Oracle® Hospitality OPERA IFC Controller and Hotel Property Interface (IFC8)

Information and Installation Guide
Release 2.0

December 2021

ORACLE

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Preface

This document describes how Hotel Property Interface (IFC8) works with OPERA Property Management System (PMS) and 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://support.oracle.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 and any associated log files
- 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/

Revision History

Date	Description of Change
January 2019	• Initial publication
March 2020	• Update Hardware Sizing +Links
June 2021	• OPERA Cloud environment and OPERA 5 environment URL format examples added.
December 2021	• Added Microsoft Patch(KB2919355) for Windows Server 2012 R2 pg 13.

1 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.

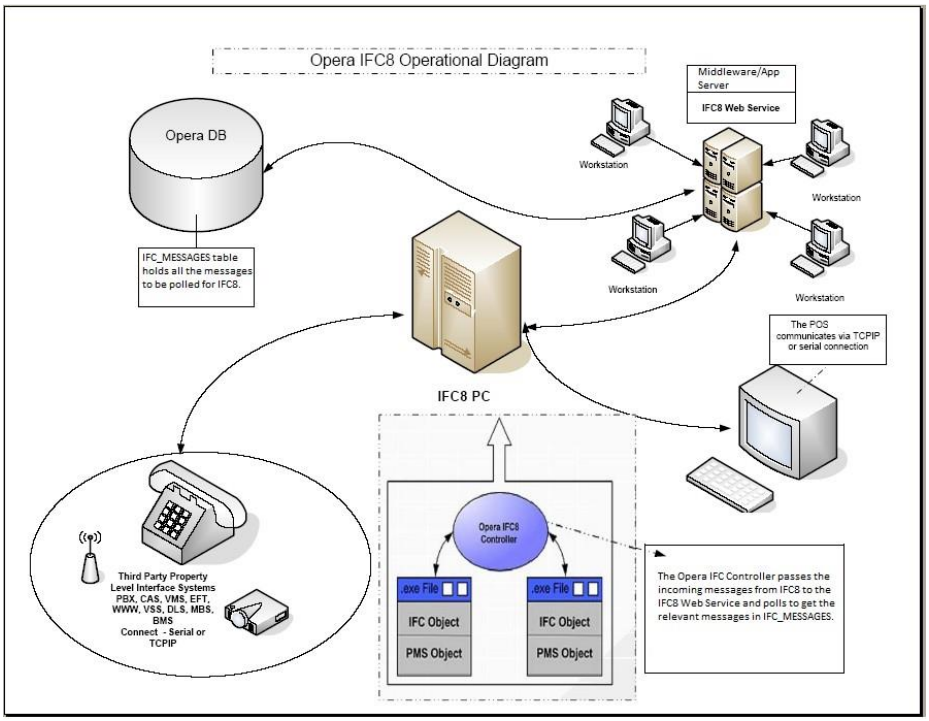


Figure 1 IFC8 Non-Hosted Architecture

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)

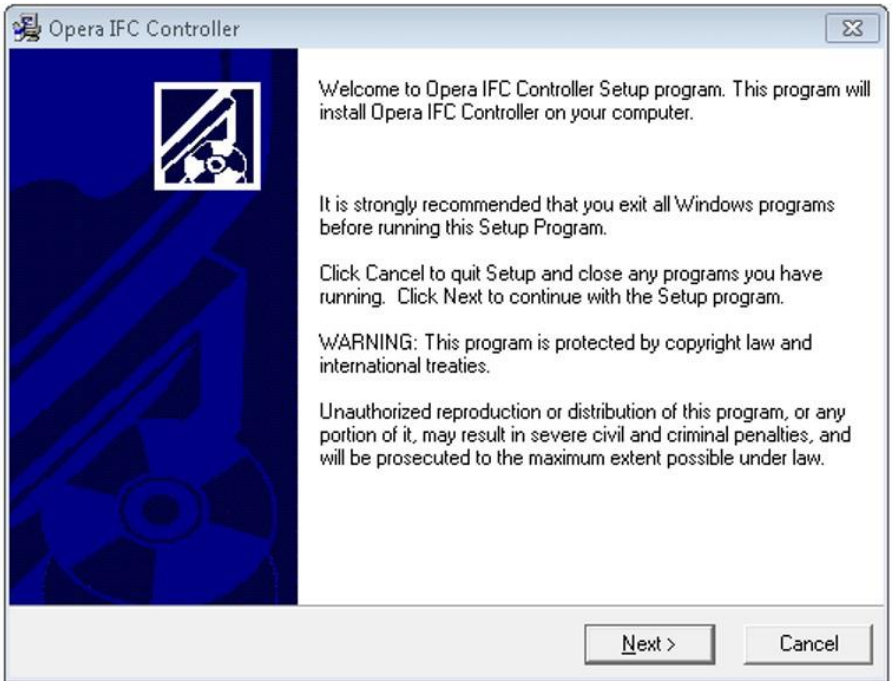
- OPERA V5 internal load balancer certificates are loaded into the SSD OSB keystore.
  - For step by step documentation for this pre-requisite, see *P00548 - OPERA 5.6.0 - SSD Integration – SSD Configuration on OPERA V5 Server - v1.1.docx*

4 Installation of IFC Controller

1. Install the latest OPERA IFC Controller, Version 5.03.00016 or higher for OPERA 5 and TLS support; V5.03.00018 or higher for OPERA Cloud - .NET 4.5 or higher 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.)

