

Oracle®
Hospitality
OPERA IFC
Controller
Information and
Installation Guide



Release 5.0.03.42
March 2025



Copyright ©, 2025, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this software or related documentation is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

Contents

Contents	3
Preface	4
1 IFC8 Overview	1-1
IFC8 Components	1-1
2 Hardware and Operating System Considerations	2-2
3 Pre-Requisites (Shared Security Domain Environments Only)	3-3
4 Installation of IFC Controller	4-4
Verify the Service is Running	4-9
5 Shared Domain Security Services Environment	5-11
6 OPERA Cloud Security Non-SSD Services Enabled Environment	6-12
Adding Service Accounts	6-12
7 Configuring IFC Controller for OPERA Cloud and OPERA Cloud Identity Management Services Enabled Environments	7-13
Automatic Management of IFC Credentials feature	7-16
Handling User Lockout Due to Incorrect Password Attempts	7-18
Reviewing Password Rotation in Logs	7-18
8 OPERAIFC Controller Troubleshooting	8-20

Preface

This document describes how Hotel Property Interface (IFC8) works with OPERA Property Management System (PMS).

Purpose

This document includes the basic configuration of IFC8 to connect to a configured OPERA Property Interface. You must have a basic level of familiarity with OPERA, OPERA Property Interfaces, and the 3rd party vendors that utilize IFC8.

Audience

This document is intended for Oracle Hospitality members who need general information on the installation and functionality of Hotel Property Interfaces (IFC8) with OPERA PMS.

Customer Support

To contact Oracle Customer Support, access My Oracle Support at the following URL:

<https://iccp.custhelp.com>

When contacting Customer Support, please provide the following:

- Product version and program/module name
- Functional and technical description of the problem (include business impact)
- Detailed step-by-step instructions to re-create
- Exact error message received
- Screen shots of each step you take

Documentation

Oracle Hospitality product documentation is available on the Oracle Help Center at

<http://docs.oracle.com/en/industries/hospitality/>

Table 1 Revision History

Date	Description
January 2019	<ul style="list-style-type: none">• Initial publication March 2020
March 2020	<ul style="list-style-type: none">• Update Hardware Sizing +Links June 2021
June 2021	<ul style="list-style-type: none">• OPERA Cloud environment and OPERA 5 environment URL format examples added.

Date	Description
December 2021	<ul style="list-style-type: none">• Added Microsoft Patch (KB2919355) for Windows Server 2012 R2 pg 13.
March 2025	<ul style="list-style-type: none">• Added enhancement for Automatic Management of IFC user credentials. Note: This functionality is only available for environments with OPERA Cloud Identity Management for OPERA Cloud versions 25.1.x and higher.

IFC8 Overview

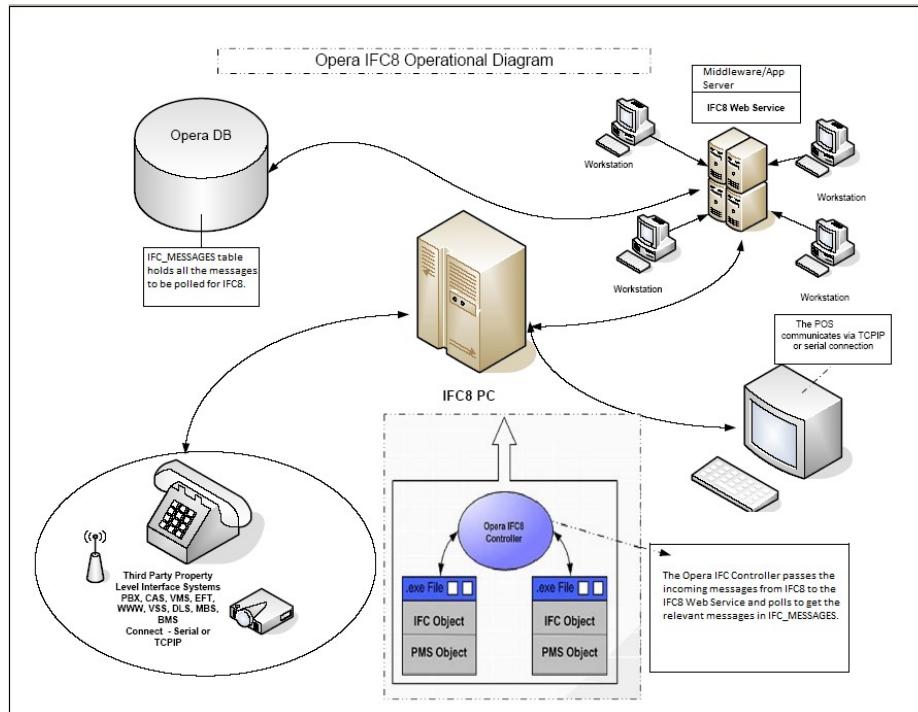
IFC8 Components

Hotel Property Interface (IFC8) with OPERA PMS contains three components: OPERA Interface web service, OPERA IFC Controller, and the IFC8 executable file.

OPERA Interface Web Service — this web service is installed as part of the standard OPERA Installation (For Example: Ifc8ws for v5, IFCInternalService for OPERA Cloud). It functions as a connection between the IFC Controller and OPERA Database.

OPERA IFC Controller — the OPERA IFC Controller is responsible for transferring XML messages from the IFC8.exe to the web service to be actioned in the database and polling the web service to get the queued messages from the database to be sent to IFC8.exe.

