to the master console whenever the Fault Analytics subsystem abends. The name of the subsystem and the offset within the abending module are shown.

**System Action:** The subsystem no longer processes either JCL errors or operator commands, but FAC remains active.

**User Response:** When convenient, stop and restart FAC. If this problem reoccurs, obtain a dump, either taken by FAC or the system via a SLIP and report the problem to the Compuware software support staff.

**MFM059I FAC NOW EXECUTING UNDER USERID @@**

**Severity:** Informational

**Explanation:** This message is written to SYSPRINT indicating that the user ID you specified in the TCPIP\_USERID is now in control of the main task of FAC.

**System Action:** Processing continues.

**User Response:** None.

**MFM060I LOG @@ @@ SUCCESSFULLY**

**Severity:** Informational

**Explanation:** This message is written to SYSPRINT indicating that the action you requested in a "LOG" command has been successfully executed.

**System Action:** Processing continues.

**User Response:** None.

**MFM061E INSUFFICIENT ACCESS TO LOG DATA SET. SEE JOBLOG**

**Severity:** Error

**Explanation:** This message is written to SYSPRINT indicating that the USERID under which FAC is running does not have the necessary security access to the log data set. This access must be ACCESS(ALTER) in order that the log data set can be created and/or extended and be available.

**System Action:** Processing continues but without the log.

**User Response:** Either grant the user ID under which FAC is running ACCESS(ALTER) to the log data set, or supply a user ID that has this access level. Note that the log data set must be defined as a "generic" entity in order to pass the RACROUTE used in FAC.

#### **MF062E LOG TASK INITIALIZATION FAILURE RC=@@/@@@**

**Severity:** Error

**Explanation:** This message is written to SYSPRINT indicating that the log subtask has failed to initialize.

**System Action:** FAC processing continues but without the log.

**User Response:** Scan the system console and the JES joblog for messages relating to this problem. Look carefully for any system access (RACF, ACF/2, TOPSECRET) messages relating to the log data set.

#### **MF063E INSUFFICIENT ACCESS TO QUEUE DATA SET. SEE JOBLOG**

**Severity:** Error

**Explanation:** This message is written to SYSPRINT indicating that the USERID under which FAC is running does not have the necessary security access to the queue data set. This access must be ACCESS(ALTER) if the queue data set does NOT exist or ACCESS(CONTROL) if it does.

**System Action:** FAC terminates.

**User Response:** Either grant the user ID under which FAC is running the appropriate security access, or supply a user ID that has this access level. Note that the queue data set must be defined as a "generic" entity in order to pass the RACROUTE used in FAC.

#### **MF064E QUEUE TASK INITIALIZATION FAILURE**

**Severity:** Error

**Explanation:** This message is written to SYSPRINT indicating that the queue subtask has failed to initialize.

**System Action:** FAC terminates.

**User Response:** Scan the system console and the JES joblog for messages relating to this problem. Look carefully for any system access (RACF, ACF/2, TOPSECRET) messages relating to the queue data set.

#### **MF065I FAC INITIALIZATION SUCCESSFUL. RETCODE=00/00**

**Severity:** Informational

**Explanation:** This message is written to SYSPRINT indicating that initialization of FAC has been successful.

**System Action:** Processing continues.

**User Response:** None.

#### **MF066E QUEUE TASK FAILURE RETCODE=@@/@@@**

**Severity:** Error

**Explanation:** This message is written to SYSPRINT indicating that the queue subtask has failed. Return and reason codes are contained in this message.

**System Action:** FAC terminates.

**User Response:** Scan the system console and the JES joblog for messages relating to this problem. Look carefully for any system access (RACF, ACF/2, TOPSECRET) messages relating to the queue data set.

#### **MF067E LOG TASK FAILURE RETCODE=@@/@@@**

**Severity:** Error

**Explanation:** This message is written to SYSPRINT indicating that the log subtask has failed. Return and reason codes are contained in this message.

**System Action:** Processing continues but without the log.

**User Response:** Scan the system console and the JES joblog for messages relating to this problem. Look carefully for any system access (RACF, ACF/2, TOPSECRET) messages relating to the log data set.



**MFM068I NUMBER RECORDS PENDING PROCESSING @@**

**Severity:** Informational

**Explanation:** This message specifies the number of records that have not yet been processed by FAC. This number will be decremented as soon as a connection with the FAS is established.

**System Action:** Execution continues.

**User Response:** None.

**MFM069W FAC DISK QUEUE IS AT @@% OF CAPACITY**

**Severity:** Warning

**Explanation:** This message indicates that the disk queue is filling && that you should be aware that if it reaches 100% that new fault events will not be accepted from Abend-AID or from the system exit programs. This message will first be displayed when the queue reaches 75% and it will be displayed again each at each 5% interval. When the number of disk records used drops below 75% this message will no longer be displayed. Note that this message appears on the system console as well as in the SYSPRINT data set.

**System Action:** Execution continues.

**User Response:** Monitor these messages carefully. If you need to expand your disk queue data set you will have to follow the procedures in the Installation manual. You should ensure that communication is active with the associated FAS program because this is the way that events are freed from the disk queue. You may need to start communicating with a different FAS program in order for the disk queue to empty.

**MFM070W FAC FAS COMMUNICATION INACTIVE FOR @@ MINUTES**

**Severity:** Warning

**Explanation:** This message indicates that communication link with the Compuware Mainframe Event Processor (FAS) is not active and has not been for the number of minutes shown in this message. Fault events that are occurring during this time are being written to the FAC disk queue, but if this queue fills before communication with the FAS is established, later events will be lost. FAC has been trying to establish communication with both the primary and the (optional) secondary FAS but these attempts have not been successful.

**System Action:** Execution continues but without FAS communication.

**User Response:** Examine the FAC SYSPRINT data set to see if there are any messages that might help establish the reason why the connection with the FAS is not active. You should ensure that the FAS is running and is accepting TCP/IP connection requests.

**MFM071W UNABLE TO CONSTRUCT SDUMPX SYMREC RETCODE=@@/@@**

**Severity:** Warning

**Explanation:** This message indicates that the MFMSDUMP module could not create a symptom record to be included in the SDUMP that it was about to write.

**System Action:** The dump is created but without a symptom record.

**User Response:** None.

**MFM072W WLM ENCLAVE CREATION FAILED. @@ @@/@@**

**Severity:** Warning

**Explanation:** This message indicates that the process to create an WLM enclave has not been successful. The function name is shown in the message along with the return and reason codes from execution of this function. This is a warning message only because execution of FAC continues. See below.

**System Action:** FAC execution continues but all processing is performed in task mode and the enclave SRB is not dispatched. Hence there is no execution on any zIIP.

**User Response:** Report this message to your systems programmer who may need to call the Compuware technical support representative.

**MFM073I WLM ENCLAVE @@ CREATED SUCCESSFULLY**

**Severity:** Informational

**Explanation:** This message indicates that the process to create an WLM enclave has been successful and FAC is a member of the enclave named in the message.

**System Action:** Processing continues.

**User Response:** None.

**MFM074E WLM ENCLAVE DELETION FAILED. @@ @@/@@**

**Severity:** Error

**Explanation:** This message indicates that the process to delete an WLM enclave has not been successful. The function name is shown in the message along with the return and reason codes from execution of this function.

**System Action:** FAC execution ends.

**User Response:** Report this message to your systems programmer who may need to call the Compuware technical support representative.

**MFM076E WLM ENCLAVE SRB EXECUTION FAILED. RETCODE=@@**

**Severity:** Error

**Explanation:** This message indicates that the enclave SRB has failed to execute correctly. If the RETCODE in this message is 1C, then message MFM077 will be written next with the details concerning the failure.

**System Action:** FAC execution ends.

**User Response:** Report this message to your systems programmer who may need to call the Compuware technical support representative.

**MFM077E WLM ENCLAVE SRB REASON CODES=@@ @@ @@**

**Severity:** Error

**Explanation:** The three codes in this message correspond to the IEAMSCHD SYNCHCOMPADDR, SYNCHCODEADDR and SYNCHRSNADDR values.

**System Action:** FAC execution ends.

**User Response:** Report this message to your systems programmer who may need to call the Compuware technical support representative.

**MFM078E WLM ENCLAVE LEAVE FAILED. @@ @@/@@**

**Severity:** Error

**Explanation:** This message indicates that the process to leave the WLM enclave has not been successful. The function name is shown in the message along with the return and reason codes.

**System Action:** FAC execution ends.

**User Response:** Report this message to your systems programmer who may need to call the Compuware technical support representative.

**MFM079I FAULT EVENT REPLY @@ @@ @@ @@**

**Severity:** Informational

**Explanation:** This message is written to SYSPRINT each time a Fault Event reply is received from the FAS. The Event Type, Job Name, step name and the job JESID are shown.

**System Action:** Processing continues.

**User Response:** None.

**MFM080E MFMQUERT VSAM RELATIVE RECORD NUMBER @@**

**Severity:** Error

**Explanation:** This message is written to SYSPRINT each time a VSAM error occurs. the relative record number causing the VSAM error is shown.

**System Action:** Processing continues.

**User Response:** Report this problem to the Compuware Technical Support Representatives.

**MFM081W ACCESS DENIED TO SPOOL DATA SET**

**Severity:** Warning

**Explanation:** This message is sent as the description of a JCL error to the Fault Analytics Web Application in lieu of the description from the JCL on the spool data set. FAC is unable to read the spool due to insufficient RACROUTE access to the data set on the spool.

**System Action:** Processing continues but without the full description of what caused this JCL error.

**User Response:** The USERID under which FAC is executing (which can be changed via the TCPIP\_USERID parameter) must have ACCESS(READ) to the general resource class (JESSPOOL) for the entity named with two asterisks. That is, for all data set names that can exist on the spool. If you do not want to grant this access then you will not get full descriptions of the exact cause of the JCL error.

#### **MFM082W FAS CLOSED DUE TO @@. RC=@@**

**Severity:** Warning

**Explanation:** The FAC has closed the communication link with the current FAS for the reason described in this message. Any return code associated with the error is shown as well.

**System Action:** Processing continues.

**User Response:** If the communications is closed more than normally is the case, or for reasons which you cannot explain then refer this problem to the Compuware Technical Support staff.

#### **MFM083E SUBSYSTEM @@ ALREADY EXISTS BUT IS NOT A FAC SUBSYSTEM**

**Severity:** Error

**Explanation:** This message indicates that the 4-character subsystem ID you specified in the //SYSIN DD parameter data set already exists on your system but is used by some other program that is not Compuware's Fault Analytics.

**System Action:** FAC terminates.

**User Response:** Ensure that the subsystem ID you have specified is unique on your system then restart FAC.

#### **MFM084E INITIALIZATION OF Z/OS XML PARSER FAILED. RETCODE @@/@@**

**Severity:** Error

**Explanation:** This message indicates that the initialization of the z/OS parser has failed. This initialization is a call to GXLLINI which has resulted in a non-zero return and reason code. Both of these are shown in the message.

**System Action:** FAC terminates.

**User Response:** You may have to report this failure to the Compuware Technical Personnel. Be sure to have the entire SYSPRINT data set ready for them. As a work-around you can specify OPERATING\_SYSTEM(01.07) in the SYSIN parameters. This will cause the FAC to use its own XML parser rather than the one from the operating system.

#### **MFM085E INVALID DATA FOUND IN XML CREATION JOB: @@ RETCODE @@/@@**

**Severity:** Error

**Explanation:** This message indicates that the module which creates XML in preparation for sending to the jEC has found that it cannot process the input message.

**System Action:** The event is discarded, but processing continues.

**User Response:** You may have to report this failure to the Compuware Technical Personnel. Be sure to have the entire SYSPRINT data set ready for them to see.

#### **MFM086E UNRECOVERABLE LICENSE MANAGEMENT ERROR RC=@@/@@**

**Severity:** Error

**Explanation:** This message indicates that an attempt to determine if License Management is licensed on this LPAR has resulted in a fatal and unrecoverable error within the license management system.

**System Action:** FAC execution ends.

**User Response:** Insure that the License Management is active on this LPAR and that LMSINIS has run successfully since the latest IPL. Refer this problem to your product security personnel.

#### **MFM087I JCL ERROR DATA WAS UNAVAILABLE**

**Severity:** Informational

**Explanation:** This message is sent as the description of a JCL error to the Fault Analytics Web Application in lieu of the description from the JCL on the spool data set when the FAC is unable to get information from the spool. The Fault Analytics Web Application will read the spool up to 16 times before giving up.

**System Action:** Processing continues but without the full description of what caused this JCL error.

**User Response:** None

#### **MF088E FAULT MANAGEMENT IS NOT LICENSED TO RUN ON THIS LPAR**

**Severity:** Error

**Explanation:** This message indicates that this version of Fault Management is not licensed to run on this LPAR.

**System Action:** FAC execution ends.

**User Response:** Insure that the most current license certificate has been imported to the license file on this LPAR and insure LMSINIT has been run. Refer this problem to you product security personnel.

#### **MF089E VIRTUAL STORAGE NOT AVAILABLE FOR PRODUCT LICENSE CHECKING**

**Severity:** Error

**Explanation:** This message indicates that there is not enough virtual storage for the module which checks for a valid product license to run.

**System Action:** FAC execution ends.

**User Response:** Increase the value on the REGION= parameter of the EXEC statement used to invoke the Fault Management and re-run the job.

#### **MF090I LICENSE CHECK IN FAILED. RC=@@/@@**

**Severity:** Informational

**Explanation:** This message indicates that there was a non zero return code from LMS when the license was checked back in at Fault Management end of job. This is a informational message only because Fault Management is ending.

**System Action:** End of job processing continues.

**User Response:** Examine the return and reason codes and if necessary refer this problem to the Compuware technical support personnel.

#### **MF100I SYSIN PARAMETER LISTING**

**Severity:** Informational

**Explanation:** This message indicates that the //SYSIN parameters specified by the customer are listed next.

**System Action:** Processing continues.

**User Response:** None.

#### **MF101I END OF SYSIN PARAMETER LISTING**

**Severity:** Informational

**Explanation:** This message indicates that the //SYSIN parameters specified by the customer have all been listed above.

**System Action:** Processing continues.

**User Response:** None.

#### **MF102E SYSTEM VARIABLE SUBSTITUTION FAILED. @@**

**Severity:** Error

**Explanation:** During the parsing of the //SYSIN DD data, the z/OS system variable substitution routine is called for each parameter. A non-zero return code resulted from one of these calls.