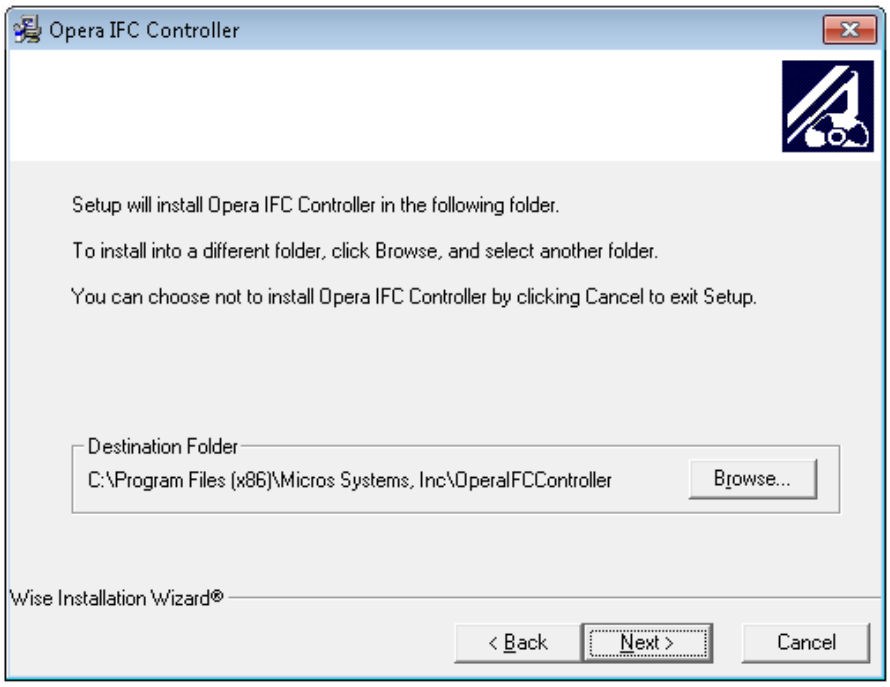
> **Note:** If the IFC controller is already installed, the exe requires time at startup to stop the Service.

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.xsl). These files are needed for viewing the logs. These files, by default, are extracted into the C:\Program Files\Micros Systems, Inc\OperaIFCController 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/Ifc8ws/Ifc8ws

    Example: https://demoenv.com/Operajserv/Ifc8ws/Ifc8ws
  - OPERA Cloud, the OSB Server Name is entered. Installer must edit the Registry setting (OperaIfcWS) 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/OperaIFCServices/IFCInternalService or https://OHSSERVER_Name/OPERA9OSB/opera/OperaIFCServices/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 OperaIfcWS 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/OperaIFCServices/IFCInternalService

    For the OPERA 5 environment:

    https://OHSLOADBL_SERVER/Operajserv/Auth/Ifc8ws/IFCInternalService

    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-premise and hosted version 5 installs.

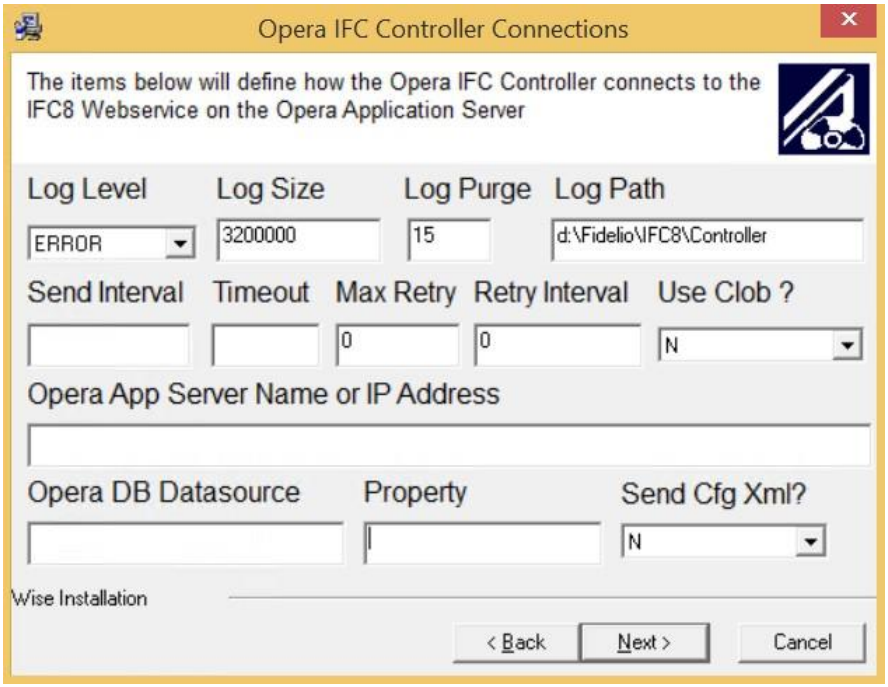
> **Note:** In the case of an OPERA Cloud installation, this variable can be kept with the default value.