IFC8 Executable file — this program takes XML messages transferred to it from OPERA via the OPERA IFC Controller and translates them into messages that external systems can understand.



For the latest IFC8 component and OPERA IFC Controller, visit My Oracle Support (MOS) at <https://support.oracle.com/epmos/faces/Dashboard>. Navigate to the 'Patches & Updates' tab and search within the product field for the following:

- Oracle Hospitality Suite8 Property Interfaces
- Oracle Hospitality OPERA Property - Special Interfaces

2

Hardware and Operating System Considerations

The OPERA IFC Controller is a 32-bit Windows Service written in C# originally, within the .NET 2.0 framework. Latest versions (>5.03.00015) require .NET 4.5 or greater framework. Find the specific IFC8 version information in the Hotel Property Interface section on <https://docs.oracle.com/en/industries/hospitality/hotels.html>

Both programs are expected to be installed on a Windows (current Microsoft supported OS) machine at the customer site.

A rule of thumb concerning memory requirements for that Windows machine:

- 256 MB for the Windows OS.
- For the specific IFC8 version in use (Hotel Property Interface section on <https://docs.oracle.com/en/industries/hospitality/hotels.html>), see the Deployment Installation Guide for the memory requirements needed.
- Plus 100 MB for the OPERA IFC Controller.

3

Pre-Requisites (Shared Security Domain Environments Only)

OPERA V5 internal load balancer certificates are loaded into the SSD OSB keystore.

For step-by-step documentation for this pre-requisite, see *P00548 - OPERA 5.6.0 - SSD Integration – SSD Configuration on OPERA V5 Server - v1.1.docx*

4

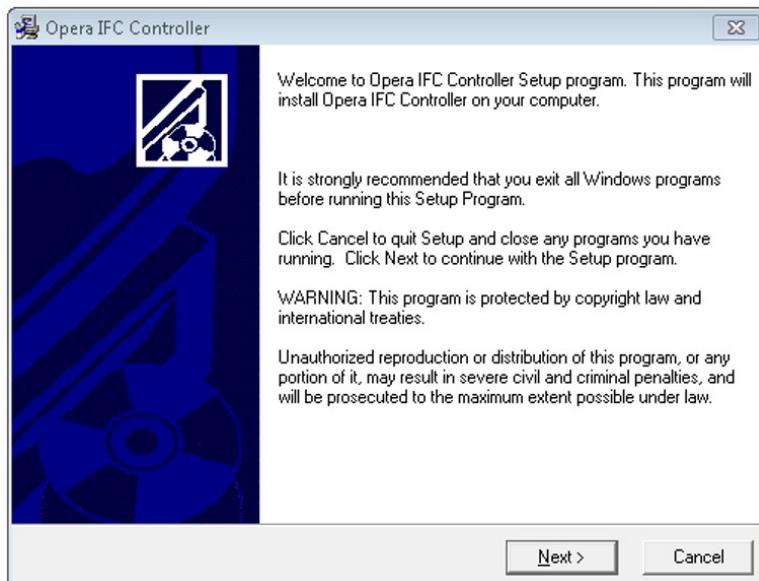
Installation of IFC Controller

1. Install the latest OPERA IFC Controller, Version 5.03.00016 or higher for OPERA 5 and TLS support; **5.03.00042 or higher for OPERA Cloud - .NET Framework 4.5 through 4.8.x is needed.**
2. Run the OperaIFCController-Installer.exe as an Administrator. (This can be a new install or an upgrade to an existing Controller on the machine).

 **NOTE:**

If the IFC controller is already installed, the exe requires time at startup to stop the Service.

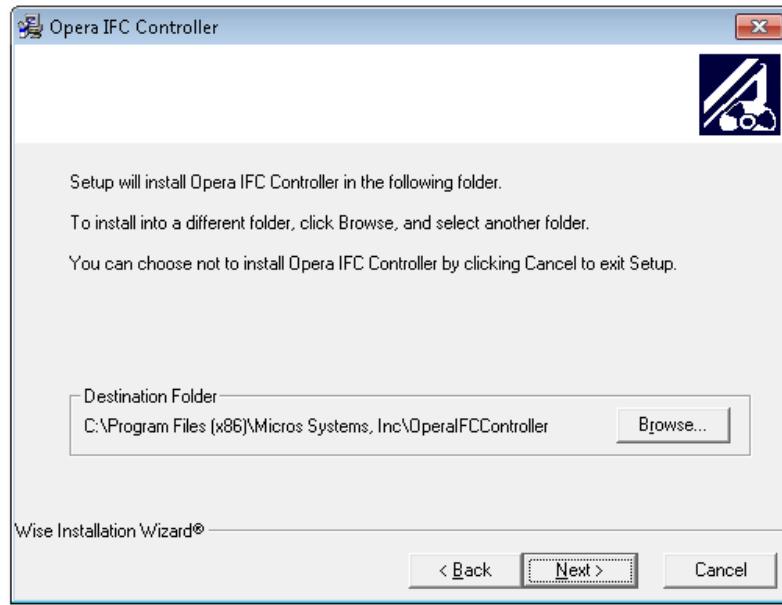
3. Click **Next**.



4. Choose the destination folder for the .exe and dlls to reside.

 **NOTE:**

The default options can be used.



5. Click **Next**.

If there is an existing Controller, the fields populate with the current Registry settings found at **HKEY_LOCAL_MACHINE > Software- > Wow6432Node > Micros-Fidelio > OPERA IFC Controller**.