**System Action:** FAC execution ends.

**User Response:** Correct the parameter in error and reexecute FAC.

**MFM103E UNABLE TO OPEN //SYSIN DATA SET**

**Severity:** Error

**Explanation:** The attempt to open the SYSIN data set failed. There is no return code associated with this error but a message may be displayed in the joblog that better explains the error.

**System Action:** FAC execution ends.

**User Response:** Ensure that the //SYSIN DD statement exists in the JCL used to invoke FAC and ensure that it points to a data set with DCB characteristics of LRECL=80,

**MFM104E LOG DATA SET NAME MISSING**

**Severity:** Error

**Explanation:** Regardless of whether you specify LOG\_INITIAL(OPEN) or LOG\_INITIAL(CLOSED), you must specify a data set name for your VSAM log data set. This data set will not be defined or opened until you request that logging be activated, but the name must be known regardless.

**System Action:** FAC execution ends.

**User Response:** Add the 1- to 35-character log data set name. Be certain that the USERID under which FAC runs has ALTER access to the data set name you supply. Reexecute FAC.

**MFM105E ILLOGICAL SEQUENCE OF COMMENT CONTROL CHARACTERS**

**Severity:** Error

**Explanation:** Comment control characters are "/\*" to begin a comment and "\*/" to end a comment. These must be paired; one of each. All statements between this pair will be treated as a comment. This message indicates that the pairing of these control sequences is not correct.

**System Action:** FAC execution ends.

**User Response:** Correct the comment pairing error and reexecute FAC.

**MFM106E UNKNOWN SYSIN KEYWORD @@**

**Severity:** Error

**Explanation:** The SYSIN keyword shown in the message text is not one of the valid keywords.

**System Action:** FAC execution ends.

**User Response:** Correct the KEYWORD in the SYSIN data set and reexecute FAC.

**MFM107E SUBSYSTEM\_ID PARAMETER MISSING**

**Severity:** Error

**Explanation:** The SUBSYSTEM\_ID parameter names a unique 4-character name for this FAC instance. This name must not be duplicated on this LPAR, and must NOT be defined in the SYS1.PARMLIB IEFSSNxx member.

**System Action:** FAC execution ends.

**User Response:** Add the SUBSYSTEM\_ID parameter to the //SYSIN data set and reexecute FAC. This 4-character name must be unique across all subsystems running on this LPAR but may be the same on different LPARs. That is, you may name all your FAC subsystems with the same name on each LPAR; But on any one LPAR this name must be unique. And DO NOT DEFINE THIS NAME IN THE IEFSSNxx SYS1.PARMLIB member.

**MFM108E LANGUAGE PARM ON EXEC STATEMENT INVALID**

**Severity:** Error

**Explanation:** The LANGUAGE parameter on the EXEC statement is invalid. If present, at this time it must specify LANGUAGE=EN. At a future date other languages will be supported. If this parameter is omitted EN is used as a default. Any other value for LANGUAGE= is invalid.

**System Action:** FAC execution ends.

**User Response:** Correct the LANGUAGE parameter or omit it entirely and reexecute FAC.

**MFM110E NAME PARAMETER MISSING**

**Severity:** Error

**Explanation:** The NAME parameter is required and must specify a name for this FAC that is meaningful to personnel in your enterprise who may see messages from this FAC. The value you specify in the NAME parameter is not used for any purpose except to uniquely identify this instance of FAC.

**System Action:** FAC execution ends.

**User Response:** Add the NAME parameter and reexecute FAC.

#### **MF111E PRI\_FAS\_PORT PARAMETER MISSING**

**Severity:** Error

**Explanation:** The TCP/IP port number on which the FAS that you have designated as "primary" must be specified. This number specifies the port number on which the FAS is "listening" and through which connectivity with this FAS will occur. The PORT number you specify here must match the PORT number specified to the "primary" instance of the FAS.

**System Action:** FAC execution ends.

**User Response:** Add the PRI\_FMS\_PORT parameter and reexecute FAC.

#### **MF112E PRI\_FMS\_ADDR AND PRI\_FMS\_NAME CANNOT BOTH BE OMITTED**

**Severity:** Error

**Explanation:** Either the TCP/IP address, in dotted decimal notation, or the name, known to your domain name server, must be specified for the primary FAS. One or the other is required.

**System Action:** FAC execution ends.

**User Response:** Add either the PRI\_FMS\_NAME or the PRI\_FMS\_ADDR and reexecute FAC.

#### **MF113E PRI\_FMS\_ADDR AND PRI\_FMS\_NAME CANNOT BOTH BE SPECIFIED**

**Severity:** Error

**Explanation:** You have specified both the TCP/IP address, in dotted decimal notation, and the name known to your domain name server for the primary FAS. Only one of these parameters may be specified.

**System Action:** FAC execution ends.

**User Response:** Remove either the PRI\_FMS\_NAME or the PRI\_FMS\_ADDR and reexecute FAC.

#### **MF116E AUTOMATIC RESTART MANAGEMENT NAME MISSING**

**Severity:** Error

**Explanation:** You have specified ARM(YES) but have not specified the name to be used for Automatic Restart Management. This name must be from 1 to 16 bytes long. FAC will register with the z/OS automatic restart management and will then be eligible for this facility. This name can consist of uppercase letters, numbers, and the following special characters: underscore, dollar sign pound sign or At sign. The first character cannot be numeric.

**System Action:** FAC execution ends.

**User Response:** Please see "z/OS V1Rn.0 MVS Setting Up a Sysplex" for a complete discussion of how an installation invokes this facility. When all of the steps outlined in this manual have been followed, then add the ARM\_NAME parameter and reexecute FAC. In the meantime, specify ARM(NO) or omit the parameter.

#### **MF117E QUEUE\_DSNAME PARAMETER MISSING**

**Severity:** Error

**Explanation:** A 1- to 35-character data set name for the VSAM queue used by FAC is required. This data set must be available to FAC, which will automatically invoke IDCAMS to define this data set if it does not exist, or will just allocate it if it does exist.

**System Action:** FAC execution ends.

**User Response:** Add the name you want the queue data set to be called and reexecute FAC. Note that the user ID under which FAC runs MUST have ACCESS(ALTER) to whatever data set name you choose. You will see the IDCAMS SYSPRINT messages in the A/FM SYSPRINT data set.

#### **MF121E SUBSYSTEM\_ID PARAMETER INVALID**

**Severity:** Error

**Explanation:** The SUBSYSTEM\_ID parameter has been specified, but is not valid. The value for this parameter must be 4 bytes long consisting only of uppercase letters and numbers and the international character \$ # or @. The first character must be a letter.

**System Action:** FAC execution ends.

**User Response:** Correct the SUBSYSTEM\_ID parameter and reexecute FAC.

#### **MF122E DISPLAY\_NAME PARAMETER INVALID**

**Severity:** Error

**Explanation:** The DISPLAY\_NAME parameter has been specified, but is not valid. The value for this parameter must be from 1 to 40 bytes long. Any displayable characters are valid.

**System Action:** FAC execution ends.

**User Response:** Correct the DISPLAY\_NAME parameter and reexecute FAC.

#### **MF123E DEFAULT PARAMETER INVALID**

**Severity:** Error

**Explanation:** The DEFAULT parameter has been specified, but is not valid. Only two values are allowed: YES or NO. Only one FAC instance in a given LPAR may specify that it is the default; all others must specify NO.

**System Action:** FAC execution ends.

**User Response:** Correct the DEFAULT parameter and reexecute FAC.

#### **MF124E CAPTURE\_MSGIDS PARAMETER INVALID**

**Severity:** Error

**Explanation:** The CAPTURE\_MSGIDS parameter has been specified but is not valid. Within the parentheses must be one or more 1- to 16-byte msg identification strings that will be used in the same manner as the static JCL error message identifiers. A maximum of 226 MSGIDS may be specified.

**System Action:** FAC execution ends.

**User Response:** Correct the CAPTURE\_MSGIDS parameter and reexecute FAC.

#### **MF125E EVENT\_WAIT PARAMETER INVALID**

**Severity:** Error

**Explanation:** The EVENT\_WAIT parameter can only specify "YES" or "NO". If this parameter is omitted "YES" is assumed. If EVENT\_WAIT is specified as "YES" or allowed to default to "YES", it indicates that when Abend-AID or any other program that published events to Fault Analytics that these programs will be kept from continuing their execution until the event has been successfully written to disk by the FAC address space. In most cases this is the desirable option. If it is determined that too much time is lost while FAC is processing the event, then specify "NO" to this parameter. The liability is that events may be lost if FAC terminates abnormally.

**System Action:** FAC execution ends.

**User Response:** Correct the EVENT\_WAIT parameter and reexecute FAC.

#### **MF126E TCPIP\_USERID PARAMETER INVALID**

**Severity:** Error

**Explanation:** The TCPIP\_USERID parameter must specify a 1- to 8- character valid user ID. You may omit this parameter in which case the user ID under which FAC was submitted is used.

**System Action:** FAC execution ends.

**User Response:** Either correct the user ID parameter or omit it entirely. Reexecute FAC.

#### **MF127E LOG\_INITIAL PARAMETER INVALID**

**Severity:** Error

**Explanation:** The LOG\_INITIAL parameter must specify either (OPEN) (CLOSED) or (). Any other values are invalid. If you omit this parameter or specify () the default is LOG\_INITIAL(CLOSED). Compuware suggests that you specify all the other parameters for logging that are applicable to your SMS environment,

and also specify LOG\_INITIAL(CLOSED). You can dynamically start logging using the specified parameters if the need arises. With the log in a CLOSED state no system resources are consumed.

**System Action:** FAC execution ends

**User Response:** Correct the LOG\_INITIAL parameter and reexecute FAC.

#### **MF128E LOG\_DSNAME PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The LOG\_DSNAME parameter must specify a 1- to 35- character data set name for the optional logging. Be sure you haven't specified more than 35 characters because IDCAMS appends a .DATA and a .INDEX to this name when the cluster is defined.

**System Action:** FAC execution ends

**User Response:** Correct the LOG\_DSNAME and reexecute FAC.

#### **MF130E LOG\_VOLSER PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The LOG\_VOLSER parameter must specify a 6-character volume serial number for the volume on which the log is to be defined. You must specify this parameter only if your SMS environment dictates it, else you may omit this parameter and take your system defaults.

**System Action:** FAC execution ends

**User Response:** Correct the LOG\_VOLSER and reexecute FAC.

#### **MF131E LOG\_TRKS PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The LOG\_TRKS parameter must specify a 1- to 8-digit number representing the number of tracks you want defined in the primary and secondary extents of the log data set. The maximum value for this parameter is 65535 and the minimum value is 1.

**System Action:** FAC execution ends.

**User Response:** Correct the LOG\_TRKS and reexecute FAC.

#### **MF132E LOG\_CYLS PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The LOG\_CYLS parameter must specify a 1- to 8-digit number representing the number of cylinders you want defined in the primary and secondary extents of the log data set. The maximum value for this parameter is 65535 and the minimum value is 1.

**System Action:** FAC execution ends.

**User Response:** Correct the LOG\_CYLS and reexecute FAC.

#### **MF133E LOG\_MGMTCLASS PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The LOG\_MGMTCLASS parameter must specify a 1- to 8- character name for the management class SMS parameter that is defined in your installation for the log data set.

**System Action:** FAC execution ends.

**User Response:** Correct the LOG\_MGMTCLASS parameter and reexecute FAC.

#### **MF134E LOG\_DATACLASS PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The LOG\_DATACLASS parameter must specify a 1- to 8- character name for the data class SMS parameter that is defined in your installation for the log data set.

**System Action:** FAC execution ends.

**User Response:** Correct the LOG\_DATACLASS parameter and reexecute FAC.



**MFM135E LOG\_STORCLASS PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The LOG\_STORCLASS parameter must specify a 1- to 8- character name for the storage class SMS parameter that is defined in your installation for the log data set.

**System Action:** FAC execution ends.

**User Response:** Correct the LOG\_STORCLASS parameter and reexecute FAC.

**MFM136E QUEUE\_DSNAME PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The QUEUE\_DSNAME parameter must specify a 1- to 35- character data set name for the queue data set. Be sure you haven't specified more than 35 characters. This is a required parameter and cannot be omitted.

**System Action:** FAC execution ends.

**User Response:** Correct the QUEUE\_DSNAME and reexecute FAC.

**MFM138E QUEUE\_VOLSER PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The QUEUE\_VOLSER parameter must specify a 6-character volume serial number for the volume on which the queue is to be defined. You must specify this parameter only if your SMS environment dictates it, else you may omit this parameter and take your system defaults.

**System Action:** FAC execution ends.

**User Response:** Correct the QUEUE\_VOLSER and reexecute FAC.

**MFM139E QUEUE\_TRKS PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The QUEUE\_TRKS parameter must specify a 1- to 8-digit number representing the number of tracks you want defined in the primary and secondary extents of the queue data set. The maximum value for this parameter is 65535 and the minimum value is 1.

**System Action:** FAC execution ends.

**User Response:** Correct the QUEUE\_TRKS and reexecute FAC.

**MFM140E QUEUE\_CYLS PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The QUEUE\_CYLS parameter must specify a 1- to 8-digit number representing the number of cylinders you want defined in the primary and secondary extents of the queue data set. The maximum value for this parameter is 65535 and the minimum value is 1.

**System Action:** FAC execution ends.

**User Response:** Correct the QUEUE\_CYLS and reexecute FAC.

**MFM141E QUEUE\_MGMTCLASS PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The QUEUE\_MGMTCLASS parameter must specify a 1- to 8- character name for the management class SMS parameter that is defined in your installation for the queue data set.

**System Action:** FAC execution ends.

**User Response:** Correct the QUEUE\_MGMTCLASS parameter and reexecute FAC.

**MFM142E QUEUE\_DATACLASS PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The QUEUE\_DATACLASS parameter must specify a 1- to 8- character name for the data class SMS parameter that is defined in your installation for the queue data set.

**System Action:** FAC execution ends.

**User Response:** Correct the QUEUE\_DATACLASS parameter and reexecute FAC.

**MF143E QUEUE\_STORCLASS PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The QUEUE\_STORCLASS parameter must specify a 1- to 8- character name for the storage class SMS parameter that is defined in your installation for the log data set.

**System Action:** FAC execution ends.

**User Response:** Correct the QUEUE\_STORCLASS parameter and reexecute FAC.

**MF144E QUEUE\_MAX\_EVENTS PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The QUEUE\_MAX\_EVENTS parameter must specify a number representing the maximum number of events that can be queued in the queue data space pending sending or receiving to or from the FAS. The minimum number is 128 and the maximum is only the amount of virtual storage your installation allows for system shared data spaces. Compuware suggests that a value of 1200 be used as a starting point for this value. If 1200 is too big it can be decreased later. There is no harm in having too many queue elements.