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

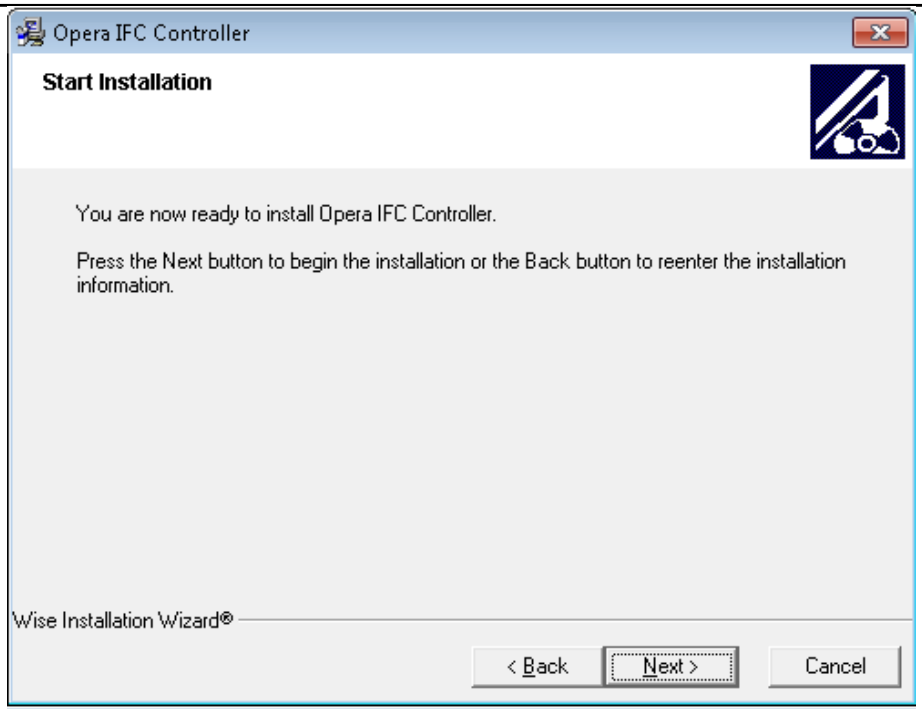
Example: jdbc/operaoperads

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

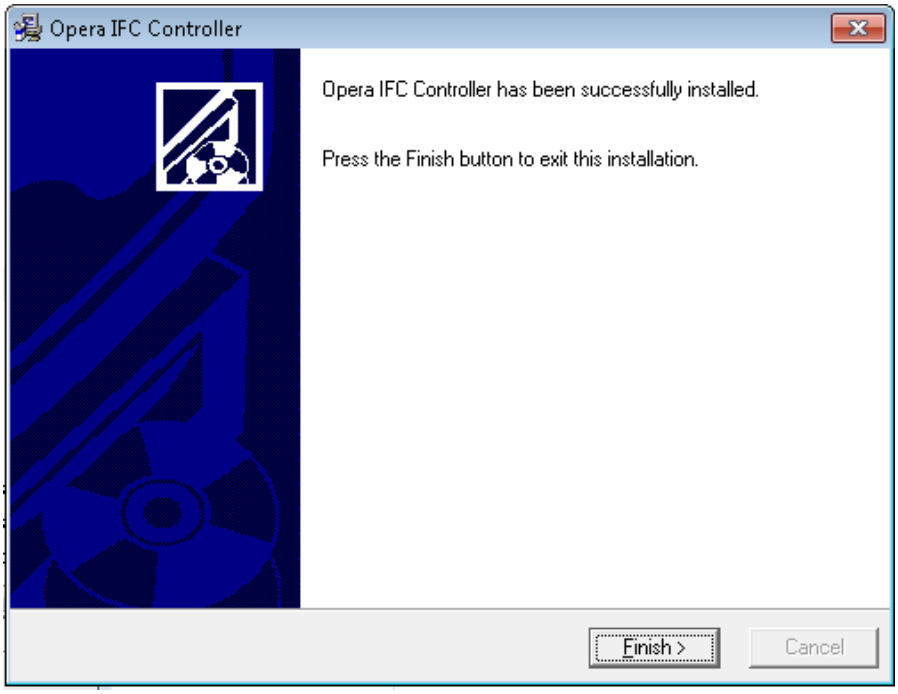
- **Property**: (Hotel Code/Resort) Enter the property that will be running IFC. This is used to initialize any properties in this chain. This variable should be entered in all caps.
- **Send Cfg Xml** This is used to allow the Controller to send the existing config.xml to OPERA when IFC8 is started.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



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

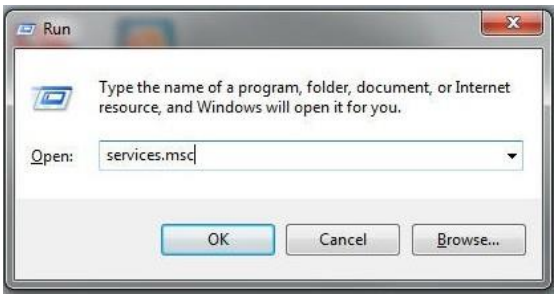


8. When installation is complete, click **Finish**.

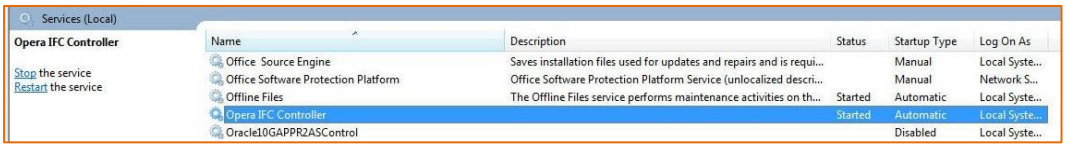


Verify the Service is Running

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.



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

5 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.