For a new installation, enter the following fields:

- **Log Level.** This determines the granularity of the data logged by the controller. The recommended setting is 'Error'.
 - TRACE – Highest level of logging. Only set if instructed by Oracle Development for troubleshooting.
 - DEBUG – Logs all Messages, Warnings and Errors, plus communication messages. This is the common setting for troubleshooting an issue.
 - MESSAGE – Logs Error, Warning, and all messages from PMS.
 - WARNING – Logs Error and Warning messages.
 - ERROR – Logs Error messages and is the recommended setting.
- **Log Size.** The maximum size of a log file before it creates a new file (entry is in bytes, and the recommended setting is 1500000).
- **Log Purge.** The number of days to keep log files. At Controller startup, any logs earlier than this setting will be deleted.
- **Log Path.** The physical path where log files are generated. It is recommended that you route the Controller logs to the same directory structure as the interface logs for IFC8. Such as Instdrive, Fidelio, and IFC8. Ensure that the following three style files are copied to whatever location you store these files. (UP.gif, DOWN.gif, Log.xls). These files are needed for viewing the logs. These files, by default, are extracted into the C:\Program Files\Micros Systems, Inc\OperalFCCController path by the installation wizard.
- Send Interval, Timeout, Max Retry, Retry Interval, Use Clob and the Send Cfg Xml are used for specific scenarios and can be kept at the default settings with install.

- **Send Interval.** Configurable value (in ms) for the interval between each message sent to IFC8. A default value of 50ms is used when nothing is set. This can alleviate a backup on the vendor side if they cannot process a single message in 50 ms, this can be set higher to allow more time between the messages the Controller sends in (like with the DB Swap messages).
- **Timeout.** This is the Time out value (seconds) for web service connections. If nothing is set then .NET uses the default value of 100 secs. This is sufficient for most cases. The only reason to set it would be to set it > 100 seconds when dealing with a very slow system. (For example: Web service returning responses after 100 secs.) In reality this should not occur or there would be serious performance issues in OPERA in general.
- **Use Clob.** It is used when a LinkPmsConf has to support 32K or higher in size. The Default setting of N would suffice in the majority of installs.
- **OPERA V5, OPERA App Server Name or IP Address.** The URL to connect to the OPERA IFC web service on the Application, Load Balance, or OHS machine. Only the computer name should be entered. The exe will automatically add the full path.
 - For OPERA v5
 - Syntax: <https://<Application Server Name>/Operajserv/lfc8ws/lfc8ws> Example: <https://demoenv.com/Operajserv/lfc8ws/lfc8ws>
 - OPERA Cloud, the OSB Server Name is entered. Installer must edit the Registry setting (OperalfcWS) after the install completes for the correct path used with the OPERA Cloud web service. This could be the OHS server name or OSB server name depending on the environment. For Example:
https://OSBSERVER_Name/OPERA9OSB/opera/OperalFCServices/IFCInternalService or
https://OHSERVER_Name/OPERA9OSB/opera/OperalFCServices/IFCInternalService

 **NOTE:**

This assumes the implementation of the *OPERA Services Deployment Guide* as per standard OPERA installation of the web services used with the Hotel Property Interfaces.

- Shared Security Domain (SSD, the Installer must edit the Registry settings for OperalfcWS after the install completes for the correct path used with SSD OSB web services. SSD uses a load balancer for the OSB Server.
 - Example:
https://OSBLOADBL_SERVER/OPERAOSB/OPERA_IFC8/opera/IFC8/IFCInternalService
For GBUCS2.0 and GBUCS3.0, a dedicated OHS server is built to handle IFC traffic. New URLs with OHS will appear in the following format:
For the OPERA Cloud environment:
https://OHSLOADBL_SERVER/OPERAWS/opera/Auth/OperalFCServices/IFCInternalService
For the OPERA 5 environment:

NOTE:

Registry settings can be found at - HKEY_LOCAL_MACHINE->Software->Wow6432Node (when on a 64-bit machine)->Micros-Fidelio->OPERA IFC Controller.

- OPERA DB Datasource is the connection string to the database. This is only needed for the on-premises and hosted version 5 installs.

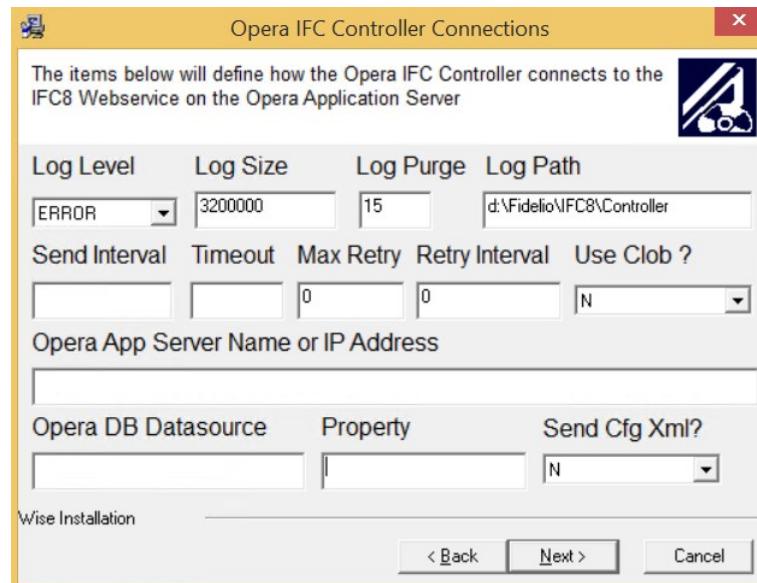
NOTE:

In the case of an OPERA Cloud installation, this variable can be kept with the default value.