**System Action:** FAC execution ends.

**User Response:** Correct the QUEUE\_MAX\_EVENTS parameter and reexecute FAC.

**MF146E TCPIP\_NAME PARAMETER INVALID**

**Severity:** Error

**Explanation:** The TCPIP\_NAME parameter must specify a 1- to 8- character name of the TCP/IP protocol stack (address space) running on this LPAR that you want FAC to use for its communication with the FAS. This parameter is only necessary if you have multiple TCP/IP address spaces and want to choose a particular one. You may omit this parameter if you have only one TCP/IP address space active.

**System Action:** FAC execution ends.

**User Response:** Correct the TCPIP\_NAME and reexecute FAC.

**MF147E COMMAND\_CHARACTER\_OPERAND IS INVALID**

**Severity:** Error

**Explanation:** The command character must be one byte consisting only of one of the special characters not already assigned on your system as a command character. For instance, the dollar sign is used as the JES/2 command character. If you omit this operand, or specify it as COMMAND\_CHARACTER(), then no character will be used. In this case any commands you want to enter to FAC will require the entire MODIFY jobname format.

**System Action:** FAC execution ends.

**User Response:** Correct the command character and reexecute FAC.

**MF148E PRI\_FMS\_TCPIP\_NAME PARAMETER INVALID**

**Severity:** Error

**Explanation:** The PRI\_FMS\_TCPIP\_NAME must specify a 1- to 255- character name known to your Domain Name Server of the primary FAS with which this FAC is to communicate. Either this parameter or PRI\_FMS\_TCPIP\_ADDR is required. Both cannot be specified.

**System Action:** FAC execution ends.

**User Response:** Correct the PRI\_FMS\_TCPIP\_NAME and reexecute FAC.

**MF149E PRI\_FMS\_TCPIP\_ADDR PARAMETER INVALID**

**Severity:** Error

**Explanation:** The PRI\_FMS\_TCPIP\_ADDR must specify a 1- to 16-byte address of the primary FAS with which this FAC is to communicate. This parameter must consist of 1 to 4 numbers between the values of 0 and 255 separated by periods. This is known as dotted decimal notation. Note that either this parameter or PRI\_FMS\_TCPIP\_NAME be specified but both cannot be.

**System Action:** FAC execution ends.

**User Response:** Correct the PRI\_FMS\_TCPIP\_ADDR and reexecute FAC.

**MFM150E PRI\_FMS\_PORT PARAMETER INVALID**

**Severity:** Error

**Explanation:** The PRI\_FMS\_PORT parameter must specify a 1- to 8- byte number representing the port number on which the primary FAS is "listening" for communication with this FAC. The range of this number must be between 0 and 65535. Check with your communications personnel to ensure that any routers and/or firewalls in your network between the z/OS LPAR on which this FAC is executing and the primary FAS allow passage of connection requests to this port number.

**System Action:** FAC execution ends.

**User Response:** Correct the PRI\_FMS\_PORT and reexecute FAC.

**MFM151E SEC\_FMS\_TCPIP\_NAME PARAMETER INVALID**

**Severity:** Error

**Explanation:** The SEC\_FMS\_TCPIP\_NAME must specify a 1- to 255- character name known to your Domain Name Server of the secondary FAS with which this FAC is to communicate. Either this parameter or SEC\_FMS\_TCPIP\_ADDR is required. Both cannot be specified.

**System Action:** FAC execution ends.

**User Response:** Correct the SEC\_FMS\_TCPIP\_NAME and reexecute FAC.

**MFM152E SEC\_FMS\_TCPIP\_ADDR PARAMETER INVALID**

**Severity:** Error

**Explanation:** The SEC\_FMS\_TCPIP\_ADDR must specify a 1- to 16-byte address of the secondary FAS with which this FAC is to communicate. This parameter must consist of 1 to 4 numbers between the values of 0 and 255 separated by periods. This is known as dotted decimal notation. Note that either this parameter or SEC\_FMS\_TCPIP\_NAME be specified but both cannot be.

**System Action:** FAC execution ends.

**User Response:** Correct the SEC\_FMS\_TCPIP\_ADDR and reexecute FAC.

**MFM153E SEC\_FMS\_PORT PARAMETER INVALID**

**Severity:** Error

**Explanation:** The SEC\_FMS\_PORT parameter must specify a 1- to 8- byte number representing the port number on which the secondary FAS is "listening" for communication with this FAC. The range of this number must be between 0 and 65535. Check with your communications personnel to insure that any routers and/or firewalls in your network between the z/OS LPAR on which this FAC is executing and the secondary FAS allow passage of connection requests to this port number.

**System Action:** FAC execution ends.

**User Response:** Correct the SEC\_FMS\_PORT and reexecute FAC.

**MFM155E ARM PARAMETER INVALID**

**Severity:** Error

**Explanation:** The ARM parameter must specify either ARM(YES), if you want Automatic Restart Management to restart this FAC in case of abnormal termination, or ARM(NO), if you do not want the FAC restarted. Initially you should specify ARM(NO) until you have assured yourself that the FAC is working correctly under normal circumstances. When this is the case you can request ARM support.

**System Action:** FAC execution ends.

**User Response:** Correct the ARM parameter and reexecute FAC

**MFM156E ARM\_ELEMENT\_NAME PARAMETER INVALID**

**Severity:** Error

**Explanation:** The ARM\_ELEMENT\_NAME parameter specifies a 1- to 16- character name to be used by z/OS in identifying this program to the Automatic Restart Management system. Only letters and numbers and the special characters "\_", "\$", "#", and "@" are valid. In addition, the first byte must not be numeric.

**System Action:** FAC execution ends.

**User Response:** Correct the ARM\_ELEMENT\_NAME parameter and reexecute FAC.

**MF158E JCL\_ERRORS PARAMETER INVALID**

**Severity:** Error

**Explanation:** The JCL\_ERRORS parameter must specify JCL\_ERRORS(YES), if you want FAC to capture and report jobs which contain JCL errors, or JCL\_ERRORS(NO) if you do not want this support.

**System Action:** FAC execution ends.

**User Response:** Correct the JCL\_ERRORS parameter and reexecute FAC.

**MF159E NON\_ZERO\_RETCDs PARAMETER INVALID**

**Severity:** Error

**Explanation:** The NON\_ZERO\_RETCDs parameter must specify NON\_ZERO\_RETCDs(YES) if you want FAC to capture and report jobs that end with return codes other than 0. Specify NON\_ZERO\_RETCDs(NO) if you do not want this support. Note that if you do not want the SMF Accounting Routine exit to be activated that you must specify JOB\_TIMINGS(NO) as well as specifying NO to both return code processing parameters and NO to CAPTURE\_ABENDS(NO).

**System Action:** FAC execution ends.

**User Response:** Correct the NON\_ZERO\_RETCDs parameter and reexecute FAC.

**MF160E ZERO\_RETCDs PARAMETER INVALID**

**Severity:** Error

**Explanation:** The ZERO\_RETCDs parameter must specify ZERO\_RETCDs(YES) if you want FAC to capture and report jobs that end with return codes of 0. Specify ZERO\_RETCDs(NO) if you do not want this support. Note that if you do not want the SMF Accounting Routine exit to be activated, you must specify JOB\_TIMINGS(NO) as well as specifying NO to both return code processing parameters and CAPTURE\_ABENDS(NO).

**System Action:** FAC execution ends.

**User Response:** Correct the ZERO\_RETCDs parameter and reexecute FAC.

**MF161E JOB\_TIMINGS PARAMETER INVALID**

**Severity:** Error

**Explanation:** The JOB\_TIMINGS parameter must specify either JOB\_TIMINGS(YES) if you want FAC to add the CPU and wall-clock times that a job has run to events captured and reported on by Abend\_AID. Specify JOB\_TIMINGS(NO) if you do not want this support. Note that if you do not want the SMF Accounting Routine exit to be activated, you must specify JOB\_TIMINGS(NO) as well as specifying NO to both return code processing parameters and CAPTURE\_ABENDS(NO).

**System Action:** FAC execution ends.

**User Response:** Correct the JOB\_TIMINGS parameter and reexecute FAC.

**MF162E MASTER\_TIMER PARAMETER INVALID**

**Severity:** Error

**Explanation:** The MASTER\_TIMER parameter is required and must specify a 1- to 8-digit number representing the number of seconds that are to elapse between each time FAC checks its queue for work to perform. The lowest value allowed is 1 second and the highest is 300 seconds. Compuware recommends a value of 5 seconds. Note that all other timer values must be an even multiple of this value and this number must be less than all others.

**System Action:** FAC execution ends.

**User Response:** Correct the MASTER\_TIMER parameter and reexecute FAC.

**MF163E HEARTBEAT\_TIMER PARAMETER INVALID**

**Severity:** Error

**Explanation:** The HEARTBEAT\_TIMER parameter is required and must specify a 1- to 8-digit number representing the number of seconds that are to elapse between each heartbeat message sent from FAC to the currently active FAS. This number can range from 2 to 300 seconds. Note that this value must be an even multiple of the MASTER\_TIMER value and must be greater than it.

**System Action:** FAC execution ends.

**User Response:** Correct the HEARTBEAT\_TIMER parameter and reexecute FAC.

#### **MFM164E CONNECT\_TIMER PARAMETER INVALID**

**Severity:** Error

**Explanation:** The CONNECT\_TIMER parameter is required and must specify a 1- to 8-digit number representing the number of seconds that are to elapse between each attempt to connect to the primary or secondary FAS. This number can range from 1 to 300 seconds. Note that this value must be an even multiple of the MASTER\_TIMER value and must be greater than it.

**System Action:** FAC execution ends.

**User Response:** Correct the CONNECT\_TIMER parameter and reexecute FAC.

#### **MFM165E HELLO\_TIMER PARAMETER INVALID**

**Severity:** Error

**Explanation:** The HELLO\_TIMER parameter is required and must specify a 1- to 8-digit number representing the number of seconds that are to elapse between each attempt to communicate over the established TCP/IP connection with the primary or secondary FAS. This value can range from 1 to 300 seconds. Note that this value must be an even multiple of the MASTER\_TIMER and must be greater than it. If the FAS misses three HELLO messages then FAC closes the connection and attempts to use the alternate FAS for event processing.

**System Action:** FAC execution ends.

**User Response:** Correct the HELLO\_TIMER parameter and reexecute FAC.

#### **MFM166E MASTER\_TIMER PARAMETER REQUIRED**

**Severity:** Error

**Explanation:** The MASTER\_TIMER parameter must specify the number of seconds that will elapse between executions of the timer exit code. This value must be less than or equal to the other three timer interval values and each of them must be a multiple of this value. For instance, if MASTER\_INTERVAL(30) is specified, then for the other timer intervals, values of 30, 60, 90, 120, etc. would be valid.

**System Action:** FAC execution ends.

**User Response:** Add the MASTER\_TIMER parameter and reexecute FAC.

#### **MFM167E HEARTBEAT\_TIMER PARAMETER REQUIRED**

**Severity:** Error

**Explanation:** The HEARTBEAT\_TIMER parameter must specify the number seconds that will elapse between messages sent from the FAC to the FAS, which are required to be certain that the FAS is still active. This value must be a multiple of the MASTER\_TIMER value.

**System Action:** FAC execution ends.

**User Response:** Add the HEARTBEAT\_TIMER parameter and reexecute FAC.

#### **MFM168E CONNECT\_TIMER PARAMETER REQUIRED**

**Severity:** Error

**Explanation:** The CONNECT\_TIMER parameter must specify the number seconds that will elapse between attempts to connect the FAC to a FAS. This value must be greater than the MASTER\_TIMER value and must be a multiple of it.

**System Action:** FAC execution ends.

**User Response:** Add the CONNECT\_TIMER parameter and reexecute FAC.

#### **MFM169E HELLO\_TIMER PARAMETER REQUIRED**

**Severity:** Error

**Explanation:** The HELLO\_TIMER parameter must specify the number seconds that can elapse between the time that FAC sends a HELLO request to the FAS and the time that the reply must arrive.

**System Action:** FAC execution ends.

**User Response:** Add the HELLO\_TIMER parameter and reexecute FAC.

**MFM170E HEARTBEAT\_TIMER VALUE INVALID**

**Severity:** Error

**Explanation:** The HEARTBEAT\_TIMER parameter must specify a value equal to or greater than the MASTER\_TIMER value and must be a multiple of it.

**System Action:** FAC execution ends.

**User Response:** Correct the HEARTBEAT\_TIMER parameter and reexecute FAC

**MFM171E CONNECT\_TIMER VALUE INVALID**

**Severity:** Error

**Explanation:** The CONNECT\_TIMER parameter must specify a value equal to or greater than the MASTER\_TIMER value and must be a multiple of it.

**System Action:** FAC execution ends.

**User Response:** Correct the CONNECT\_TIMER parameter and reexecute FAC

**MFM172E HELLO\_TIMER VALUE INVALID**

**Severity:** Error

**Explanation:** The HELLO\_TIMER parameter must specify a value equal to or greater than the MASTER\_TIMER value and must be a multiple of it.

**System Action:** FAC execution ends.

**User Response:** Correct the HELLO\_TIMER parameter and reexecute FAC

**MFM173E QUEUE\_MAX\_EVENTS PARAMETER IS REQUIRED**

**Severity:** Error

**Explanation:** The number representing the maximum number of events that can be held pending by this FAC is a required parameter.

**System Action:** FAC execution ends.

**User Response:** Add the QUQUQ\_MAX\_EVENTS parameter and reexecute FAC

**MFM174E PROCESS\_EVENTS PARAMETER IS INVALID**

**Severity:** Error

**Explanation:** The PROCESS\_EVENTS keyword may specify one of two values: AAFM or BOTH. Neither of this was entered. AAFM indicates that, when an event has been processed by this FAC subsystem, it is NOT to also be processed by an older version of Fault Analytics even though that older version is active on this LPAR. BOTH indicates that after this FAC has processed an event that an older version of Fault Analytics that is active on the LPAR is to also handle the event. If You specify BOTH, then you must not have different Windows Servers for each version of Fault Analytics.

**System Action:** FAC execution ends.

**User Response:** Enter one of the two valid values for this keyword or omit the keyword and take the default, which is AAFM.

**MFM175E INCLUDE\_CC0 AND EXCLUDE\_CC0 CANNOT BOTH BE SPECIFIED**

**Severity:** Error

**Explanation:** These two parameters a mutually exclusive. You may specify one or the other but not both. The INCLUDE\_CC0 gives a list of jobs with completion codes of 0 that are to be captured as fault events. The EXCLUDE\_CC0 gives a list of jobs with completion codes greater than 0, which are to be captured in fault events. In the first case, ONLY jobs in this list will be captured. In the second case only jobs NOT in this list will be captured.

