Oracle® Fail Safe

Release Notes

Release 4.1.1 for Microsoft Windows

E57060-01

January 2015

This document describes the new features in this release, software errors fixed, software compatibility, hardware compatibility, and notes about installation and deinstallation.

1 How These Notes Are Organized

The remainder of these release notes are divided into the following sections:

- Certification Information
- Installation
- New Features
- Unsupported Features
- Software Compatibility
- Problems Fixed
- Known Issues
- Documentation Updated for This Release
- Additional Information About Oracle Fail Safe
- Documentation Accessibility

2 Certification Information

The latest certification information for Oracle Fail Safe is available on My Oracle Support at

https://support.oracle.com

3 Installation

Due to necessary changes in the format of Oracle Fail Safe home directory structure, versions before 4.1.0 of Oracle Fail Safe must be deinstalled.

4 New Features

The following section provides information about the new features and additions in the Oracle Fail Safe release:

- Support for Multitenant Container Database (CDB)

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4.1 Support for Multitenant Container Database (CDB)

This release of Oracle Fail Safe adds support for the container database feature that was introduced in Oracle Database 12c. Fail Safe will recognize that a database is a root container and will start and stop individual pluggable databases owned by the container database. When a database is failed over or moved to another node in the cluster, Oracle Fail Safe will start each pluggable database using the state that was saved by the last SQL ALTER PLUGGABLE DATABASE ALL SAVE STATE command. Oracle database 12c patch set 1 (12.1.0.2) is required to have the ability to save the state of the pluggable databases.

4.2 Changes to Oracle Net Configuration

Many changes have been made to how an Oracle network listener is configured by Oracle Fail Safe when a database is added to a cluster group.

In earlier releases, when validating the network configuration, Oracle Fail Safe would change the HOST parameter in all address lists in all `listener.ora` and `tnsname.ora` files to use a numeric IP address. In this release, Oracle Fail Safe will only change the `HOST` parameter to a numeric IP address if it contains the name of the local cluster node and it will only change the listener descriptions in the `listener.ora` file. If there are multiple IP addresses associated with the node, then the listener description will contain a list of all of the node's IP addresses. Address lists in the `tnsnames.ora` file are no longer changed.

When adding a database to a cluster group, Oracle Fail Safe models the new listener on the listener currently being used by the database. For example, if the database's current listener is configured to listen on port numbers 1521 and 1522, then the new group listener will listen on those ports. If the old listener had parameters set in the `listener.ora` file, then the new listener will have the same parameters. For example, if `MAX_ALL_CONNECTIONS_listener_name` was set for the old listener, then the new cluster group listener would also have the parameter with the same value.

In earlier releases, Oracle Fail Safe would choose the first IP address that is associated with a network name and use that IP address in the address list for the listener. In this release, a cluster group listener listens on all IP addresses associated with a network name.

All database net service names are now configured when adding a database to a group. In earlier releases, Oracle Fail Safe would use the database name (`db_name`) when adding net service descriptors to the `tnsnames.ora` file. In this release, Oracle Fail Safe creates a net service name descriptor in the `tnsnames.ora` file for each name stored in the database's `service_names` parameter.

Secure listener registration is now enforced by all databases in a cluster group. Oracle Fail Safe creates the class of secure transports (COST) `SECURE_REGISTER_listener_name` parameter for the cluster group listener and sets the parameter value to IPC. The database `local_listener` parameter is changed to use the IPC address of the cluster group listener.

Oracle Fail Safe no longer attempts to configure external procedures. If a database uses external procedures, then the database administrator must manually configure the external procedures on all nodes in the cluster.

Listener static registration SID lists are no longer maintained by Oracle Fail Safe. If an application requires a SID_LIST entry to function properly, then the database administrator must manually create the SID list in the listener.ora file on each node in the cluster.

4.3 Changes to Parameter File Configuration

Server parameter files (spfile) are now required to be stored on a shared disk. The text parameter file (pfile) must contain a spfile reference to the server parameter file. The text parameter file may be stored on a local disk if there are node specific parameters that need to be set. In general, unless there is a need to use different parameters on different cluster nodes, Oracle suggests storing the text parameter file on a shared disk.