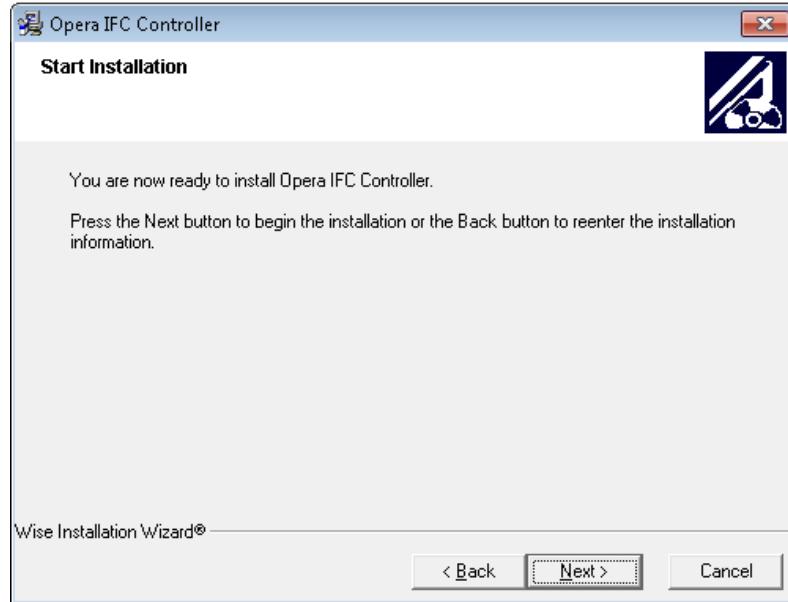
The format will always be as follows: jdbc/<schema_name>>database SID>ds
Example: jdbc/operaoperads

You can run this SQL Statement to retrieve that connection string: select java_util.get_jndi_connection from dual;

- **Property:** (Hotel Code/Resort) Enter the property that will be running IFC. This is used to initialize any properties in this chain. This variable should be entered in all caps.
- **Send Cfg Xml** This is used to allow the Controller to send the existing config.xml to OPERA when IFC8 is started. The recommended setting is the default of N.



6. Click **Next**.
7. Click **Next** again.



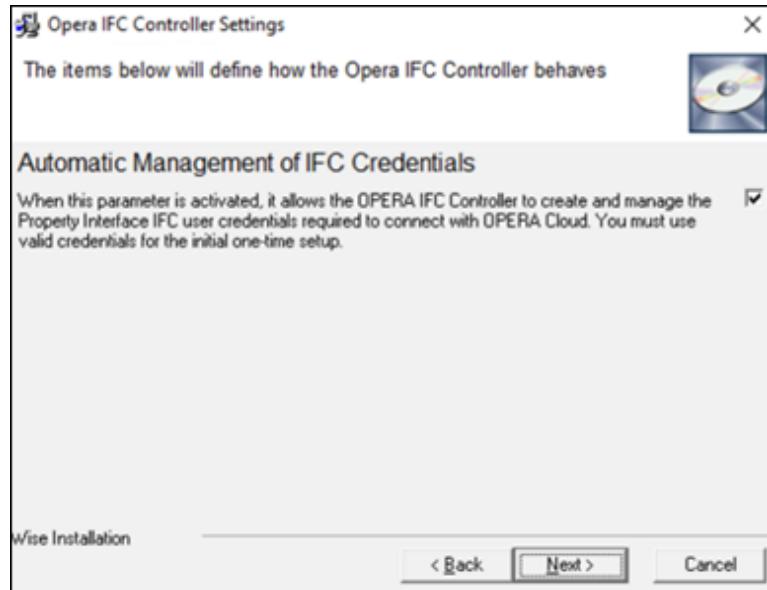
8. The IFC Controller now includes a checkbox to activate the parameter - Automatic Management of IFC Credentials.

About the feature

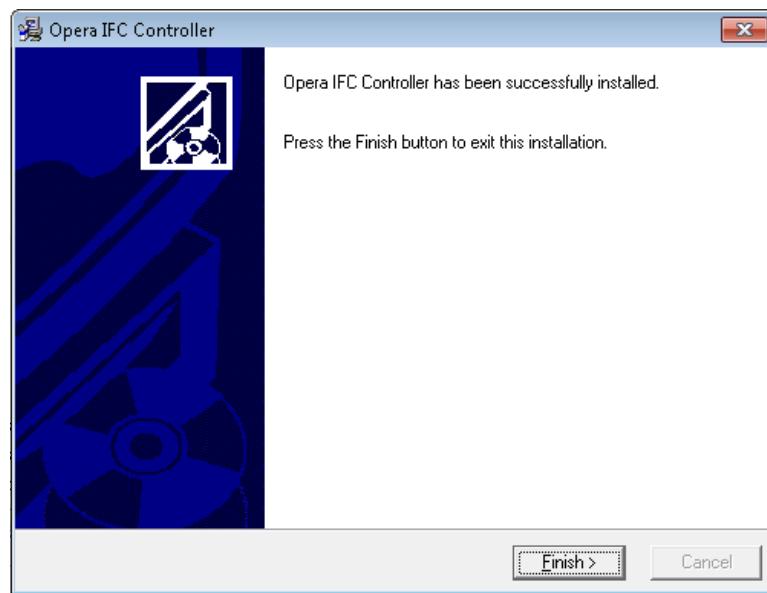
When selected, this feature allows the OPERA IFC Controller to automatically create and manage the required Property Interface IFC User Credentials for connecting with OPERA Cloud through automatic password rotation. Automatic password rotation is an automated process where system-generated passwords are periodically changed without manual intervention. This practice enhances security by ensuring that passwords are regularly updated, reducing the risk of unauthorized access. With this feature enabled, you do not need to manually reset the password for any IFC users.