**System Action:** FAC execution ends.

**User Response:** Remove one or the other of these two parameters and reexecute FAC.

**MFM176E INCLUDE\_CCN0 AND EXCLUDE\_CCN0 CANNOT BOTH BE SPECIFIED**

**Severity:** Error

**Explanation:** These two parameters are mutually exclusive. You may specify one or the other but not both. The INCLUDE\_CCN0 gives a list of jobs with completion codes of 0 that are to be captured as fault events. The EXCLUDE\_CCN0 gives a list of jobs with completion codes greater than 0, which are to be captured in fault events. In the first case, ONLY jobs in this list will be captured. In the second case only jobs NOT in this list will be captured.

**System Action:** FAC execution ends.

**User Response:** Remove one or the other of these two parameters and reexecute FAC.

#### **MFM177E INCLUDE\_CC0 PARAMETER INVALID**

**Severity:** Error

**Explanation:** The INCLUDE\_CC0 parameter must specify a list of 1- to 8-character job names (which can include wild card characters) representing jobs that are to be captured and reported when the completion code of the job is zero. When this parameter is specified, only jobs that meet the criteria in this list are included. All others are excluded. There can be a maximum of 255 jobnames in this list.

**System Action:** FAC execution ends.

**User Response:** Correct the INCLUDE\_CC0 parameter and reexecute FAC.

#### **MFM178E INSUFFICIENT VIRTUAL STORAGE FOR INCLUDE\_CC0 LIST**

**Severity:** Error

**Explanation:** There is insufficient virtual storage to hold the entire list of job names that you have specified for inclusion when their completion code is 0.

**System Action:** FAC execution ends.

**User Response:** Increase the values specified in the REGION= parameter on the JOB and EXEC statements for FAC and reexecute FAC.

#### **MFM179E EXCLUDE\_CC0 PARAMETER INVALID**

**Severity:** Error

**Explanation:** The EXCLUDE\_CC0 parameter must specify a list of 1- to 8-character job names (which can include wild card characters) representing jobs that are not to be captured and reported when the completion code of the job is zero. When this parameter is specified, only jobs that are not in this list are included. All others are included. There can be a maximum of 255 jobnames in this list.

**System Action:** FAC execution ends.

**User Response:** Correct the EXCLUDE\_CC0 parameter and reexecute FAC.

#### **MFM180E INSUFFICIENT VIRTUAL STORAGE FOR EXCLUDE\_CC0 LIST**

**Severity:** Error

**Explanation:** There is insufficient virtual storage to hold the entire list of job names that you have specified for exclusion when their completion code is 0.

**System Action:** FAC execution ends.

**User Response:** Increase the values specified in the REGION= parameter on the JOB and EXEC statements for FAC and reexecute FAC.

#### **MFM181E INCLUDE\_CCN0 PARAMETER INVALID**

**Severity:** Error

**Explanation:** The INCLUDE\_CCN0 parameter must specify a list of 1- to 8-character job names (which can include wild card characters) representing jobs that are to be captured and reported when the completion code of the job is not zero. When this parameter is specified, only jobs that meet the criteria in this list are included. All others are excluded. There can be a maximum of 255 jobnames in this list.

**System Action:** FAC execution ends.

**User Response:** Correct the INCLUDE\_CCN0 parameter and reexecute FAC.

#### **MFM182E INSUFFICIENT VIRTUAL STORAGE FOR INCLUDE\_CCN0 LIST**

**Severity:** Error

**Explanation:** There is insufficient virtual storage to hold the entire list of job names that you have specified for inclusion when their completion code is not 0.

**System Action:** FAC execution ends.

**User Response:** Increase the values specified in the REGION= parameter on the JOB and EXEC statements for FAC and reexecute FAC.

#### **MF183E EXCLUDE\_CCNO PARAMETER INVALID**

**Severity:** Error

**Explanation:** The EXCLUDE\_CCNO parameter must specify a list of 1- to 8-character job names (which can include wild card characters) representing jobs that are not to be captured and reported when the completion code of the job is not 0. When this parameter is specified, only jobs that are not in this list are included. All others are included. There can be a maximum of 255 jobnames in this list.

**System Action:** FAC execution ends.

**User Response:** Correct the EXCLUDE\_CCNO parameter and reexecute FAC.

#### **MF184E INSUFFICIENT VIRTUAL STORAGE FOR EXCLUDE\_CCNO LIST**

**Severity:** Error

**Explanation:** There is insufficient virtual storage to hold the entire list of job names that you have specified for exclusion when their completion code is not 0.

**System Action:** FAC execution ends.

**User Response:** Increase the values specified in the REGION= parameter on the JOB and EXEC statements for FAC and reexecute FAC.

#### **MF185E PROTECT PARAMETER INVALID**

**Severity:** Error

**Explanation:** The PROTECT parameter must specify PROTECT(YES) if pages in extended common storage are to be protected from inadvertent alteration by other programs running in the LPAR or PROTECT(NO) if this protection is not to occur. If this parameter is omitted then no protection will exist. Any program running in key 0 can alter this storage.

**System Action:** FAC execution ends.

**User Response:** Correct the PROTECT parameter and reexecute FAC.

#### **MF186E CAPTURE\_ABENDS PARAMETER INVALID**

**Severity:** Error

**Explanation:** The CAPTURE\_ABENDS parameter must specify CAPTURE\_ABENDS(YES) if programs that abend and that are not processed by Abend-AID are to be captured and events sent to the FAS. Specify CAPTURE\_ABENDS(NO) if these abends are not to be processed. Note that if you do not want the SMF Accounting Routine exit to be activated that you must specify JOB\_TIMINGS(NO) as specifying NO to both return code processing parameters and you must specify CAPTURE\_ABENDS(NO).

**System Action:** FAC execution ends.

**User Response:** Correct the CAPTURE\_ABENDS parameter and reexecute FAC.

#### **MF187E DEFAULT PARAMETER MISSING**

**Severity:** Error

**Explanation:** The DEFAULT parameter is required as either DEFAULT(YES) or DEFAULT(NO). Only one FAC subsystem in the LPAR can specify DEFAULT(YES). All others must specify DEFAULT(NO).

**System Action:** FAC execution ends.

**User Response:** Add the DEFAULT parameter and reexecute FAC.

#### **MF188E PACING PARAMETER INVALID**

**Severity:** Error

**Explanation:** The PACING parameter must specify a 1- to 8-digit number representing the maximum number of requests that FAC will send to the FAS without an intervening reply from the FAS. This value can range from 0 to 9999. If 0 is specified then no pacing occurs and any number of requests can be outstanding.



**System Action:** FAC execution ends.

**User Response:** Correct the PACING parameter and reexecute FAC.

#### **MFM189E OPERATING\_SYSTEM PARAMETER INVALID**

**Severity:** Error

**Explanation:** The OPERATING\_SYSTEM parameter should never be specified at a customer parameter. Its use is only for emulating releases of z/OS earlier than the current one.

**System Action:** FAC ends.

**User Response:** Remove this parameter from the SYSIN data set.

#### **MFM190E SEC\_FMS\_ADDR AND SEC\_FMS\_NAME CANNOT BOTH BE SPECIFIED**

**Severity:** Error

**Explanation:** You have specified both the TCP/IP address, in dotted decimal notation, and the name known to your domain name server for the primary FAS. Only one of these parameters may be specified.

**System Action:** FAC execution ends.

**User Response:** Remove either the SEC\_FMS\_NAME or the SEC\_FMS\_ADDR and reexecute FAC.

#### **MFM191E SEC\_FMS\_PORT PARAMETER MISSING**

**Severity:** Error

**Explanation:** The TCP/IP port number on which the FAS that you have designated as "secondary" must be specified. This number specifies the port number on which the FAS is "listening" and through which connectivity with this FAS will occur. The PORT number you specify here must match the PORT number specified to the "secondary" instance of the FAS.

**System Action:** FAC execution ends.

**User Response:** Add the SEC\_FMS\_PORT parameter and reexecute FAC.

#### **MFM192E QUEUE\_WRAP PARAMETER INVALID**

**Severity:** Error

**Explanation:** If specified, the QUEUE\_WRAP parameter must specify either "YES", indicating that if events must be discarded then the oldest ones should be discarded first, or "NO", indicating that the newest events should be discarded. Events are only discarded when the disk queue becomes completely full due to a communications failure or a failure of the FAS to accept messages from this FAC.

**System Action:** FAC execution ends.

**User Response:** Correct the QUEUE\_WRAP parameter and reexecute FAC.

#### **MFM193E QUEUE DATA SET ALREADY IN USE**

**Severity:** Error

**Explanation:** You have specified a data set name for the QUEUE data set but that name is already in use by another copy of FAC. Each queue data set can be used by one and one only FAC. There can be no sharing of this data set. Compuware recommends that this data set name contain both the FAC subsystem ID and a name that is unique throughout your enterprise.

**System Action:** FAC execution ends.

**User Response:** Change the data set name of the queue data set and reexecute FAC.

#### **MFM194E zIIP\_ENABLE PARAMETER INVALID**

**Severity:** Error

**Explanation:** The zIIP\_ENABLE parameter can specify YES or NO. If zIIP\_ENABLE(YES) is specified, then the SRB under which all XML creation and TCP/IP SOCKET(SEND) routines run will be zIIP enabled. If you specify NO to zIIP\_ENABLE this SRB will not run on your zIIP.

**System Action:** FAC execution ends.

**User Response:** Correct the zIIP\_ENABLE parameter and resubmit FAC.

**MF195E SUBSYSTEM ID OF "AAF1" CANNOT BE USED**

**Severity:** Error

**Explanation:** The SUBSYSTEM ID "AAF1" is reserved for use only by Compuware Fault Analytics release 04.xx. Starting with release 11.02 of Fault Analytics, the subsystem name is selectable by the customer but cannot duplicate the older hard-coded name.

**System Action:** FAC execution ends.

**User Response:** Choose a different 4-character name for your subsystem and resubmit FAC.

**MF200I FAS DNS NAME IS @@**

**Severity:** Informational

**Explanation:** This informational message shows the network known name of the FAS.

**System Action:** Processing continues.

**User Response:** None.

**MF201I FAS IP ADDR IS @@**

**Severity:** Informational

**Explanation:** This informational message shows the TCP/IP address of the FAS. This address was supplied by the user or obtained from the name via GETADDRINFO

**System Action:** Processing continues.

**User Response:** None.

**MF202I FAC LINKED TO TCP/IP @@ ON HOST @@**

**Severity:** Informational

**Explanation:** This informational message indicates that the INITAPI macro was successfully executed to initiate TCP/IP communications.

**System Action:** Processing continues.

**User Response:** None.

**MF203E TCP/IP @@ FAILED WITH @@ FAS. RV/RC/RSN = @@/@@/@@**

**Severity:** Error

**Explanation:** This error message indicates that the TCP/IP function named has failed. The TCP/IP return value, return code and reason code are shown. In addition, whether this function was made using the primary or the secondary FAS is shown.

**System Action:** FAC processing continues and an attempt is made to reestablish connectivity with either the primary or secondary FAS.

**User Response:** Identify the reason for the TCP/IP failure. If the attempt to reestablish communication failed, refer this problem to you communications support staff.

**MF204E UNABLE TO OBTAIN IP ADDRESS FOR FAS NAMED @@**

**Severity:** Error

**Explanation:** This informational message indicates that the TCP/IP function named GETHOSTBYNAME has failed. No IP address was returned as a result of this function.

**System Action:** FAC attempts to use the secondary FAS for processing. If this is not successful, execution continues without the support of the FAS.

**User Response:** Identify the reason for the TCP/IP failure. When corrected, issue the "START FAS COMMUNICATION" command.

**MF205E @@ TCP/IP IS NOT ACTIVE ON THIS SYSTEM**

**Severity:** Error

**Explanation:** This error message indicates that FAC is not able to determine the name of the active TCP/IP. FAC has issued the GETIBMOPT macro and has found that there is no TCP/IP region active on this system.

**System Action:** Processing will continue but without connectivity to either the primary or secondary FAS. FAC will continue to try to obtain the name of the TCP/IP region on this LPAR and will attempt to communicate with the FAS.

**User Response:** Ensure that the TCP/IP address space is active. If it is not, then it must be started immediately. If active, then specify its name in the FAC //SYSIN parms in the TCPIP\_NAME operand and reexecute FAC.

#### **MFM206E DNS CANNOT RESOLVE NAME @@ TO AN IP ADDRESS**

**Severity:** Error

**Explanation:** This error message indicates that a call to TCP/IP to convert the name you specified for PRI\_FMS\_NAME or SEC\_FMS\_NAME to an IP address has failed. The TCP/IP call is GetHostByName and it invokes the default domain name server (DNS) on your host to perform this conversion. Either the DNS is not available or the name you specified in the FAC parameters is not contained in it.

**System Action:** Processing will continue but without connectivity to either the primary or secondary FAS. FAC will continue to try to obtain the name of the TCP/IP region on this LPAR and will attempt to communicate with the FAS.

**User Response:** Ensure that the DSN has these names specified so that it is able to convert them to an IP addresses. Or you can manually specify the IP addresses in the FAC parameters via the PRI\_FMS\_ADDR and SEC\_FMS\_ADDR operands. You may have to stop and restart FAC.

#### **MFM207I CONNECTION WITH FAS @@(@@) STARTED**

**Severity:** Informational

**Explanation:** This informational message indicates that a TCP/IP connection between this FAC and the FAS named in the message has been established.

**System Action:** Processing continues.

**User Response:** None.

#### **MFM208I AFFINITY WITH TCP/IP STACK @@ CANNOT BE ASSIGNED**

**Severity:** Informational

**Explanation:** This informational message indicates that a an attempt to assign affinity between the FAC and the TCP/IP stack named in the message has failed.

**System Action:** Processing ends.

**User Response:** Insure that you have specified a valid TCPIP\_NAME in the SYSIN parameters, and that the stack that you have named is active on this LPAR. Omit TCPIP\_NAME in order to use the default TCP/IP stack.

#### **MFM209I CONNECTION WITH FAS @@(@@) ENDED**

**Severity:** Informational

**Explanation:** This informational message indicates that a TCP/IP connection between this FAC and the FAS has ended and the socket has been closed.

**System Action:** Processing continues. If FAC shutdown pending, it will occur normally. If shutdown is not pending, an attempt will be made to start communication with the alternate FAS (if available), or with this FAS if no alternate specified.