4.4 Network Validation Removed

Oracle Fail Safe no longer attempts to validate the network configuration of the cluster. Use the Windows failover cluster manager Validate Cluster wizard to ensure that the network is configured properly.

5 Unsupported Features

The following sections provide information about the unsupported features in the Oracle Fail Safe release:

- Application Services
- 32-Bit Server Platforms
- Oracle Enterprise Manager 12.1 Agents

5.1 Application Services

Oracle Application Services is not supported in this Oracle Fail Safe release.

5.2 32-Bit Server Platforms

This Oracle Fail Safe release is not supported on 32-bit server platforms. Only Oracle Fail Safe Manager is supported on 32-bit client.

5.3 Oracle Enterprise Manager 12.1 Agents

Starting with version 12.1, Oracle Enterprise Manager Cloud Control cannot be used to monitor and manage Oracle Databases that participate in a Microsoft Failover Clustering environment.

While Oracle Enterprise Manager (EM) does not directly manage or monitor Microsoft Failover Cluster, before EM 12.1, it could monitor Oracle targets in a Microsoft Cluster Environment when the EM Agent was properly configured and managed by Oracle Fail Safe. Without Oracle Fail Safe, EM cannot reliably manage any target that is part of a Microsoft cluster - for example: as far as EM is concerned, a database will vanish and appear on different physical nodes rather than one target.

Therefore, beginning with version EM Cloud Control 12.1, the new agent deployment strategy prevents Oracle Fail Safe from being able to properly configure an agent in a Microsoft Failover Cluster environment.

6 Software Compatibility

Oracle Fail Safe supports automatic clusterwide configuration of highly available databases and applications on Windows server clusters with one, two, or more nodes. This sections includes the following topics:

- Oracle Fail Safe Client
- Oracle Fail Safe Server

6.1 Oracle Fail Safe Client

Oracle Fail Safe Manager, the client, works with Oracle Fail Safe Server version 3.4.2.4 and later patch sets. Oracle Fail Safe Manager is supported on the following operating systems:

- Microsoft Windows Server 2008 R2
- Microsoft Windows Server 2012
- Microsoft Windows Server 2012 R2
- Windows 7
- Windows 8
- Windows 8.1

> **Note:** Microsoft Windows Server 2008 R2 and Windows 7 must have Windows Management Framework 4.0 installed.

> **Note:** Oracle Fail Safe Manager has compatibility issues with Microsoft Windows Server 2012 and Windows 8. Refer Section 8.2, "Oracle Fail Safe Manager Display Issues with Windows" for more information.

6.2 Oracle Fail Safe Server

Oracle Fail Safe Server is supported on the software listed in the following table:

Software	Release or Version
Oracle Database (Standard and Enterprise editions)	Oracle Database 11*g* Release 2 (11.2)
	Oracle Database 12*c* Release 1 (12.1)
Oracle Management Agent	Release 11.2
	(A Management Agent release for Microsoft Windows only)
Microsoft Windows Platforms	Microsoft Windows Server 2008 R2
	Microsoft Windows Server 2012
	Microsoft Windows Server 2012 R2

> **Note:** Microsoft Windows Server 2008 R2 must have .NET 4.0 installed.

> **Note:**
>
> - Oracle Fail Safe Server does not support Oracle Automatic Storage Management.
>
> - Oracle Fail Safe Server does not support 32-bit operating systems.
>
> - Oracle Fail Safe Server is only supported on Windows Server systems. It is not supported on non-server systems such as Windows 7 and Windows 8.

7 Problems Fixed

This section includes the following problems fixed on Oracle Fail Safe since release 4.1.0:

- Adding Database to Group Fails with FS-10999
- Wrong Home Used If One Home Path is Exact Substring of another Home
- Add-OracleClusterResource Fails with "Object reference not set to an instance of an object"
- InvalidOperationException When Exiting Fail Safe Manager
- Oracle Fail Safe Manager Fails with "Object reference not set to an instance of an object"
- Oracle Fail Safe Manager Fails Displaying Group for Windows Server 2012 R2 System that Contains CSVs

7.1 Adding Database to Group Fails with FS-10999

Bug 17025926

An error was returned when attempting to add a database to a group when Operating System (OS) authentication was enabled (the Oracle Fail Safe server user name was included in the Windows user group `ORA_DBA`) and the database home had a service user name specified. The error is similar to the following output:

```
FS-10999: An internal programming error has occurred
FS-10784: The Oracle Database resource provider failed to configure the virtual
server for resource TestDb
FS-10890: Oracle Services for MSCS failed during the add operation
```

When creating the database instance and listener services for a home that uses a service user name, it is necessary to specify the password for the user associated with the database home. However, the Oracle Fail Safe Manager neglected to prompt for the password. Thus, no password was given to the server.