Key Considerations

- This is a one-time only activation step during the IFC Controller installation.
- Valid user credentials must be entered during the initial one-time setup.
- If the checkbox is not selected during installation, the feature will remain disabled. This implies that the IFC Controller will not automatically manage the user credentials for you. Therefore, you will need to manually reset the user passwords in OPERA Cloud Role Manager when they expire.
- If the checkbox wasn't selected during the original installation and you need to enable the feature, you must reinstall the IFC Controller and check the **Automatic Management of IFC Credentials** check box.



9. When installation is complete, click **Finish**.



Verify the Service is Running

1. Navigate to the Run command and enter services.msc



2. The windows services window opens. Select the Service **OPERA IFC Controller**. Under status, the OPERA IFC Controller should be started.

A screenshot of the Windows Services (Local) window. The title bar says 'Services (Local)'. A service named 'Opera IFC Controller' is selected, highlighted with a blue border. To its left are 'Stop the service' and 'Restart the service' buttons. The main table lists several services with columns for Name, Description, Status, Startup Type, and Log On As. The 'Opera IFC Controller' row shows 'Started' in the Status column and 'Automatic' in the Startup Type column. The table has a header row with these column names.

 **NOTE:**

Refer to the above to modify registry settings as needed based on the specific deployment.

Shared Domain Security Services Environment

To learn more about configuring interface users and roles for the environments protected by Shared Security Domain services, visit My Oracle Support using the Doc ID 2329730.1. It covers the following areas:

- The Cutover process to a Shared Security Domain Services environment and describes the required actions for each day in the cutover process prior to onboarding tenants to the new environment.
- How to create OPERA users as an Organization Admin using the Shared Security Domain Services.
- How to create an interface user in Oracle Identity Management (OIM) for the Shared Security Domain Services environment.
- How to reset an interface user's password in Oracle Identity Management (OIM) for the Shared Security Domain Services environment.

6

OPERA Cloud Security Non-SSD Services Enabled Environment

For OPERA Cloud, additional credentials are needed that will be passed from the Controller to the web service endpoint to validate authorization of the use of the service. A user and password must be configured in Role Management for the Service Account or user being utilized for this purpose.

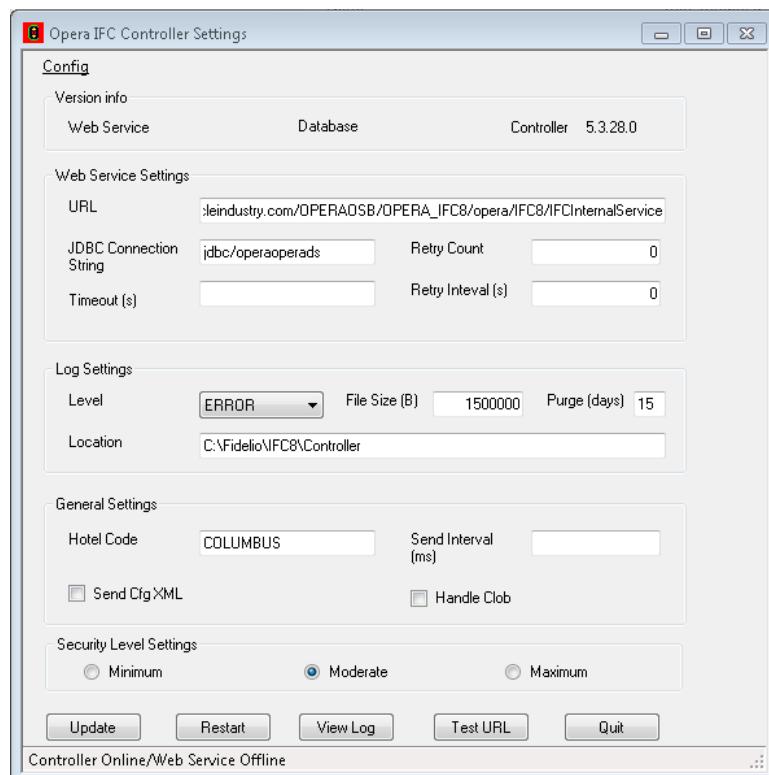
Adding Service Accounts

User logging in to OPERA Cloud's Role Manager must have a WS-ACCESS role or a role that has one of the following tasks added: Manage Users/New/Edit Users>Show All Users. Create a new service account with a password if one does not exist.

Configuring IFC Controller for OPERA Cloud and OPERA Cloud Identity Management Services Enabled Environments

To configure the IFC Controller for OPERA Cloud or OPERA Cloud Identity Management Services Enabled Environments:

1. Run the `OperaControllerExe.exe` as Administrator to add/change the username and password. This data is stored in encrypted format.