**User Response:** None.

#### **MFM210I FAC NO LONGER LINKED TO TCP/IP**

**Severity:** Informational

**Explanation:** This informational message indicates that the TERMAPI macro was successfully executed to terminate TCP/IP communications.

**System Action:** Processing continues.

**User Response:** None.

#### **MFM211I COMMUNICATION WITH FAS @@(@@) ACTIVE**

**Severity:** Informational

**Explanation:** This informational message indicates that a valid startup message exchange between this FAC and the FAS named in this message has occurred.

**System Action:** Processing continues.

**User Response:** None.

**MFM212I UNABLE TO OBTAIN THE TCP/IP NAME OF THIS HOST @@/@@**

**Severity:** Informational

**Explanation:** A non-zero return value occurred when executing the GETHOSTNAME USS callable service. The return and reason codes are displayed in this message

**System Action:** Processing ends.

**User Response:** Insure that a valid TCP/IP region is active on this LPAR.

**MFM213I COMMUNICATION WITH FAS @@(##) IS INACTIVE**

**Severity:** Informational

**Explanation:** This informational message indicates that a valid shutdown message exchange between this FAC and the FAS named in this message has occurred.

**System Action:** Processing continues and, if communication with the FAS ceases, attempts to restart it will occur.

**User Response:** None.

**MFM214I UNABLE TO OBTAIN THE TCP/IP ADDR OF THIS HOST @@/@@**

**Severity:** Informational

**Explanation:** A non-zero return value occurred when executing the GETHOSTID USS callable service. The return and reason codes are displayed in this message

**System Action:** Processing ends.

**User Response:** Insure that a valid TCP/IP region is active on this LPAR.

**MFM215I TERMINATION STARTED FOR FAC @@**

**Severity:** Informational

**Explanation:** This informational message indicates that termination processing has started for this FAC.

**System Action:** Termination processing continues.

**User Response:** None.

**MFM216I TERMINATION COMPLETE FOR FAC @@**

**Severity:** Informational

**Explanation:** This informational message indicates that termination processing is complete for this FAC.

**System Action:** FAC terminates.

**User Response:** None.

**MFM217I LONG TERM STORAGE STATISTICS FOLLOW**

**Severity:** Informational

**Explanation:** This informational message is followed by messages that show the number of bytes of storage allocated in each of the designated areas. These numbers may only be approximate as dynamic storage areas are not included in them.

**System Action:** Processing continues.

**User Response:** None.

**MFM218I PAGEABLE PRIVATE STORAGE @@**

**Severity:** Informational

**Explanation:** The number of bytes of private FAC storage that is allocated long term is shown in this message. This number may only be approximate as dynamic storage areas are not included. Storage allocated both below and above the 16M line are included in this number.

**System Action:** Processing continues.

**User Response:** None.

**MFM219I PAGEABLE COMMON STORAGE - CSA: @@ ECSA: @@**

**Severity:** Informational

**Explanation:** The number of bytes of subpool 241 (pageable common) storage that has been allocated for the duration of FAC execution.

**System Action:** Processing continues.

**User Response:** None.

**MFM220I FIXED COMMON STORAGE - SQA: @@ ESQA: @@**

**Severity:** Informational

**Explanation:** The number of bytes of subpool 245 (fixed common) storage that has been allocated for the duration of FAC execution.

**System Action:** Processing continues.

**User Response:** None.

**MFM221I NUMBER SP 241 PAGES PROTECTED: @@**

**Severity:** Informational

**Explanation:** The number of pages in subpool 241 that have had the PGSER PROTECT macro issued against them. This message displays only if you have specified PROTECT(YES) in the SYSIN parameter data set.

**System Action:** Processing continues.

**User Response:** None.

**MFM222E @@ WAS NOT FOUND IN A LINK LIST DATA SET**

**Severity:** Error

**Explanation:** MFMVERIFY - The module named in this message must reside in a Link List data set and it does not. Please see the FAC Installation Guide for instructions concerning module residency.

**System Action:** MFMVERIFY processing continues but ends with a return code of 12. MFMINIT processing continues.

**User Response:** Copy the named module to a Link List data set and remember to refresh LLA. Re-run the verification program.

**MFM223I @@ WAS FOUND IN LINK LIST DATA SET:**

**Severity:** Informational

**Explanation:** MFMVERIFY - The module named in this message resides in a Link List data set as it must. This message is informational only and does not constitute an error. Information concerning the Link List data set follows.

**System Action:** Processing continues.

**User Response:** None.

**MFM224I VOL=@@ DSN=@@**

**Severity:** Informational

**Explanation:** MFMVERIFY - The volume serial and the data set name of the Link List data set where the current module resides is shown in this message. This message is informational only and does not constitute an error. More information concerning the Link List data set follows.

**System Action:** Processing continues.

**User Response:** None.

**MFM225I CORRECTLY BOUND AS REENTRANT**

**Severity:** Informational

**Explanation:** MFMVERIFY - The current module has been correctly bound into the named data set with the RENT option. This message is informational only and does not constitute an error.

**System Action:** Processing continues.

**User Response:** None.

**MFM226E INCORRECTLY BOUND - NOT REENTRANT**

**Severity:** Error

**Explanation:** MFMVERIFY - The current module has been incorrectly bound into the named data set. It does not carry the RENT option and for correct execution it must.

**System Action:** Processing continues.

**User Response:** If this is the module you expect to use for the Event Publisher, then you must contact Compuware Technical Support and report this error to them. If this is not the correct module (e.g. not at the correct version) then fix that problem first and re-run mfmverify. This message should be replaced with MFM225 indicating a correct binding of the module.

**MFM227I AND IS AT VERSION @@**

**Severity:** Informational

**Explanation:** MFMVERIFY - The version (VVRMM) number of the current module is displayed.

**System Action:** Processing continues.

**User Response:** None.

**MFM228E BUT CANNOT BE LOADED. RC=@@**

**Severity:** Error

**Explanation:** MFMVERIFY - An attempt to load the current module has failed with the return code shown in the message.

**System Action:** MFMVERIFY processing continues but ends with a return code of 12. MFMINIT processing continues.

**User Response:** Copy the named module to a Link List data set and remember to refresh LLA. Re-run the verification program.

**MFM229I BUT VERSION CANNOT BE DETERMINED**

**Severity:** Informational

**Explanation:** MFMVERIFY - The module named in this message was loaded but does not contain the proper eye-catcher data needed for MFMVERIFY to determine the version level of the module.

**System Action:** MFMVERIFY processing continues but ends with a return code of 12. MFMINIT processing continues.

**User Response:** Report this problem to Compuware Technical Support representatives. Try copying the module again from the current SMP/E load library into the Link List data set.

**MFM230E BUT @@ IS THE WRONG MODULE VERSION**

**Severity:** Error

**Explanation:** MFMVERIFY - The module named in this message was loaded but is not a version that can process FAC events. The lowest version is 11.02.00 and this module is not that version level or higher. You may have copied the correct version of the module into a Link List data set that is later in the concatenation and this older version is still being found when a LOAD is issued.

**System Action:** MFMVERIFY processing continues but ends with a return code of 12. MFMINIT processing continues.

**User Response:** Copy the named module to a Link List data set and remember to refresh LLA. Re-run the verification program. Be sure to copy the newest version of this module sent to you from Compuware. And be sure to delete any older versions from your Link List data sets.

**MFM231E LOCAL TCP/IP NAME @@ IS INCORRECT OR NOT ACTIVE**

**Severity:** Error

**Explanation:** You have specified a particular TCP/IP region name in the FAC SYSIN parameter data set but the name you supplied is either wrong or is not active at this time.

**System Action:** FAC terminates.

**User Response:** You may either specify a correct name, or omit this parameter entirely. If you omit the parameter, then FAC will automatically determine the TCP/IP name for you.

#### **MFM232E INCLUDE\_ABEND AND EXCLUDE\_ABEND CANNOT BOTH BE SPECIFIED**

**Severity:** Error

**Explanation:** These two parameters are mutually exclusive. You may specify one or the other but not both.

**System Action:** FAC execution ends.

**User Response:** Remove one or the other of these two parameters and reexecute FAC.

#### **MFM233E INCLUDE\_ABEND PARAMETER INVALID**

**Severity:** Error

**Explanation:** The INCLUDE\_ABEND parameter must specify a list of 1- to 8-character job names (which can include wild card characters) representing jobs that are to be captured and reported when the job ends with an abend which was not processed by Compuware's Abend-AID. When this parameter is specified, only jobs that meet the criteria in this list are included. All others are excluded. There can be a maximum of 255 jobnames in this list.

**System Action:** FAC execution ends.

**User Response:** Correct the INCLUDE\_ABEND parameter and reexecute FAC.

#### **MFM234E INSUFFICIENT VIRTUAL STORAGE FOR INCLUDE\_ABEND LIST**

**Severity:** Error

**Explanation:** There is insufficient virtual storage to hold the entire list of job names that you have specified for inclusion when they complete with an abend which was not processed by Compuware's Abend-AID program.

**System Action:** FAC execution ends.

**User Response:** Increase the values specified in the REGION= parameter on the JOB and EXEC statements for FAC and reexecute FAC.

#### **MFM235E EXCLUDE\_ABEND PARAMETER INVALID**

**Severity:** Error

**Explanation:** The EXCLUDE\_ABEND parameter must specify a list of 1- to 8-character job names (which can include wild card characters) representing jobs that are to be captured and reported when the job ends with an abend which was not processed by Compuware's Abend-AID. When this parameter is specified, only jobs that meet the criteria in this list are included. All others are excluded. There can be a maximum of 255 jobnames in this list.

**System Action:** FAC execution ends.

**User Response:** Correct the EXCLUDE\_ABEND parameter and reexecute FAC.

#### **MFM236E INSUFFICIENT VIRTUAL STORAGE FOR EXCLUDE\_ABEND LIST**

**Severity:** Error

**Explanation:** There is insufficient virtual storage to hold the entire list of job names that you have specified for exclusion when they complete with an abend which was not processed by Compuware's Abend-AID program.

**System Action:** FAC execution ends.

**User Response:** Increase the values specified in the REGION= parameter on the JOB and EXEC statements for FAC and reexecute FAC.

#### **MFM237E INCLUDE\_JCLERR AND EXCLUDE\_JCLERR CANNOT BOTH BE SPECIFIED**

**Severity:** Error

**Explanation:** These two parameters are mutually exclusive. You may specify one or the other but not both.

**System Action:** FAC execution ends.

**User Response:** Remove one or the other of these two parameters and reexecute FAC.

#### **MFM238E INCLUDE\_JCLERR PARAMETER INVALID**

**Severity:** Error

**Explanation:** The INCLUDE\_JCLERR parameter must specify a list of 1- to 8-character job names (which can include wild card characters) representing jobs that are to be captured and reported when the job ends with a JCL error. When this parameter is specified, only jobs that meet the criteria in this list are included. All others are excluded. There can be a maximum of 255 jobnames in this list.

**System Action:** FAC execution ends.

**User Response:** Correct the INCLUDE\_JCLERR parameter and reexecute FAC.

#### **MFM239E INSUFFICIENT VIRTUAL STORAGE FOR INCLUDE\_JCLERR LIST**

**Severity:** Error

**Explanation:** There is insufficient virtual storage to hold the entire list of job names that you have specified for inclusion when they complete with a JCL error.

**System Action:** FAC execution ends.

**User Response:** Increase the values specified in the REGION= parameter on the JOB and EXEC statements for FAC and reexecute FAC.

#### **MFM240E EXCLUDE\_JCLERR PARAMETER INVALID**

**Severity:** Error

**Explanation:** The EXCLUDE\_JCLERR parameter must specify a list of 1- to 8-character job names (which can include wild card characters) representing jobs that are to be captured and reported when the job ends with a JCL error. When this parameter is specified, only jobs that meet the criteria in this list are included. All others are excluded. There can be a maximum of 255 jobnames in this list.

**System Action:** FAC execution ends.

**User Response:** Correct the EXCLUDE\_JCLERR parameter and reexecute FAC.

#### **MFM241E INSUFFICIENT VIRTUAL STORAGE FOR EXCLUDE\_JCLERR LIST**

**Severity:** Error

**Explanation:** There is insufficient virtual storage to hold the entire list of job names that you have specified for exclusion when they complete with a JCL error.

**System Action:** FAC execution ends.

**User Response:** Increase the values specified in the REGION= parameter on the JOB and EXEC statements for FAC and reexecute FAC.

#### **MFM300E CSV @@ - INVALID FLD NAME:@@**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that an invalid field name has been found.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.

#### **MFM301E CSV @@ - MISSING NULL/SIZE EXCEEDED**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that no null character was found within the first 2084 bytes of the CSV data. A null is a X"00" and 2048 is the maximum length allowed for a CSV record.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.



**MFM302E CSV @@ - BAD REC ADDRESS PASSED**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that the data area address passed to Fault Analytics is not valid. That is, it is likely in a storage key that the caller is not allowed to read or write.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.

**MFM303E CSV @@ - ERROR SEARCHING FOR NULL**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that no null character was found within the first 2084 bytes of the CSV data. A null is a X"00" and 2048 is the maximum length allowed for a CSV record.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.

**MFM304E CSV @@ - ERRORCODE1 REFMSTED:@@**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that the error code 1 field contained an abend code that is a mainframe system, user, or CICS abend code. This code must be unique and must duplicate any code that could have generated an event of its own.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.

**MFM305E CSV @@ - DUPLICATE FIELD NAME:@@**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that there are two field names that are the same in one CSV record. Only one instance of each name is allowed.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.

**MFM306E CSV @@ - MISSING REQ FLD:@@**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that a required field (shown in the message) is not present in this CSV record.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.

**MFM307E CSV @@ - DATA LEN ERR:@@**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that a data field is either longer than 255 bytes or is longer than its definition indicates that it can be.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.

**MFM308E CSV @@ - INVALID NAME FIELD:@@**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that the name part of the field exceeds 24 bytes.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.

**MFM309E CSV @@ - INVALID DATE:@@**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that the ERROROCCURREDATDATE is not a valid date. Dates must be in the form MM/DD/YYYY.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.

**MFM310E CSV @@ - INVALID TIME:@@**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that the ERROROCCURREDATTIME is not a valid time. Times must be in the form HH:MM:SS.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.

**MFM311E CSV @@ - INVALID EVENT NAME:@@**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that the Event Name used in the CSV record is reserved for Compuware generated events only.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.

**MFM312E CSV @@ - INVALID DATA FLD FOR NAME:@@**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that the data field for the name shown in this message contains non-character data. The data field itself is not displayed as it might cause display errors.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.