To work around the problem, use the Fail Safe PowerShell cmdlets. For example:

```
PS C:\Users\admin> $TestDb=Get-OracleClusterResource -Available TestDb
PS C:\Users\admin> $TestDb.Home.ServiceUserPassword=Read-Host -AsSecureString
```

```
-Prompt "Home Password"
Home Password: *****
PS C:\Users\admin> $TestDb | Add-OracleClusterResource -Group FsTutorial -Verbose
```

This problem has been corrected. The Fail Safe Manager will now prompt for the database service user name password when adding a database to a cluster group.

7.2 Wrong Home Used If One Home Path is Exact Substring of another Home

Bug 17487131

It was possible to add a database to a cluster group (role) and have the database instance and listener configured to run executables that are not from the home that should have been used for that database.

This problem would occur when there were multiple database homes and the path (ORACLE_HOME) of one home was a substring of the correct home. For example, if there were two database homes on a system, one with the path:
"C:\Oracle\product\12.1.0\dbhome_1" and another with path:
"C:\Oracle\product\12.1.0\dbhome_10" it was possible for Oracle Fail Safe to configure a database that should have used dbhome_10 to use dbhome_1 instead.

Oracle Fail Safe has been corrected to correctly match a home's path when searching for a home with a particular path string.

To avoid this problem, create homes with paths that are not a substring of a path in another home. For example, name the homes "dbhome_1" and "dbhome_10" as "dbhome_01" and "dbhome_10" instead.

7.3 Add-OracleClusterResource Fails with "Object reference not set to an instance of an object"

Bug 18110059

When attempting to use the PowerShell interface to add a database to a cluster group, the Add-OracleClusterResource command could fail with the error "Object reference not set to an instance of an object". This problem would happen when a node in the cluster had a tnsnames.ora file that contained an entry with the desired service name, but there was no database instance on the node. In this situation, the Oracle Fail Safe Server would send information to the client about the target database but neglected to include the name of the Oracle home.

The Fail Safe Server will now always send the database home name, even if no database instance exists on the node that has a tnsnames.ora file service name entry.

This problem can be worked around by removing the database service description from all tnsnames.ora files that reside on nodes that do not have the standalone database instance.

7.4 InvalidOperationException When Exiting Fail Safe Manager

Bug 18178364

When exiting the Oracle Fail Safe Manager, if a group was selected on the Cluster page, an error pop-up would appear with the following message:

```
The following operation is not valid because the class View has shut down:
BeginUpdates.
```

The Fail Safe Manager had not completely disconnected all data sources for the Cluster form, leading to the exception if there was a group selected.

This problem has been corrected. All data sources are disconnected before terminating the client-server session with the Oracle Fail Safe Server.

7.5 Oracle Fail Safe Manager Fails with "Object reference not set to an instance of an object"

Bugs 17487334, 18475062

The Oracle Fail Safe Manager would sometimes fail with a pop-up message box containing text similar to the following:

```
Exception Type: System.NullReferenceException
Exception Message: Object reference not set to an instance of an object.
Exception Stack Trace:
  at Oracle.FailSafe.ResourceDatabase.CopyFromNative(OfosDbData* resData)
  at Oracle.FailSafe.Resource.GetResData()
  at Oracle.FailSafe.ResourceDatabase.LoadAllProperties()
```

This problem would occur when the Fail Safe Manager was attempting to fetch properties for an Oracle cluster resource that was not properly configured. For example, if an Oracle database was manually added to a cluster role (also known as "group" or "service or application") using the Windows Failover Cluster Manager "Add a Resource…" wizard, the Oracle cluster resource would not be configured correctly, leading to incomplete configuration data being returned to the Fail Safe Manager. It is also possible to create an Oracle cluster resource when executing the "Configure role…" wizard.