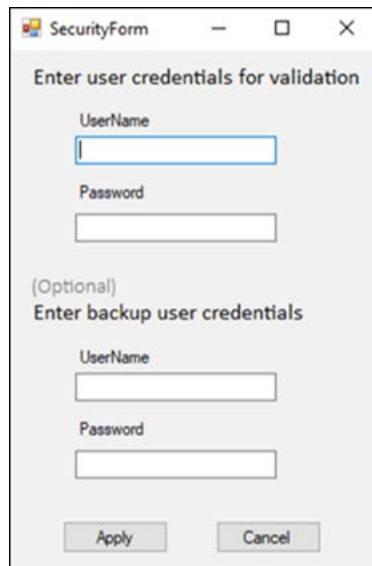


2. Go to Config > User Credentials.



Enter any previously used **UserName** and **Password** credentials from the OPERA Cloud Role Manager. These credentials will act as the primary user credentials. Please refer to the OPERA Cloud user guide [here](#) for instructions on accessing the IFC user credentials in the OPERA Cloud Role Manager.

You have an optional step to enter a second set of credentials which will act as the backup credentials. Enter any existing **UserName** and **Password** credentials from the OPERA Cloud Role Manager to serve as the backup credentials. Please ensure that these credentials are different from the primary credentials provided above. If the second set of credentials is not provided, a backup user will be created automatically.



If the **Automatic Management of IFC Credentials** feature was enabled during installation, the IFC Controller will automatically manage the IFC user credentials through the automatic rotation of the primary and backup credentials. With this feature enabled, resetting IFC user passwords is no longer required.

Key Considerations

- If the second set of credentials is not provided, a backup user will be created automatically.
- When the primary user's password is set to expire within 35 days, the IFC controller automatically resets it. Backup credentials are used until the primary credentials are updated.
- The IFC controller performs a password expiry check daily at 2 AM machine time.

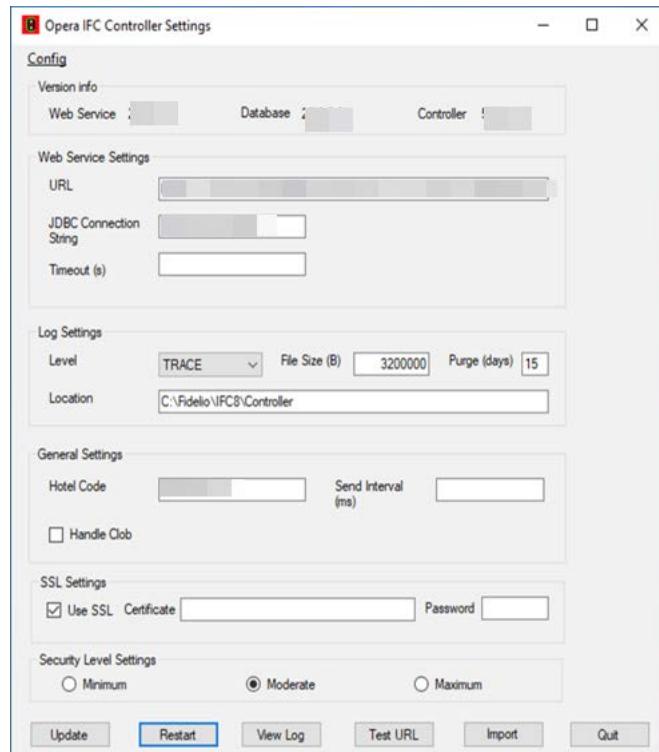
3. Click **Apply**.

Any existing data will be overwritten.

NOTE:

This cannot be used to view existing credentials.

4. Restart the controller for the changes to be applied.



NOTE:

The Security Level Settings configuration is the security level expected for the communication between the IFC Controller and the OPERA web service. This will default to Moderate with the install.

Minimum Security Level will enable up to TLS 1.1 communication protocol. OPERA does not recommend the use of this setting.

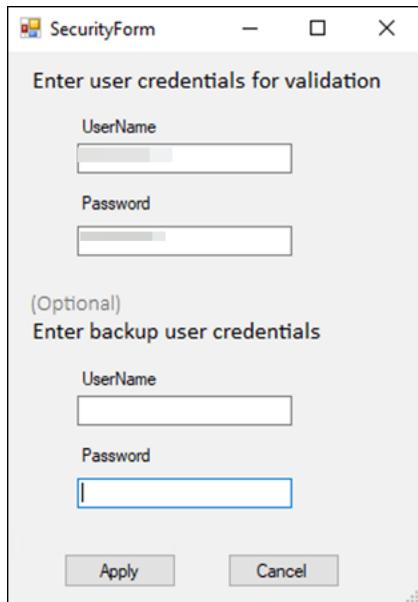
Moderate Security Level enables the use of the TLS 1.2 protocol but does not specify which ciphers or hashes are whitelisted or blacklisted, so the operating system defaults are used.

Maximum Security Level enables the use of the TLS 1.2 protocol and inserts Cipher and Hash subkeys in the OS Registry Editor to ensure the cipher set used by the Controller matches what OHS (used by OPERA Application Servers for IFC web services) allows.