**MFM313E CSV @@ - DATA ALL SPACES FLD:@@**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that the data field for the name shown in this message contains non-character data. The data field itself is not displayed as it might cause display errors.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Notify the programmer of this error.

**MF314E CSV @@ - STORAGE NOT AVAILABLE FOR CSV RECORD**

**Severity:** Error

**Explanation:** A STORAGE OBTAIN macro has failed, indicating that the private region when your job that publishes the CSV User Record is exhausted.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Increase the value on the REGION= parameter of the EXEC statement that invokes the program that creates and sends the CSV record to Fault Analytics. Re-run this job.

**MF315E CSV @@ - INVALID UTC OFFSET @@**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid have detected an error in the CSV data. This error states that the UTCOffset field is not valid. This field must be exactly 5 bytes long, starting with a plus "+" sign or a minus "-" sign followed by 4 bytes that are the number of minutes west (when there is a minus sign) or east (when there is a plus sign) of Greenwich, England.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Correct the UTCOFSET value in the CSV record and re-run the job which publishes it.

**MF316E CSV @@ - INVALID JOBESID @@**

**Severity:** Error

**Explanation:** Validation routines invoked to ensure that each CSV record passed by user programs is valid has detected an error in the CSV data. This error states that the JOBESID value is invalid. This field must be exactly 8 bytes long, starting with a "J", "S" or "T" and ending with a seven-digit number.

**System Action:** If logging is active, the event is logged. This message is written to the user's JOBLOG and the event is discarded.

**User Response:** Correct the JOBESID value in the CSV record and re-run the job that publishes it.

**MF400E PARM= LENGTH IS NOT FOUR BYTES**

**Severity:** Error

**Explanation:** This message is displayed only by the MFMDELET emergency termination program that you have elected to run to remove an FAC from your system. This program requires a four-byte long subsystem ID of the FAC you want to terminate.

**System Action:** MFMDELET abends with a U100 abend.

**User Response:** Correct the PARM= to specify a 4-character subsystem ID and re-run MFMDELET.

**MF401E SUBSYSTEM @@ NOT FOUND ON SSCT CHAIN**

**Severity:** Error

**Explanation:** This message is displayed only by the MFMDELET emergency termination program that you have elected to run to remove an FAC from your system. This message indicates that the value you have specified on the PARM= of the EXEC statement for MFMDELET is not a subsystem name.

**System Action:** MFMDELET abends with a U101 abend.

**User Response:** Correct the PARM= to specify a 4-character subsystem ID and re-run MFMDELET.

**MF402I ATTEMPTING TERMINATION OF JOB @@**

**Severity:** Informational

**Explanation:** This message is displayed only by the MFMDELET emergency termination program that you have elected to run to remove an FAC from your system. This message indicates that it is about to issue the z/OS CALLRTM macro specifying the job that is named in this message.

**System Action:** Processing continues, but a S70D abend may occur.

**User Response:** If the program abends, record the reason code shown on the system console and notify Compuware support personnel.

**MF4031 CALLRTM FOR JOB @@ RC=@@**

**Severity:** Informational

**Explanation:** This message is displayed only by the MFMDELET emergency termination program that you have elected to run to remove an FAC from your system. This message reports the return code resulting from the CALLRTM macro execution for the job named in the message.

**System Action:** Processing continues.

**User Response:** If the return code is 00, termination of the address space has been successful. A return code of 18 indicates that the ASID for the FAC you are trying to terminate does not represent an active address space. This implies that FAC is already inactive. If the return code is 2C it indicates that the termination has been deferred and will occur at a later time.

**MF5001 START OF LICENSE MANAGEMENT INFORMATION**

**Severity:** Informational

**Explanation:** This message is displayed at startup containing data from the LMS information area returned by the license checkout routines. This message is for informational purposes only and does not affect the execution of the FAC.

**System Action:** Processing continues.

**User Response:** None.

**MF5011 END OF LICENSE MANAGEMENT INFORMATION**

**Severity:** Informational

**Explanation:** This message is displayed at startup indicating that all LMS information data has been printed.

**System Action:** Processing continues.

**User Response:** None.

**MF5021 LMS SUBSYS=@@ VER=@@ FROM DSN=@@**

**Severity:** Informational

**Explanation:** This message identifies the LMS subsystem, its version and the license file from which the information used to license the Fault Management came.

**System Action:** Processing continues.

**User Response:** None.

**MF5031 LMS CUSTOMER NUMBER=@@ NAME=@@**

**Severity:** Informational

**Explanation:** This message identifies the Customer number and name contained on the license file previously identified.

**System Action:** Processing continues.

**User Response:** None.

**MF5041 LMS SITE NUMBER=@@ NAME=@@**

**Severity:** Informational

**Explanation:** This message identifies the Site number and name used to validate the product for execution on this LPAR.

**System Action:** Processing continues.

**User Response:** None.

**MF5051 LMS CERTIFICATE NUMBER=@@**

**Severity:** Informational

**Explanation:** This message identifies the Certificate number used to validate the product for execution on this LPAR.

**System Action:** Processing continues.

**User Response:** None.

**MF506I LMS IN DISASTER MODE FROM @@ UNTIL @@**

**Severity:** Informational

**Explanation:** This message indicates that the product is running in disaster mode for the dates indicated.

**System Action:** Processing continues.

**User Response:** None.

**MF507I LMS IN EMERGENCY MODE FROM @@ UNTIL @@**

**Severity:** Informational

**Explanation:** This message indicates that the product is running in emergency mode for the dates indicated.

**System Action:** Processing continues.

**User Response:** None.

**MF508I LMS PRODUCT NAME=@@ VERSION=@@**

**Severity:** Informational

**Explanation:** This message indicates the product short and version used to determine whether the product is licensed on this LPAR.

**System Action:** Processing continues.

**User Response:** None.

**MF509I LMS PRODUCT LONG NAME=@@**

**Severity:** Informational

**Explanation:** This message indicates the product long name used to determine whether the product is licensed on this LPAR.

**System Action:** Processing continues.

**User Response:** None.

**MF510I LMS PRODUCT STATUS=@@ FROM @@ TO @@**

**Severity:** Informational

**Explanation:** This message indicates the status of the Fault Analytics product. If the status is LONG\_TERM, the end date is not applicable and can be ignored.

**System Action:** Processing continues.

**User Response:** None.

**MF511I LMS SPECIAL ACCESS=@@ FROM @@ TO @@**

**Severity:** Informational

**Explanation:** This message indicates that there is special access active for this product from the dates shown.

**System Action:** Processing continues.

**User Response:** None.

**MF512I LMS THIS LICENSE WILL EXPIRE IN @@ DAYS**

**Severity:** Informational

**Explanation:** This message indicates the number of days until the product can no longer run on this LPAR.

**System Action:** Processing continues.

**User Response:** None.

**MF513I LMS CPU ID=@@**

**Severity:** Informational

**Explanation:** This message indicates the CPU identification on which the product is currently executing.

**System Action:** Processing continues.

**User Response:** None.

**MFM514I LMS LPAR NAME=@@ TYPE=@@ MSUS=@@**

**Severity:** Informational

**Explanation:** This message is written to SYSPRINT only if there is an LPAR record for this product on the license file. The name and type of the LPAR is shown.

**System Action:** Processing continues.

**User Response:** None.

**MFM515I LMS LPAR STATUS=@@ FROM @@ TO @@**

**Severity:** Informational

**Explanation:** This message indicates the status of the product on the current LPAR. This message is only written if the status and/or dates differ from those on the product or CPU records.

**System Action:** Processing continues.

**User Response:** None.

**MFM901E ABEND-AID FAULT ANALYTICS NOT AVAILABLE**

**Severity:** Error

**Explanation:** This message is written to the joblog of a job that has either abended or for another reason has caused a message to be published to the Compuware Fault Analytics. Fault Analytics is not active at this time.

**System Action:** The published event is discarded and processing continues.

**User Response:** Start Compuware Fault Analytics and rerun this job.

**MFM902E RETCD=@@ RSNCD=@@**

**Severity:** Error

**Explanation:** This message is written to the joblog of a job that has either abended or for another reason has caused a message to be published to the Compuware Fault Analytics. This message follows another MFM9xx message and gives the return and reason codes describing this error.

**System Action:** The published event is discarded and processing continues.

**User Response:** Examine the previous message. If Fault Analytics is not active, then start it and rerun this job. Else refer this problem to your systems programmer.

**MFM903E UNABLE TO OBTAIN FAC ENQUE. QNAME=@@**

**Severity:** Error

**Explanation:** This message is written to the joblog of a job that has either abended or for another reason has caused a message to be published to Compuware Fault Analytics. This message indicates that another job is holding the ENQ whose QNAME is shown in this message. This job is attempting to obtain this QNAME/RNAME as a shared resource. Hence another job is holding it on an exclusive basis.

**System Action:** The published event is discarded and processing continues.

**User Response:** Use your system resources to determine which job is holding this QNAME/RNAME as an exclusive ENQ. No job should ever hold this resource exclusively.

**MFM904E RNAME=@@**

**Severity:** Error

**Explanation:** This message is written to the joblog of a job that has either abended or for another reason has caused a message to be published to Compuware Fault Analytics. This message displays the RNAME of the QNAME/RNAME combination named in the previous message.

**System Action:** The published event is discarded and processing continues.

**User Response:** Use your system resources to determine which job is holding this QNAME/RNAME as an exclusive ENQ. No job should ever hold this resource exclusively.

**MFM923C Compuware PARMLIB service error, RC=@@ RSN=@@**

**Severity:** Critical

**Explanation:** An error occurred attempting to obtain parameters using the Compuware Common PARMLIB service.

**System Action:** The Collector abends with a user 1923 (decimal) abend.

**User Response:** See message MFM923 for return code and reason code.

**MFM924I User specified PARMLIB parameter, SUFFIX=@@**

**Severity:** Informational

**Explanation:** The SUFFIX is the only user specified value when using the Compuware Common PARMLIB service.

**System Action:** The Collector abends with a user 1923 (decimal) abend.

**User Response:** See message MFM923 for return code and reason code.

**MFM925I Parameters came from DSN=@@**

**Severity:** Informational

**Explanation:** This is the dataset name the parameters came from. It is specified in the CMSC JCL.

**System Action:** Processing continues.

**User Response:** N/A.

**MFM926I Parameters came from member=@@**

**Severity:** Informational

**Explanation:** This is the member name the parameters came from. It is specified in the CMSC JCL.

**System Action:** Processing continues.

**User Response:** N/A.

**MFM927C The parameter file record format must be FIXED**

**Severity:** Critical

**Explanation:** An error occurred attempting to obtain parameters using the Compuware Common PARMLIB service.

**System Action:** The Collector abends with a user 1923 (decimal) abend.

**User Response:** Correctly format the parameter file PDS.

**MFM928C The parameter file record length must be 80**

**Severity:** Critical

**Explanation:** An error occurred attempting to obtain parameters using the Compuware Common PARMLIB service.

**System Action:** The Collector abends with a user 1923 (decimal) abend.

**User Response:** Correctly format the parameter file PDS.

**Figure 6.** Sample Copy JCL for Fault Analytics Collector Log

```
//*  
//*      Place a valid JOB statement here  
/*  
//DELETE EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=*  
//SYSIN DD *  
        DELETE *** sequential data set name *** NONVSAM  
        SET MAXCC=0  
/*  
//REPRO EXEC PGM=IDCAMS  
//LOGIN DD DSN=*** VSAM Log Data Set Name ***,DISP=OLD  
//LOGOUT DD DSN=&&SEQ,DISP=(,PASS),UNIT=SYSDA,  
//        SPACE=(CYL,(100,100),RLSE),VOL=SER=??????,  
//        DCB=(RECFM=VB,LRECL=32756,BLKSIZE=32760,DSORG=PS)  
//SYSPRINT DD SYSOUT=*  
//SYSIN DD *  
        REPRO INFILE(LOGIN) OUTFILE(LOGOUT)  
/*  
//TERSE EXEC PGM=AMATERSE,PARM=PACK  
//SYSPRINT DD SYSOUT=*  
//SYSUT1 DD DSN=&&SEQ,DISP=(OLD,DELETE,DELETE)  
//SYSUT2 DD DSN=*** sequential data set name ***,DISP=(,CATLG),  
//        VOL=SER=??????,UNIT=SYSDA,  
//        SPACE=(CYL,(100,100),RLSE)
```



# User-Defined Events API – Mainframe

User-defined events can be generated on the mainframe through an API call. The API consists of a call to the Fault Analytics module CWFm. The only parameter required is the address of the record area containing a set of comma-separated fields (CSV file).

Each field requires both a field name and its data. For example, passing the job name XUSERID0A would be:

```
JOBNAME,XUSERID0A
```

The name is *not* case-sensitive. All data items are in character format. If the data contains a comma, the data field must be enclosed in double quotes.

A binary zero must delimit the end of the record area.

The fields in [Table 1](#) are required for each event.

**Table 1.** Required Event Fields

Field Name	Description
EventName	Name of the event to identify it
ErrorOccurredAtDate	Date of event: MM/DD/YYYY
ErrorOccurredAtTime	Time of event: HH:MM:SS
PublisherName	Name of the application that detected the event. For example, DCOMERR
PublisherVersion	Version of the application that detected the event
ErrorCode1	Unique error code for the problematic application
JobName	Job name of the problematic application

Refer to [Appendix B](#), on page 75 for a complete list of fields that can be input to Fault Analytics.

A typical CSV record would resemble that shown in [Figure 7](#).

**Figure 7.** Typical CSV Record Format

```
EVENTNAME,DCOM,ERROROCCURREDATDATE,04/24/2014,
ERROROCCURREDATTIME,16:25:22,
PUBLISHERNAME,DCOMERR,
PUBLISHERVERSION,V01R01,
ERRORCODE1,36,JOBNAME,DCOMJOB1,
PROGRAMNAME,DCOMPROG,DESCRIPTION,Uxxx-NOT OPEN
```

## API Format

### COBOL

```
01 RET-CODE      PIC S9(8)  USAGE IS BINARY.
01 CSV-REC-AREA PIC X(1024).
```

```
MOVE LOW-VALUES TO CSV-REC-AREA.
```

Insert comma-separated values in area.

```
CALL 'CWFM' USING CSV-REC-AREA RETURNING RET-CODE.
IF RET-CODE NOT EQUAL 0 ...
```

An alternative using the COBOL special register RETURN-CODE would resemble the following:

```
CALL 'CWFM' using CSV-REC-AREA.
IF RETURN-CODE NOT EQUAL 0 ...
```

### Assembler

```
LA  R2,CSV_REC_AREA      POINT TO RECORD AREA
CALL CWFM,((R2))        CALL FM MOD
```

or

```
LINK EP=CWFM,PARAM=((R2)) LINK TO MODULE
LTR  R15,R15             TEST RETURN CODE
```

### C/C++

```
extern __asm int CWFM(char *csvrec); // prototype

int return_code; // return-code
char *CSV_REC_AREA; // pointer to CSV Rec

return_code = CWFM(CSV_REC_AREA); // Call API
```

### PL/I

```
DCL RETCODE      BIN FIXED(31);
DCL CSVRECAREA  CHAR(1024) VARYINGZ;
DCL CWFM        EXTERNAL ENTRY ( CHAR(1024) VARYINGZ BYVALUE);
                RETURNS (BIN FIXED(31) BYVALUE);
```

```
RETCODE = CWFM ( CSVRECAREA );
```

You must specify the compile option DEFAULT(LINKAGE(SYSTEM)).