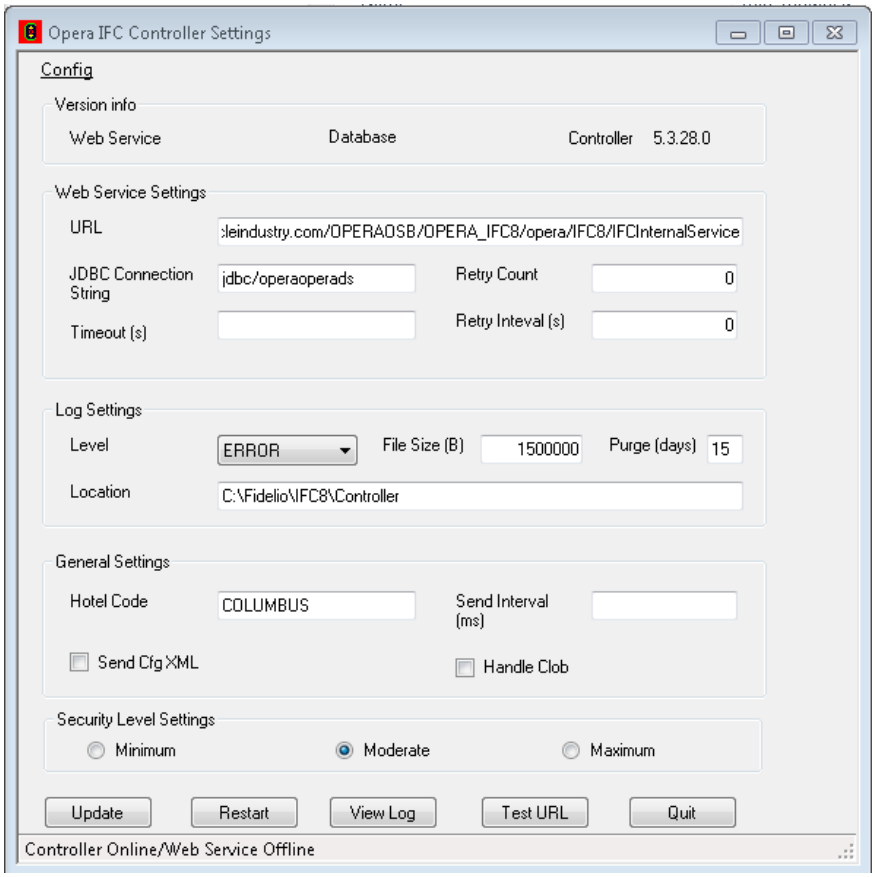
Adding Service Accounts

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.

7 Configuring IFC Controller for OPERA Cloud or SSD Services Enabled Environments

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

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

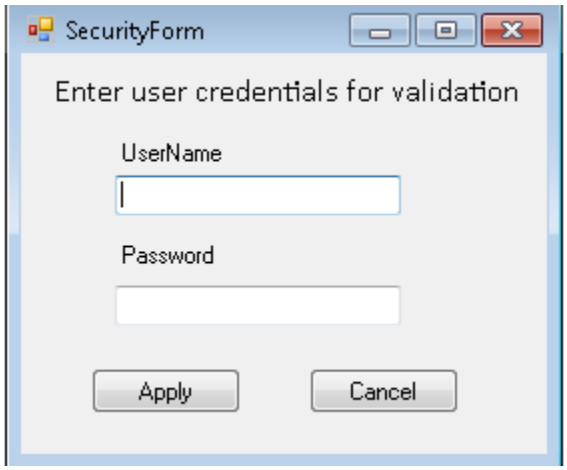


2. Go to **Config > User Credentials**.

3. Enter the **UserName** and **Password** setup used previously in Role Management/OIM.
4. Click **Apply**.

   Any existing data will be overwritten.

Note: This cannot be used to view existing credentials.



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.

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).

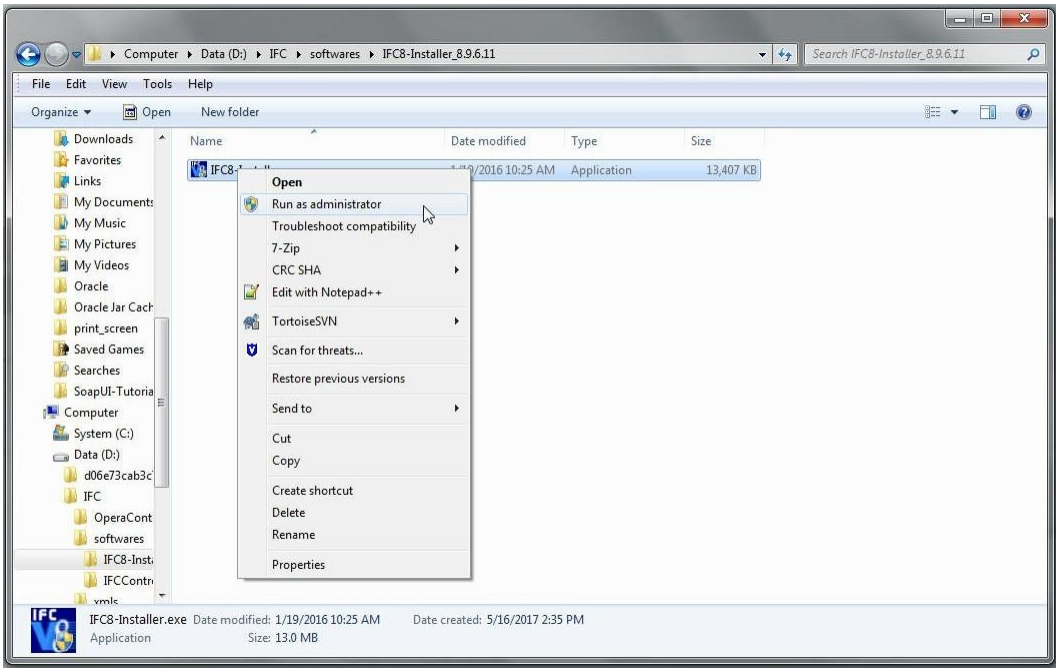
Quit or X out of the window.