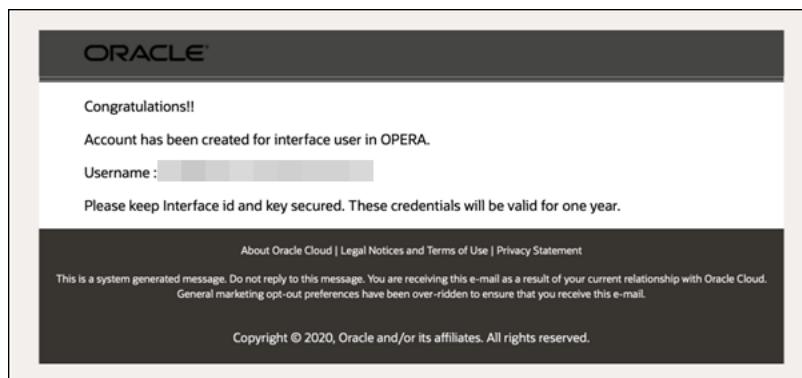
Automatic Management of IFC Credentials feature

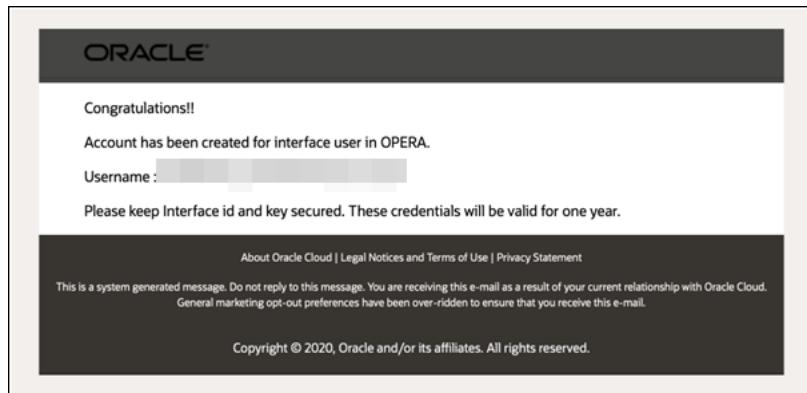
Entering only the Primary user

If backup user credentials are not provided, the IFC Controller will automatically create a backup user. The IFC Controller will also create a separate primary user in the background for password rotation purposes.



An email notification from Oracle <no-reply@operahospitality.com> will inform you of the creation of the primary and backup users.

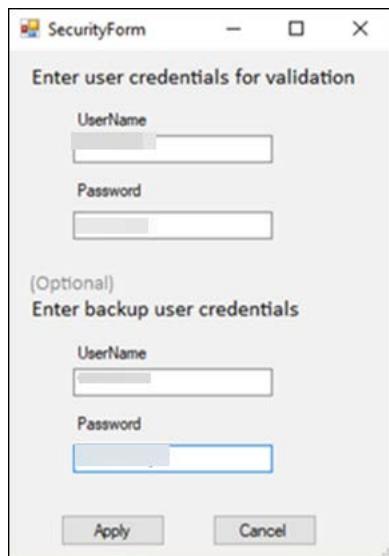




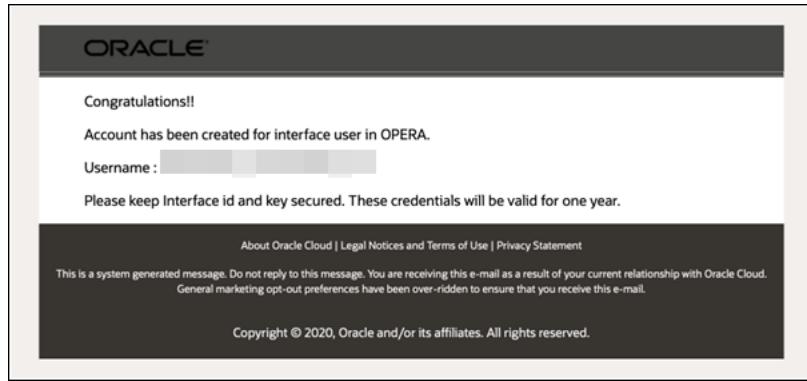
When the primary user's password is set to expire within 35 days, the IFC Controller automatically resets it. During this time, backup credentials are used until the primary credentials are updated.

Entering both Primary and Backup users

You can choose to enter both the primary and backup user credentials. In this scenario, the IFC Controller will create separate primary and backup users in the background for password rotation purposes.



An email notification from Oracle <no-reply@operahospitality.com> will inform you of the creation of the primary and backup users.



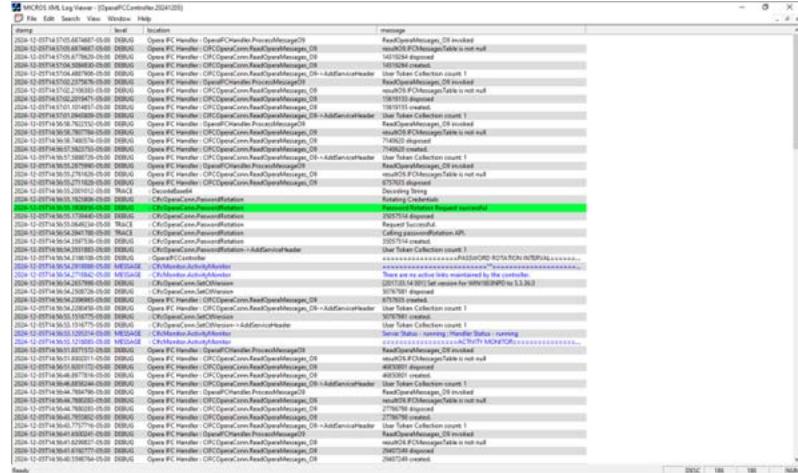
When the primary user's password is set to expire within 35 days, the IFC Controller automatically resets it. Until the primary credentials are updated, the backup user credentials are utilized.