### Debugging

If the JCL statement

```
//AFDEBUG DD DUMMY
```

is present in the job-step, *debug* is turned on, and any rejection writes the appropriate error message to the job log. See [Return Codes](#) on page 68 for error messages.

## Processing the API Call

After the call is made to the API, several record validation checks are performed:

- The record passed is checked for a terminating binary zero.
- The call is rejected if the terminating binary zero is not present or the total length of the entire event record exceeds 2048.
- A check is made to each Fault Analytics field name. Any names not defined cause the record to be rejected. (See [Appendix B](#), for a list of valid Fault Analytics field names.)
- The length of each field is checked. If it exceeds 255 or the allowable field size, the record is rejected.
- The CSV record is checked to ensure all required fields are passed. If any one is not passed, the record is rejected.
- A check is made for each field to ensure that no duplicate fields are present. Duplicate fields also cause a rejection.
- Events for normal abend error codes already being detected by Abend-AID and delivered to Fault Analytics cannot be generated via the API. If the field ERRORCODE1 has contents such as SOC7, ASRA, or four-digit MVS abend codes, the request is rejected.

If the record passes the checks above, it is sent for subsequent processing to Fault Analytics.

## Using the Fault Analytics Custom Mainframe API

The first step is to create the detection application. When detected, it must subsequently call the user-defined event API using the API formats shown previously.

Then linkedit CWFM into the application. To linkedit CWFM into the application, include the lines shown in [Figure 8](#) in the link JCL.

**Figure 8.** Linkedit CWFM JCL

```
//INCLIB DD DISP=SHR,DSN=h1q.LOADLIB FM Loadlib
. . . . .
//SYSLIN DD . . . . .
//      DD *
        INCLUDE INCLIB(CWFM)
. . . . .
```

## Return Codes

After a call is made to the user-defined event API, one of the return codes in [Table 2](#) is sent back to the calling program.

**Table 2.** Return Code

Return Code	Message If Debug On	Description
0		Record accepted.
4	CANNOT LOCATE PAB	Fault Analytics is not running.
8	INVALID FLD NAME: <i>nnnnnn</i>	A field unknown to Fault Analytics was present in the CSV record passed.
12	MISSING NULL/SIZE EXCEEDED	The terminating NULL was not found within the first 2048 bytes of the record passed.
16	BAD REC ADDRESS PASSED	Invalid record address.
20	ERROR SEARCHING FOR NULL	NULL not found, record is invalid.
24	ERRORCODE1 REJECTED: <i>cccccc</i>	The error code passed is either a mainframe system, user, or CICS abend code.
28	DUPLICATE FIELD NAME: <i>nnnnnn</i>	A duplicate field has been passed to CWFM.
32	MISSING REQ FLD: <i>nnnnnnnn</i>	The required field was not passed to CWFM.
36	DATA LEN ERR: <i>ffffff</i>	The data length of field <i>ffffff</i> is greater than 256 or exceeds the maximum allowed field length.
40	INVALID NAME FIELD	The name part of the field exceeds 24 bytes.
44	INVALID DATE: <i>ddddddddd</i>	The date field is invalid. It must be in the form: MM/DD/YYYY.
48	INVALID Time: <i>ttttttt</i>	The time field is invalid. It must be in the form: HH:MM:SS.
52	INVALID EVENT NAME: <i>nnnnnn</i>	The event name is reserved for Compuware products.
56	INVALID DATA FLD: <i>nnnnnn</i>	The data in field <i>nnnnnn</i> contains non-character data.
60	DATA ALL SPACES FLD: <i>nnnnnn</i>	The data in field <i>nnnnnn</i> contains all spaces.

## Coding Examples

### General Description

[Table 3](#) lists sample source code for C and COBOL—as well as compile, link, and test JCL—that can be found in the Abend-AID installation sample library (CTL).

**Table 3.** Sample Source Code for C and COBOL

Member	Description
CFMAPI	C API sample source program
\$47FACCL	JCL to compile and link CFMAPI (Uses IBM compiler)
\$49FACPI	Sample JCL to run program CFMAPI
COBFMAPI	COBOL API sample source program
\$48FACBL	Compile and link JCL to build COBFMAPI executable
\$50FACBI	JCL to run COBFMAPI

Before proceeding, complete the steps in [Using the Fault Analytics Custom Mainframe API](#) on page 67 for CFMAPI or COBFMAPI to work.

## Input to CFMAPI

Input to CFMAPI consists of the following commands: TSTAPIX and PUBLISH. TSTAPI causes a canned event (eventname TSTEVENT) to be published. Command TSTAPIX causes a CSV record to be built in memory, with each successive TSTAPIX command appending its parameters to the CSV record. When the record has been built, the PUBLISH command issues a call to CWFM and the event is published.

### Sample Input to CFMAPI:

```
//SYSIN DD *
TSTAPIX EVENTNAME,TESTEV,ERROROCCURREDATDATE,02/19/2014,
TSTAPIX ERROROCCURREDATTIME,09:01:33,PUBLISHERNAME,COBAPI,
TSTAPIX PUBLISHERVERSION,01.01.01,ERRORCODE1,COBERR1,
TSTAPIX JOBNAME,XUSERID0Q,PROGRAMNAME,COBFMAPI
PUBLISH
```

## Input to COBFMAPI

Input to COBFMAPI consists of the command TSTAPIX. Command TSTAPIX causes a CSV record to be built in memory, with each successive TSTAPIX command appending its parameters to the CSV record. The TSTAPIX command for COBFMAPI expects a delimiting tilde (~) at the end of the parameters. When CMDINPUT end-of-file occurs, a call to CWFM is issued, the event is published, and the program ends.

### Sample Input to COBFMAPI:

```
//CMDINPUT DD *
TSTAPIX EventName,TESTEV,ErrorOccurredAtDate,02/19/2014,~
TSTAPIX ErrorOccurredAtTime,09:01:33,PublisherName,COBAPI,~
TSTAPIX PublisherVersion,01.01.01,ErrorCode1,COBERR1,~
TSTAPIX JobName,XUSERID0Q,ProgramName,COBFMAPI~
```



# Fault Analytics Fields

[Table 4](#) lists Fault Analytics database field names for reports and the equivalent rules field names, as well as the operating systems for which those fields are valid. If a size is specified, that field is a text field.

**Table 4.** Fault Analytics Fields

Database Field Name for Report	Rules Field Name	Size
<b>General Event Information</b>		
CALLING_PROGRAM	CallingProgram	32
CPU_TIME	<b>Mainframe:</b> Step or StepCPUTime or TransactionCPUTime	28
DESCRIPTION	JobName+ProgramName+ErrorCode1	255
ELAPSED_TIME	<b>Mainframe:</b> Step or TransactionElapsedTime	28
LINK	Link	255
MACHINE_NAME	SystemID	32
NAME	EventName	16
OBJ_MODULE_COMPILE_TS	ObjectModulecompileDate	mm/dd/yyyy
OS_NAME	OperatingSystemName	16
OS_RELEASE	OperatingSystemRelease	25
PROGRAM_LINK_TS	ProgramLinkDate	mm/dd/yyyy
PROGRAM_LOCATION	ProgramLibrary	255
PROGRAM_NAME	Program Name	32
TS_UTC	ErrorOccurredAtDate+ ErrorOccurredAtTime	mm/dd/yyyy time24
TYPE	EventType	32
USER_ID	JobUserID	32
<b>Publisher Information</b>		
NAME	PublisherName	64
LOCATION	PublisherID	20
RELEASE	PublisherVersion	8
<b>Fault Information</b>		
DDIO_SOURCE_FILE_NAME	SourceFileName	44
DESCRIPTION	Description	255
DNS_NAME	DNSName	64
PORT_NUMBER	PortNumber	5
PRIMARY_FAULT_CODE	ErrorCode1	12
PROGRAM_ADDRESS	ProgramOffset	16
REFERENCE_LOCATION	DataSetName	255

**Table 4.** Fault Analytics Fields

Database Field Name for Report	Rules Field Name	Size
REFERENCE_NAME	ReportNumber	32
SECONDARY_FAULT_CODE	ErrorCode2	12
<b>Performance Information</b>		
EVENT_CODE	EventCode	16
MEASUREMENT_NUMBER	MeasurementNumber	4
SAMPLE_COUNT	SampleCount	6
SAMPLE_DATASET_NAME	SampleDatasetName	45
STEP_NUMBER	StepNumber	38
THRESHOLD	Threshold	32
<b>IBM Mainframe Information</b>		
AA_ASSIGNED_TO	Abend-AidAssignedToUserID	10
CPU_ID	CPUID	12
CSECT_COMPILER_ID	CSECTCompilerID	32
CSECT_NAME	CSECTName	16
CSECT_OFFSET	CSECTOffset	8
DUPLICATER_INDICATOR	Duplicate	1
ERROR_SUBCODE	ErrorSubCode	8
HEAP_FREE	LEUserHeapTotalFree	12
HEAP_INCREMENT_SIZE	LEUserHeapIncrementSize	12
HEAP_INITIAL_SIZE	LEUserHeapInitialSize	12
HEAP_SEGMENT_ERRORS	LEUserHeapTotalErrors	8
HEAP_SEGMENTS	LEUserHeapNumberOfSegments	8
HEAP_TOTAL	LEUserHeapTotalAllocated	12
JOB_ACCOUNTING	JobAccounting	144
JOB_APPLICATION_ID	JobApplicationID	8
JOB_CLASS	JobClass	1
JOB_CPU_TIME	JobCPUTime	28
JOB_ELAPSED_TIME	JobElapsedTime	28
JOB_JES_ID	JobJESID	8
JOB_NAME	JobName	8
JOB_PRIORITY	JobPriority	3
JOB_PROGRAMMER_NAME	JobProgrammerName	20
PROCEDURE_NAME	ProcedureName	64
STEPNAME	StepName	16
<b>CICS Information</b>		
NET_NAME	CICSNetName	8
OPERATOR_ID	CICSOperatorID	8
RELEASE	CICSRelease	8
TERMINAL_ID	CICSTerminalID	4



**Table 4.** Fault Analytics Fields

Database Field Name for Report	Rules Field Name	Size
TRANSACTION_ID	CICSTransactionID	4
<b>CICS Web Interface (CWI) Information</b>		
ALIAS_TRANSACTION_ID	CWWebAliasTranID	4
ALIAS_TRANSACTION_PROGRAM	CWWebAliasTranProgram	8
ANALYZER_PROGRAM	CWAnalyzerProgram	8
ATTACH_TRANSACTION_ID	CWWebAttachTranID	4
ATTACH_TRANSACTION_PROGRAM	CWWebAttachTranProgram	8
BRIDGE_EXIT_PROGRAM	CWBridgeExitProgram	8
BRIDGE_TRANSACTION_ID	CWBridgeTranID	4
CLIENT_IP_ADDRESS	CWClientIPAddress	15
HOST_IP_ADDRESS	CWHostIPAddress	15
PORT_NUMBER	CWPortNumber	5
TCPIP_SERVICE_NAME	CWTCPIPServiceName	8
URL	CWSuppliedURL	255
<b>DB2 Information</b>		
AUTHORIZED_ID	DB2AuthorizedID	10
PLAN_PACKAGE	DB2PlanOrPackage	8
RELEASE	DB2Release	8
SQLCODE	DB2SQLCODE	8
SUBSYSTEM	DB2Subsystem	8
<b>IDMS Information</b>		
RELEASE	CA-IDMSRelease	8
STATUS_CODE	CA-IDMSStatusCode	8
SUBSCHEMA	CA-IDMSSubschema	8
VERSION	CA-IDMSCentralVersion	8
<b>IMS Information</b>		
PSB_NAME	IMSPSBName	8
RACF_ID	IMSRACFID	10
RELEASE	IMSRelease	8
SUBSYSTEM	IMSSubsystem	8
TERMINAL_IC	IMSTerminalID	8
TRANSACTION_ID	IMSTransactionID	8
<b>User Defined Information</b>		
FIELD1	UserField01	8
FIELD2	UserField02	8
FIELD3	UserField03	16
FIELD4	UserField04	16
FIELD5	UserField05	16
FIELD6	UserField06	16

**Table 4.** Fault Analytics Fields

Database Field Name for Report	Rules Field Name	Size
FIELD7	UserField07	32
FIELD8	UserField08	32
FIELD9	UserField09	32
FIELD10	UserField10	32
FIELD11	UserField11	32
FIELD12	UserField12	32
FIELD13	Userfield13	32
FIELD14	UserField14	32
FIELD15	UserField15	32
FIELD16	UserField16	32
FIELD17	UserField17	32
FIELD18	UserField18	64
FIELD19	UserField19	128
FIELD20	UserField20	255

# Fault Analytics Custom API Fields

[Table 5](#) lists Fault Analytics field names and other related information for use with the custom API.

In the **Data Type** column, the number in parentheses is the size of the field.