8 IFC8 Installation

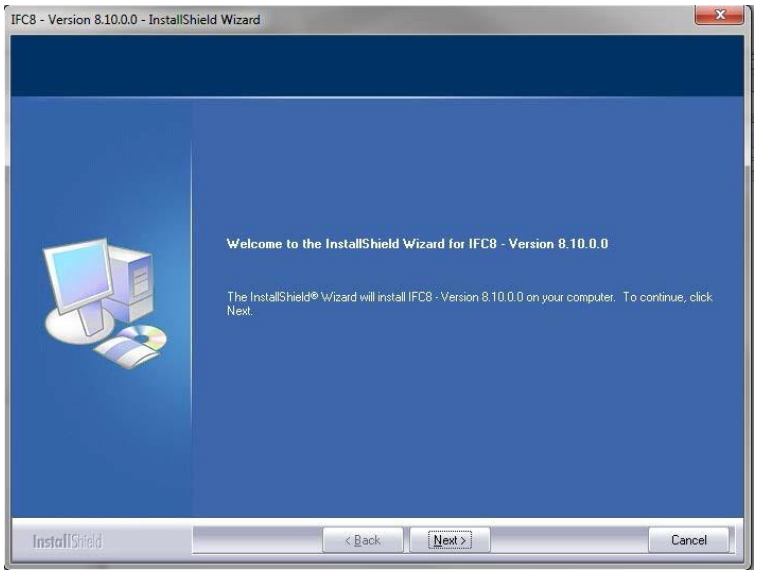
Installation

Screenshots depicted here are for an older IFC8 version but reflective of general installation. Please find the specific IFC8 version information in the Hotel Property Interface section on https://docs.oracle.com/en/industries/hospitality/hotels.html and follow the Installation Guide.

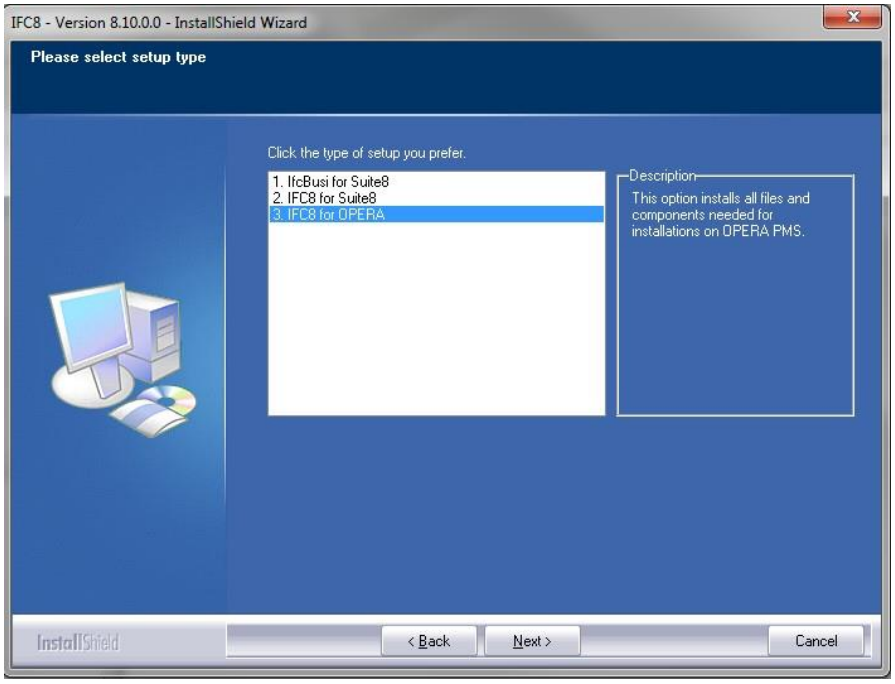
1. Right click on the **Installation** file and select **Run as Administrator**.



2. The IFC8 installation wizard is launched. Click **Next**.



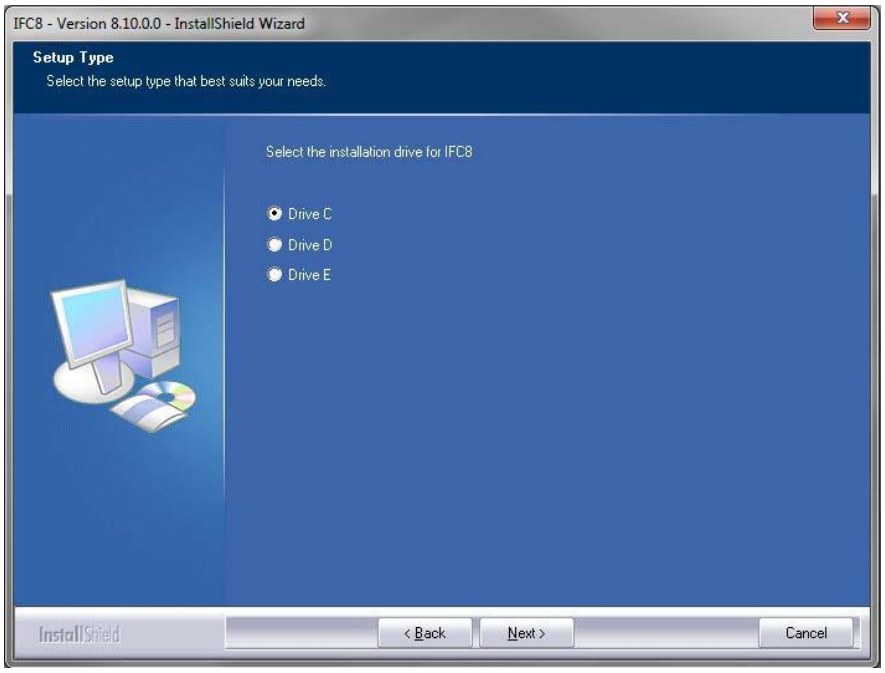
3. Select option 3: **IFC8 for OPERA**.