When an Oracle cluster resource was not configured by the Oracle Fail Safe Manager, it was possible for the Fail Safe Server to return incomplete properties to the Fail Safe Manager, which could lead to the exception described in the preceding example.

To work around this problem, use the Windows Failover Cluster Manager to delete any cluster resources that were manually added to a cluster group using one of the Windows Failover Cluster Manager wizards. Use the Oracle Fail Safe Manager to add any "Available Oracle Resources" that are displayed on the "Oracle Resources" window. Do not attempt to manually add an Oracle cluster resource to a group using the Windows Failover Cluster Manager.

The Oracle Fail Safe Manager has been corrected so that it does not fail when some or all properties are not returned for an Oracle cluster resource.

7.6 Oracle Fail Safe Manager Fails Displaying Group for Windows Server 2012 R2 System that Contains CSVs

Bug 19528491

If a cluster contained Cluster Shared Volume (CSV) resources, when attempting to display group (role) information, the Oracle Fail Safe Manager would display a pop-up box that contained the following error:

```
Exception Type: System.NullReferenceException
Exception Message: Object reference not set to an instance of an object.
```

```
Exception Stack Trace:
  at Oracle.FailSafe.Manager.GroupControl.FilterResource(Object item)
```

This Oracle Fail Safe Manager expected all resources to belong to known groups; however, CSVs are not assigned to any particular group. This would cause the Fail Safe Manager to fail with a `NullReferenceException`.

To avoid this issue, do not use CSVs until this patch set is installed.

The Oracle Fail Safe Manager now ignores resources that do not belong to a normal group.

8 Known Issues

This section includes information on Oracle Fail Safe known issues.

8.1 Oracle Fail Safe Cluster Verification May Report Incorrect Patch Levels for Oracle Products

BUG 7377494

The Oracle Fail Safe cluster verification may not display the correct patch level for Oracle products. The version displayed is derived from executable images in the Oracle home for the product and might not reflect the exact patch set version stored in the inventory.

8.2 Oracle Fail Safe Manager Display Issues with Windows

On Windows 8 and Microsoft Windows Server 2012 systems, Oracle Fail Safe Manager might not display dialog boxes correctly. Windows might not display the Graphical User Interface (GUI) elements with the correct layering or z-order.

Microsoft has resolved this problem in Microsoft .NET Framework 4.5.1 which is included in Windows Server 2012 R2 and Windows 8.1. Customers can download that release of .NET and install it on Windows Server 2012 or Windows 8 systems.

After installing .NET 4.5.1, it is then necessary to create a configuration file that will enable the correct behavior in applications, such as Microsoft Management Console (MMC), that may mix Windows Forms and Windows Presentation Foundation (WPF) in the same application. This release of Oracle Fail Safe will create the necessary file as part of the installation process.

9 Documentation Updated for This Release

See the following documentation, which was updated for this release, for additional information:

- *Oracle Fail Safe Concepts and Administration Guide for Microsoft Windows*

- *Oracle Fail Safe Installation Guide for Microsoft Windows*

- *Oracle Fail Safe Error Messages for Microsoft Windows*

- *Oracle Fail Safe Tutorial for Microsoft Windows*

The documentation is provided in HTML and PDF online formats. Viewing the PDF files requires Adobe Acrobat Reader 3.0 or later. You can download the latest version of Adobe Acrobat Reader from the Adobe website at

http://www.adobe.com/prodindex/acrobat/readstep.html

The documentation no longer ships with the kit. The HTML and PDF formats are available on the Oracle Technology Network.

10 Additional Information About Oracle Fail Safe

See the following websites for more information about Oracle Fail Safe:

- Oracle Fail Safe on the Oracle Technology Network at

  http://www.oracle.com/technetwork/documentation/failsafe-086865.html

  Updated software compatibility information, white papers, and so on are posted on the Oracle Technology Network website.

- Oracle Support Services at

  https://support.oracle.com/

  Contact your Oracle support representative for technical assistance and additional information, or visit the Oracle Support Services website to find out about other available resources.

11 Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

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