**Table 5.** Fault Analytics Fields

Field Name	Data Type	Required Field	Fault Mgr. Gen.	Field Name Descriptions
<b>Event Information</b>				
Application	Char (32)	No	Yes	Command line used to start the program
CallingProgram	Char (32)	No		Program that called the faulting program
CPUTime	Number(28)	No		Amount of CPU time (ms) taken by the process or step
Description	Char (255)	No		Description of the event
ElapsedTime	Number(28)	No		Amount of time (ms) the process or step has been running
ErrorOccurredAtDate	Date/Time	Yes		Date stamp when the event occurred Format: mm/dd/yyyy
ErrorOccurredAtTime	Date/Time	Yes		Time stamp (time24) when the event occurred
EventName	Char (16)	Yes		Name given to the event (Must not be: Batch, CICS Transaction, CICS Region, JCL, Log Event, SMF Batch, Strobe Measurement Started, Strobe Warning, Strobe Measurement Completed)
EventType	Char (32)	No		Type of event that occurred (for example, Batch, CICS Transaction)
JobUserID	Char (32)	No		User ID associated with the program that caused the fault
Link	Char (255)	No		Hyperlink (such as a URL) to more event information
ObjectModuleCompileDate	Date	No		Date the faulting program was last compiled
OperatingSystemName	Char (16)	No		Operating system where the program fault occurred
OperatingSystemRelease	Char (25)	No		Operating system release where the program fault occurred
ProgramLibrary	Char (255)	No		Location where the program resides (for example, path or load library)
ProgramLinkDate	Date/Time	No		Timestamp when the program was built Format: mm/dd/yyyy
ProgramName	Char (32)	No		Name of the software program that caused the fault event
SystemID	Char (32)	No		Name of the machine/system ID where the fault occurred
<b>Publisher Information</b>				

**Table 5. Fault Analytics Fields**

Field Name	Data Type	Required Field	Fault Mgr. Gen.	Field Name Descriptions
PublisherID	Char(20)	Yes		Network name or IP address assigned to the machine that published the event
PublisherName	Char (32)	Yes		Application name that published the event (for example, Abend-AID)
PublisherVersion	Char (8)	Yes		Software release of the application that published the event
<b>Fault Information</b>				
DataSetName	Char (255)	No		Data file name containing the fault information (i.e., dump)
ErrorCode1	Char (12)	Yes		Error code of the fault
ErrorCode2	Char (12)	No		Secondary error code or sub-code of the fault
ProgramOffset	Char (16)	No		Instruction pointer address (in hexadecimal) where the program fault occurred
ReportNumber	Number (32)	No		Report number identifying the dump
<b>IBM Mainframe Information</b>				
Abend-AIDAssignedToUserID	Char (10)	No		User ID error assigned to by Abend-AID
CPUID	Char (12)	No		ID of the CPU where the fault event occurred
CSECTCompilerID	Char (32)	No		Compiler ID of the control section in error
CSECTName	Char (16)	No		Control section name of the faulting program
CSECTOffset	Char (8)	No		Control section offset into the faulting program
Duplicate	Char (1)	No		Indicator if Abend-AID for CICS region/transaction error is a duplicate (Y/N)
ErrorSubCode	Char (8)	No		Error sub-code of the fault event
JobAccounting	Char (144)	No		Faulting job's accounting code
JobApplicationID	Char (8)	No		Application ID assigned to the job
JobClass	Char (1)	No		Faulting job's class
JobCPUTime	Number (28)	No		CPU time (ms) consumed by the job
JobElapsedTime	Number (28)	No		Total time (ms) since the start of the job
JobESID	Char (8)	No		Faulting job's JES ID
JobName	Char (8)	Yes		Name of the job for the fault event
JobPriority	Char (3)	No		Faulting job's priority
JobProgrammerName	Char (20)	No		Name of the programmer assigned to the job
LEUserHeapIncrementSize	Char (12)	No		Increment size of the user LE heap
LEUserHeapInitialSize	Char (12)	No		Initial size of the user LE (language environment) heap
LEUserHeapNumberOfSegments	Char (8)	No		Number of user LE heap segments allocated
LEUserHeapTotalAllocated	Char (12)	No		Total amount of user LE heap allocated
LEUserHeapTotalErrors	Char (8)	No		Total number of errors in all LE heap segments
LEUserHeapTotalFree	Char (12)	No		Total amount of user LE heap free
ProcedureName	Char (64)	No		Name of the procedure where the fault occurred
<b>CICS Information</b>				

**Table 5. Fault Analytics Fields**

Field Name	Data Type	Required Field	Fault Mgr. Gen.	Field Name Descriptions
CICSNetName	Char (8)	No		Transaction server name where the CICS fault occurred
CICSOperatorID	Char (8)	No		Operator ID assigned to the CICS fault event
CICSRelease	Char (8)	No		CICS release where the fault occurred
CICSTerminalID	Char (4)	No		Terminal ID where the fault occurred
CICSTransaction	Char (4)	No		Transaction ID of the fault
<b>CICS Web Interface (CWI) Information</b>				
CWIANalyzerProgram	Char (8)	No		Analyzer program
CWIBridgeExitProgram	Char (8)	No		Bridge exit program
CWIBridgeTranID	Char (4)	No		Bridge transaction
CWIClientIPAddress	Char (15)	No		IP address of the client
CWIHostIPAddress	Char (15)	No		IP address of the host
CWIPortNumber	Char (5)	No		Port number (1-32767)
CWISuppliedURL	Char (255)	No		Supplied URL
CWITCPIPServiceName	Char (8)	No		TCP/IP service name
CWIWebAliasTranID	Char (4)	No		Web alias transaction ID
CWIWebAliasTranProgram	Char (8)	No		Web alias transaction program
CWIWebAttachTranID	Char (4)	No		Web attach transaction ID
CWIWebAttachTranProgram	Char (8)	No		Web attach transaction program
<b>DB2 Information</b>				
DB2AuthorizedID	Char (10)	No		Authorized ID associated with the fault event
DB2PlanOrPackage	Char (8)	No		DB2 plan or package used
DB2Release	Char (8)	No		DB2 release where the fault occurred
DB2SQLCODE	Char (8)	No		SQL code of the DB2 fault event
DB2Subsystem	Char (8)	No		DB2 subsystem where the fault occurred
<b>IDMS Information</b>				
IDMSCentralVersion	Char (8)	No		Central version of IDMS
CA-IDMSRelease	Char (8)	No		IDMS release where the fault occurred
CA-IDMSStatusCode	Char (8)	No		IDMS status code of the fault event
CA-IDMSSubschema	Char (8)	No		Sub-schema associated with the fault event
<b>IMS Information</b>				
IMSPSBName	Char (8)	No		Program Specification Block (PSB) name of the fault event
IMSRelease	Char (8)	No		IMS release where the fault occurred
IMSSubsystem	Char (8)	No		IMS subsystem where the fault occurred
IMSTerminalID	Char (8)	No		Terminal ID where the fault occurred (not currently used)
<b>User Defined</b>				
UserField01	Char (8)	No		User-defined Data Field #1

**Table 5.** Fault Analytics Fields

Field Name	Data Type	Required Field	Fault Mgr. Gen.	Field Name Descriptions
UserField02	Char (8)	No		User-defined Data Field #2
UserField03	Char (16)	No		User-defined Data Field #3
UserField04	Char (16)	No		User-defined Data Field #4
UserField05	Char (16)	No		User-defined Data Field #5
UserField06	Char (16)	No		User-defined Data Field #6
UserField07	Char (32)	No		User-defined Data Field #7
UserField08	Char (32)	No		User-defined Data Field #8
UserField09	Char (32)	No		User-defined Data Field #9
UserField10	Char (32)	No		User-defined Data Field #10
UserField11	Char (32)	No		User-defined Data Field #11
UserField12	Char (32)	No		User-defined Data Field #12
UserField13	Char (32)	No		User-defined Data Field #13
UserField14	Char (32)	No		User-defined Data Field #14
UserField15	Char (32)	No		User-defined Data Field #15
UserField16	Char (32)	No		User-defined Data Field #16
UserField17	Char (32)	No		User-defined Data Field #17
UserField18	Char (64)	No		User-defined Data Field #18
UserField19	Char (128)	No		User-defined Data Field #19
UserField20	Char (255)	No		User-defined Data Field #20
<b>Strobe Information</b>				
EventCode	Char (16)	No		Strobe event code
MeasurementNumber	Char (4)	No		Strobe measurement number that has exceeded threshold
SampleCount	Char (6)	No		Number of samples in the Strobe measurement
SampleDatasetName	Char (45)	No		Dataset name of the Strobe sample
StepNumber	Number	No		Job step number for the Strobe event

# Using Fault Analytics with Abend-AID

## Abend-AID

If you want to use the Abend-AID Viewer's URLPUB feature, refer to the *Abend-AID Advanced Configuration Guide*.

## Abend-AID for CICS

Abend-AID for CICS must be enabled before it can provide Fault Analytics transaction and/or region fault data. To enable Abend-AID for CICS, set the parameter **MANAGEMENT\_REPORTING** to **YES** in both the transaction dump capture address space (TDCAS) and the viewing server address space.

You can find the parameters required to support the Fault Analytics in the Abend-AID installation sample (*hlq.CTL*) library.

After you add the parameters, you need to recycle both the TDCAS and viewing server.

If you need more information about the TDCAS or the viewing server, refer to the *Abend-AID Advanced Configuration Guide*. Compuware manuals can be found online, in PDF format, on Compuware's Customer Solutions site: <http://go.compuware.com>.





# Fault Analytics Export and Load Process

This chapter provides procedures to convert Fault Analytics data from a SQL Server database to a DB2 database. The following procedure extracts the data from each SQL Server table into flat files, transfers those flat files to z/OS, and loads them into the Fault Analytics DB2 tables.

1. **ARCHIVE:** If your database is large, consider archiving some of the data so that the files created for the extract and load process are not unreasonably large.
2. **STOP COLLECTION:** Before extracting any data, stop all Fault Analytics components. Data should not be collected during the extract process.
3. **ENABLE EXPORT:** The export process, uses the `bcp` (bulk copy) command with `xp_cmdshell`. The `xp_cmdshell` may need to be enabled. This can be accomplished by using `sp_configure`. Execute the following to enable `xp_cmdshell`.
4. **CUSTOMIZE EXPORT:** See the `bcpcommand.txt` file. Edit the file to reflect your environment.
  - a. Replace `[database]` with the name of your database.
  - b. Replace `[schema]` with the name of your schema.
  - c. Replace `[path]` with the directory path where the exported data will reside. Insure that the `userid` performing the extract has write permission to the directory specified.
  - d. Replace `[server]` with the server name.
  - e. Replace `[loginid]` with `userid` for the server.
  - f. Replace `[password]` with the password for the server `userid`.
5. **EXPORT:** In SQL Server Management Studio, after connecting to the server that contains the Fault Analytics database,
  - a. Open a new query window.
  - b. Copy the contents of the `bcpcommand.txt` file into the query window and execute the query. This issues a `bcp` command for each of the tables in the database and exports the data in the table to a delimited flat file with the naming convention `tablename.txt`. The results from these commands will be needed in the next step.
6. **RECORD:** In the table shown below, record the number of records exported for use in the DB2 load utility job. The tables will be loaded in the order listed to ensure enforcement of referential integrity.

**Table 6.** Record the number of exported records

Migration Order	Table Name	Exported (Y/N)	Number of Records Exported
	CWAF_CONFIGURATION	N	0
	CWAF_AUTOINCREMENT	N	0
1	CWAF_PUBLISHER	Y	
2	CWAF_EVENT	Y	
3	CWAF_FAULT	Y	
4	CWAF_FAULT_CICS	Y	
5	CWAF_FAULT_CWI	Y	
6	CWAF_FAULT_DB2	Y	
7	CWAF_FAULT_IDMS	Y	
8	CWAF_FAULT_IMS	Y	
9	CWAF_FAULT_MQSERIES	Y	
10	CWAF_FAULT_OS390	Y	
11	CWAF_CUSTOM†	Y	
12	CWAF_SCHED_REPORTS	Y	
13	CWAF_PERFORMANCE	Y	
14	CWAF_LMS	Y	
15	CWAF_USER_DEFINED	Y	
	CWAF_TIME_ZONE_INFO	N	0
16	CWAF_OPEN_FILES	Y	
17	CWAF_OPEN_FILES_MAP	Y	
18	CWAF_OPEN_FILES_HOLD	Y	
19	CWAF_DB2_HOLD	Y	
20	CWAF_DB2_TABLES	Y	
21	CWAF_DB2_TABLES_MAP	Y	
22	CWAF_DB2_TABLES_HOLD	Y	
23	CWAF_ROOT_CAUSE	Y	
24	CWAF_ROOT_CAUSE_HOLD	Y	
25	CWAF_AA_LINKS	Y	
	CWAF_ORDER_BY_CONSTANTS	N	0
	CWAF_USERS	N	0
	CWAF_ROLES	N	0
26	CWAF_EMAIL_CONFIG	Y	
27	CWAF_DISTLISTS	Y	
28	CWAF_DISTLIST_ADDR	Y	
29	CWAF_NOTES	Y	
	CWAF_USERROLES	N	0
30	CWAF_REPORT_DEFAULTS	Y	
	CWAF_FAULT_WIN	N	0
	CWAF_FAULT_UNIX	N	0

†. CWAF\_CUSTOM can contain customized column names.

7. **CREATE DATASETS** (*optional*): If you prefer to pre-allocate the datasets that will hold the extracted data for the DB2 load job,
  - a. Log on to TSO, modify, and run the CRTDSN job. The SPACE allocations will need to be reviewed and modified to reflect the size of the flat files that will be transferred.
  - b. Change the value USERID to the high level qualifier of the datasets that will receive the extracted data. (This step may not be needed if the transfer method allocates the datasets.)
8. **TRANSFER TO DATASETS**: Transfer the flat files to the datasets created in the previous step.

9. **INSTALL:** Before running the DB2 Load utility, the Fault Analytics database and tables should be created. The load job assumes that the data will be loaded into empty tables. Some tables are populated as part of the install and are not loaded.
10. **CUSTOMIZE LOAD:** Edit the LOADDATA JCL.
  - a. Modify the Jobcard.
  - b. Change the value SQLID to the SQLID that created the Fault Analytics tables.
  - c. Change the value USERID to the high level qualifier of the datasets that contain the exported data specified in the CREATE DATASETS step.
  - d. Change the value ?? for each table to an integer value that is an approximation of the number of records being loaded. This information is provided in the EXPORT step and should have been recorded in the table of the RECORD step. This number will help the load perform efficiently.
  - e. Change the value of the LIB= parameter to the DB2 dataset that contains the DB2 utility module DSNUTILB.
  - f. Change the value of the SYSTEM= parameter to the DB2 subsystem ID on which the tables have been defined.
  - g. Review the LOAD statement for the table CWAF\_CUSTOM. Modify the list of columns and types to reflect customization, if necessary.
11. **LOAD:** Submit the LOADDATA JCL to load the DB2 tables with the exported SQL Server data. The userid submitting the JCL should have the proper DB2 authority. See the *DB2 Utilities Guide* for more information.
12. **COPY:** Make an image copy of the tablespace. The load job performs a separate load for each Fault Analytics table. It will place the tablespace in check pending. This will require that an image copy take place prior to turning on Fault Analytics to record events. See the *DB2 Utilities Guide* for more information.