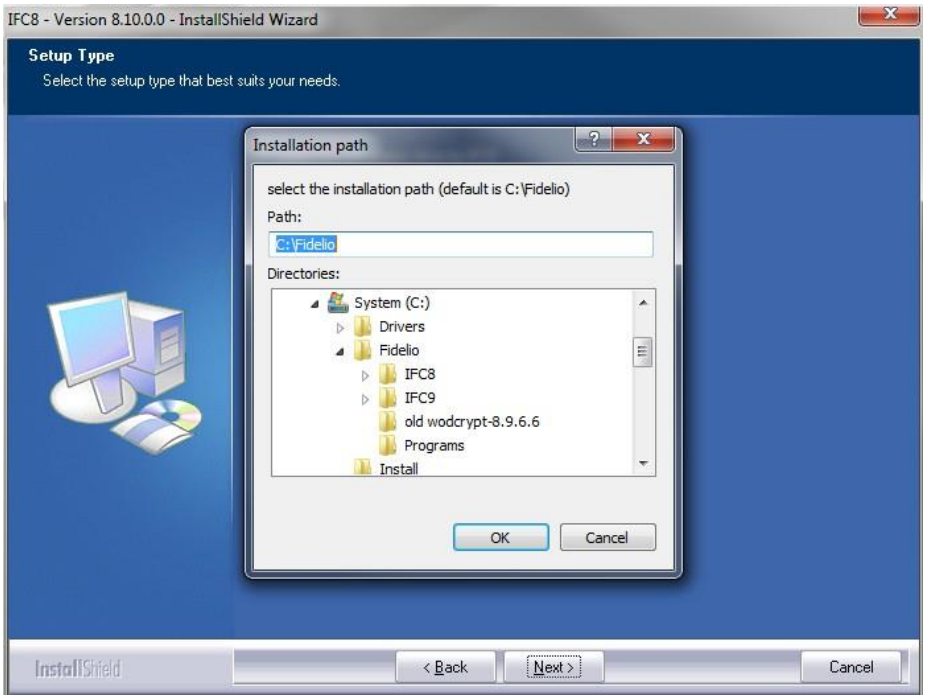
4. Click **Next.**

5. Select the Drive you wish to install IFC8 and click **Next.**

> **Note**: The default drive is Drive C.