Handling User Lockout Due to Incorrect Password Attempts

If the user is locked due to multiple incorrect password attempts, the credentials must be manually reset in the **Role Manager**. Please refer to the OPERA Cloud user guide here for instructions on accessing the IFC user credentials in the OPERA Cloud Role Manager.

Reviewing Password Rotation in Logs

- To verify if the password rotation request was successful, review the IFC Controller logs.
- Look for the log entry **“Password Rotation Request Successful”** to confirm a successful password rotation.



For Windows Server 2012 R2 install the following Microsoft Patch (KB2919355) and the latest available Windows security patches to support approved Ciphers (e.g. TLS_DHE_RSA_WITH_AES_128_GCM_SHA256, TLS_DHE_RSA_WITH_AES_256_GCM_SHA384)

<https://www.microsoft.com/en-us/download/details.aspx?id=42334>

If other settings were changed, use the Update button to implement those changes. The Restart button can be used to conduct a quick restart of the Opera IFC Controller Service. The View Log and the Test URL buttons should not be used (improvements are forthcoming for these buttons).

Quit or X out of the window.

OPERA IFC Controller Troubleshooting

Troubleshooting of OPERA IFC Controller can be reviewed with the error messages found in the IFC Controller Log file found at the path defined with install.

Some common error scenarios and the error that may be seen:

When there is an incorrect server name or URL endpoint provided for the Controller connection to OPERA. (see Chapter 4, Part 5, point 6 for configuration of endpoint)

WARNING : ClfcOperaConn.CheckWebService System.Net.WebException:
The remote name could not be resolved: 'appserverorOSB.us.hoteltest.com'

```
at System.Net.HttpWebRequest.GetRequestStream(TransportContext& context) at
System.Net.HttpWebRequest.GetRequestStream()

at System.Web.Services.Protocols.SoapHttpClientProtocol.Invoke(String methodName,
Object[] parameters)

at IFCProcessor.ifc8WS.Ifc8ws.getGenericMsg(String inConnectStr, String inResort,
String inProcedure, String inParam1, String inParam2, String inParam3, String inParam4,
String inParam5, String inParam6)

at IFCProcessor.ClfcOperaConn.CheckWebService()
```

With the OPERA Cloud web service in use, and there is no username/pwd or incorrect username/pwd configured for the Controller. (see Chapter 7 for User Credentials)

ERROR Opera IFC Controller : ClfcOperaConn.CheckWebService Soap exception
: FAULT CODE - Server; SOURCE - System.Web.Services; MESSAGE - OSB-386200:
General web service security error

When the TLS settings or protocol levels are not in sync between the IFC machine and OSB/WS machine. (see Chapter 7 for Security Level Settings)

ERROR Opera IFC Controller : ClfcOperaConn.RecheckWebService Error connecting to Web Service with SSL protocol

When the Hotel Code/Resort/Property is not found for the tenant the Controller username is linked with. (see Chapter 4, Part 5, point 8 for Property configuration)

ERROR Opera IFC Controller : ClfcOperaConn.CheckWebService Soap exception

: FAULT CODE - SSD00002; SOURCE - System.Web.Services; **MESSAGE - Error in SSD Resource: User is not authorized for the hotel code in the payload.**

When the specific IFC Machine name, where the Controller is installed, is not configured in OPERA Property Interfaces IFC Machine Configuration. (log in to OPERA UI and check the IFC Machines configuration)

ERROR Opera IFC Controller : CIFCOperaConn.ReadMachineInfo Configuration is missing for machine IFCMACHINE4. Assuming default values.

When there is an issue in the OPERA Database. (verify OPERA DB is up and check on WebServices)

ERROR Opera IFC Controller : ClfcOperaConn.SetRegSettingsset_reg_settings - ORA-06508: PL/SQL: could not find program unit being called

When the start of an IFC8 executable for a specific property interface doesn't come up to full communication handling. (see Chapter 8, Link IFC8 instance to OPERA)

ERROR : ClfcOperaConn.ProcessLinkDesc error processing link desc

"<LinkDescription Date="200326" Time="134420" InterfaceFamily="PB" RequestType="4023" IfcNum="6635" ProcessId="4796" VerNum="9.6.11" FktLogo="SIM" Cryptogram="FidCryptDI|0;97;PSezh8L1TziMBQTOFB0tQA=="/>"; **ERROR : Interface is not active.(6635)**

ERROR: Password Rotation thread stopped

This error typically occurs when the IFC Controller service has stopped. Please follow these steps to resolve the issue:

- Ensure the IFC Controller is updated: Verify that the controller is running the latest version. (Refer to *Chapter 4* for detailed instructions.)
- Restart the Controller: Restart the controller and confirm it is back online. This should resolve the error.

Error 401 (Unauthorized)

This error indicates invalid credentials for the primary or backup user. Please follow these steps to resolve the issue:

- Verify user credentials: Navigate to the User Config section and ensure the credentials are correct to enable password rotation. (See Steps 2 and 3 in *Chapter 7* for details.)
- Reinstall the IFC Controller: Since valid user credentials must be entered during the initial setup, a reinstallation of the controller and activation of the parameter **Automatic Management of IFC Credentials** will be required. Please refer to *Chapter 4* for detailed steps.