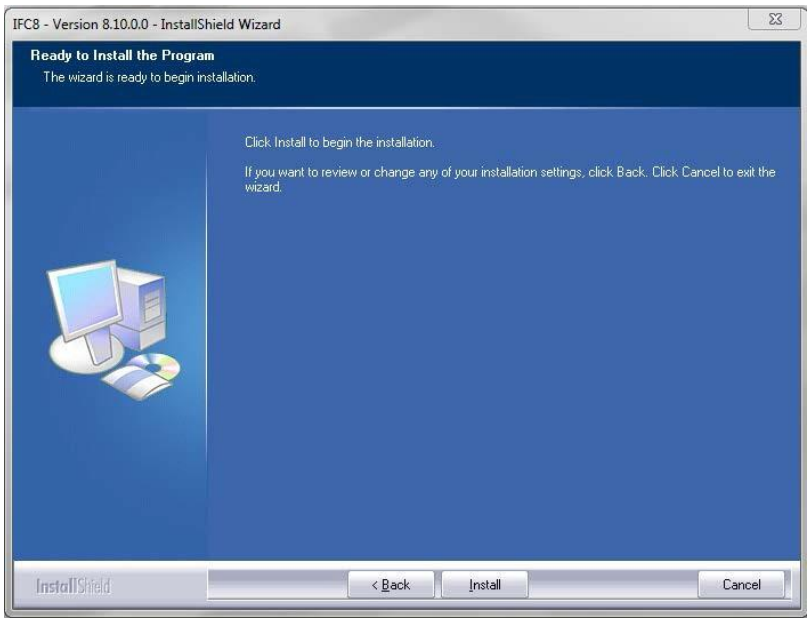


6. The Installation Path window appears. Click **OK.**

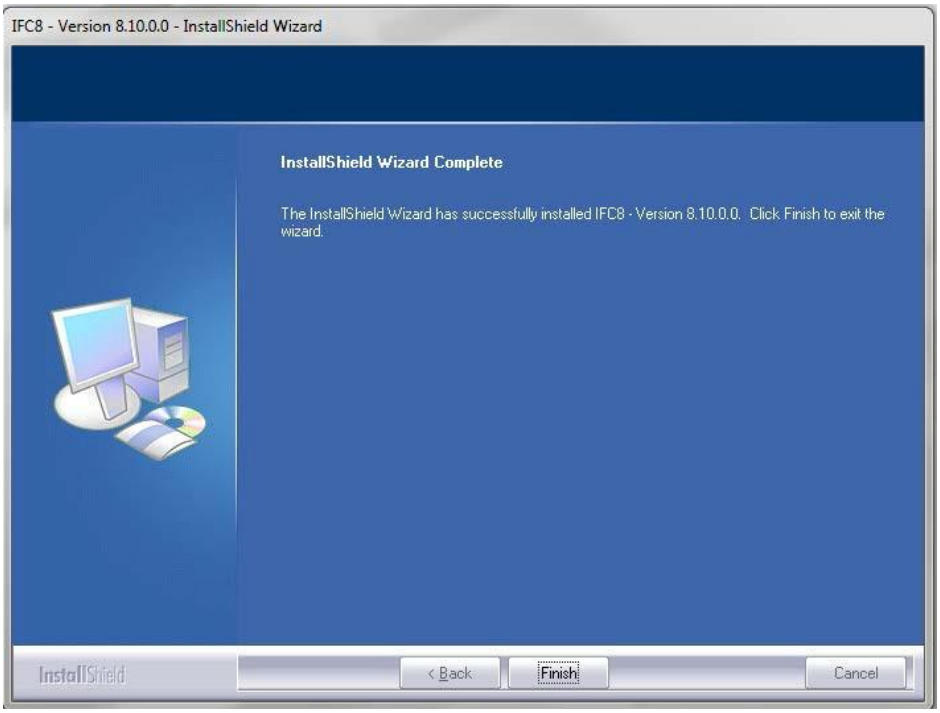


This will install files to c:\fidelio\programs & c:\fidelio\ifc8…….

7. Click **Install** to begin the installation.

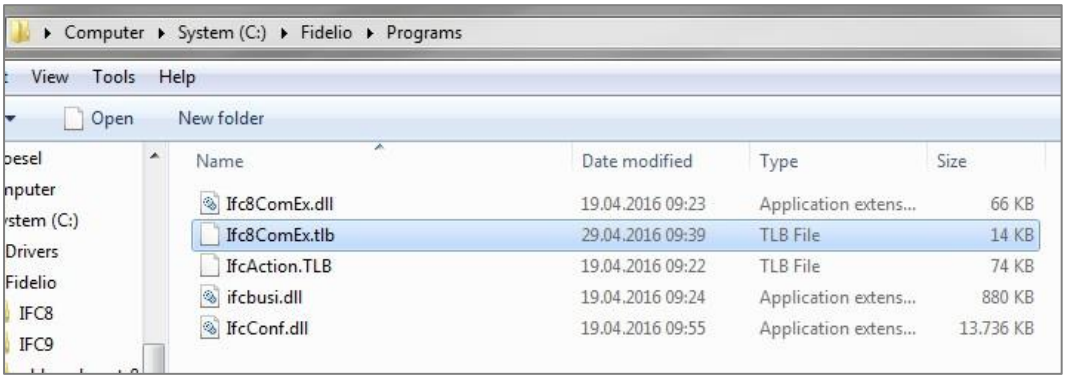


8. When the installation is complete, click **Finish** to close the Installation Wizard.

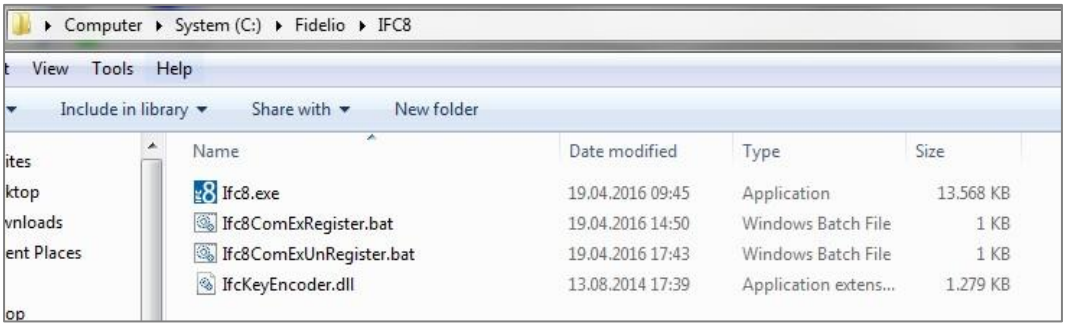


Files are copied to C:\fidelio\programs.

Ensure that IFC8ComEx.tlb is available. If not, check that your .NET 4.x installation is valid.

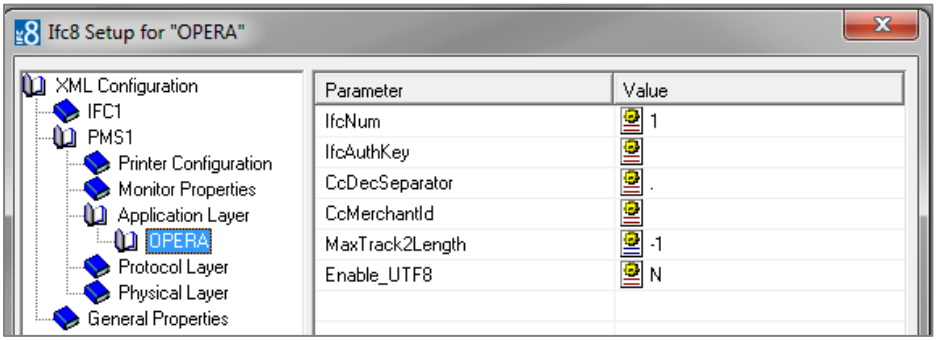


The files have been copied to c:\fidelio\ifc8.



Link IFC8 instance to OPERA IFC Config

1. Open an IFCConfig.xml file with IFC8.exe
2. Navigate to **Properties > Configuration**.
3. Enter **User Credentials** for the machine running IFC8. Domain can be left blank.
4. Go to **PMS1 tree > Application Layer > OPERA**.

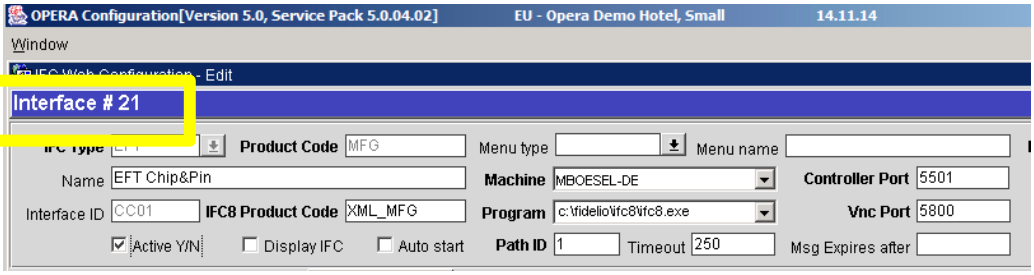


5. Enter the previously created Interface Number from OPERA against the parameter "IfcNum."

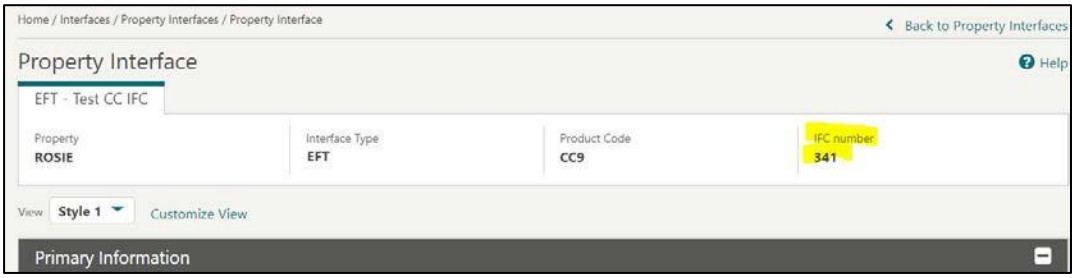
> **Note:** For information on creating a new property interface, visit the Oracle Help Center website and see the *OPERA Property Management User Guide*. *https://docs.oracle.com/cd/E98457_01/index.html*

You can find the related IFC number in the OPERA IFC Configuration of the related IFC:

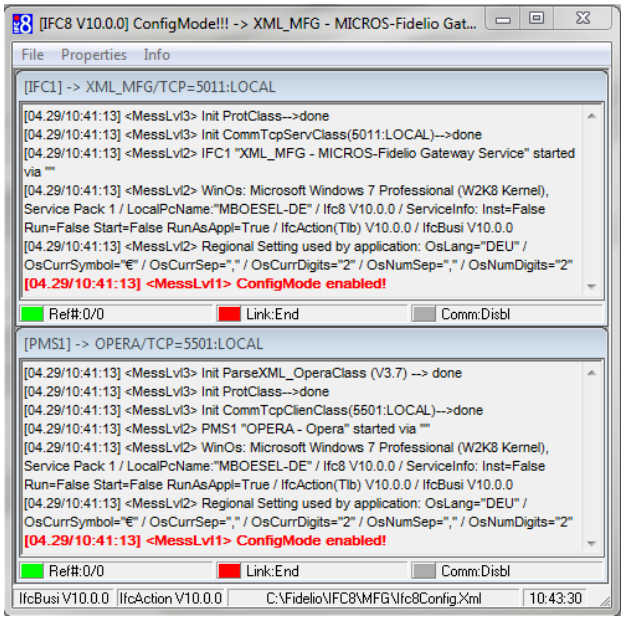
For OPERA V5



OPERA Cloud

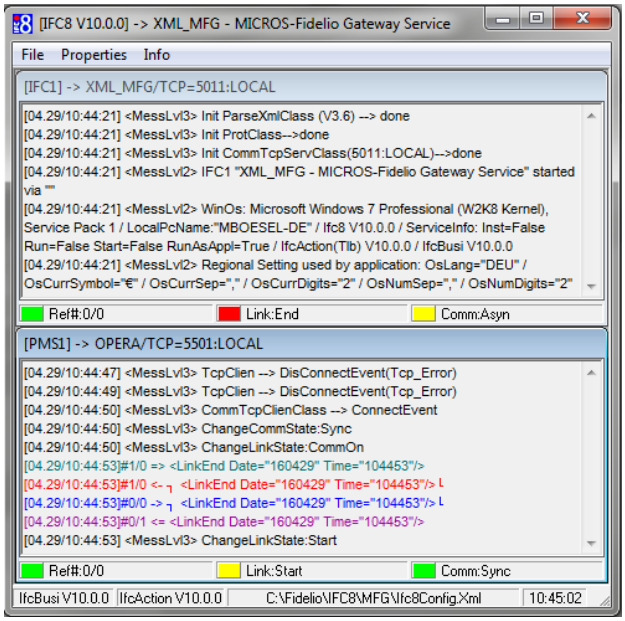


6. Click **Enter** and **Apply**. IFC8 will reinitialize.
7. Click the Red **Save** button to save the Config file.
8. Click **OK** to close the IFC8 Config file.
9. Click **Properties**.
10. Uncheck "Enable Config Mode" if it is enabled.



IFC8 connection status:

- **Green:** Connection OK (connected)
- **Yellow:** awaiting connection (listening mode)
- **Red:** No connection



In the above example, the IFC status is yellow, indicating it is waiting for OPG to connect to the defined port.

The PMS status is green as the connection to OPERA IFC Controller has been established.

Middle links will change to green once all connections/communications are established.

9 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 :CIfcOperaConn.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.CIfcOperaConn.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 : CIfcOperaConn.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 : CIfcOperaConn.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 : CIfcOperaConn.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 : CIfcOperaConn.SetRegSettings set_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 : CIfcOperaConn.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)**