

Oracle Hospitality Payment Interface and Token Proxy Service Deployment Guide



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Preface

Purpose

This document describes how to organize environments for an installation of the Oracle Payment Interface (OPI) across OPERA Property Management System (PMS) Single Property, OPERA PMS Multi-Property, OPERA V5 SAAS (Oracle Hosted) and OPERA Cloud. Using this guide, you can determine the number of machines and OPI instances needed to process both financial and token transactions.

This document also describes how you can install the Token Proxy Service (TPS) service, web service, configuration web portal and database on one server or on separate servers that means customer can have one server for DB - Oracle or MySQL, one server for web portal - WebLogic or Tomcat and multiple TPS servers for self-hosted TPS.

Audience

This document is intended for customers who need to deploy OPI and TPS.

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
- 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 1-1 Revision History

Date	Description
July 2020	<ul style="list-style-type: none">• Initial Publication
October 2023	<ul style="list-style-type: none">• Removed the MySQL 5.6 version across the document as the OPI installer no longer supports

1

OPI and TPS Overview

Oracle Payment Interface (OPI) is a payment card-processing interface that integrates with the OPERA PMS Single Property, OPERA PMS Multi-Property, OPERA V5 SAAS (Oracle Hosted) and OPERA Cloud, Suite 8 (PMS) and SPMS (Cruise). It defines a standard interface that partner payment service providers can implement to provide credit card processing functionality to Oracle Hospitality OPERA, Suite 8 (PMS) and SPMS (Cruise).

The Token Proxy Service is designed to provide token exchange proxy service for hosted applications. It is a proxy interface that works with your application to communicate with payment service providers (PSP), on whom it relies to provide the actual token functionality. It connects to PSPs via internet or virtual private network (VPN). The firewall should be configured to allow connection from OPERA to TPS and from TPS to PSP for token exchange.

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OPI Deployment

For hotel deployment, OPI can be installed on existing machine which has sufficient resources to accommodate OPI.

The following lists the minimum specification for OPI:

- **Processor:** Dual core and 64bit
- **Available Disk space:** 6 GB free minimum
- **Available memory:** 4 GB RAM minimum

Installing All-In-One

With an all-in-one installation, you can install the OPI service, OPI utility service, OPI configuration tool and database on one server.

OPI Config Service

Deals with connections from applications used to configure OPI, such as OPI configuration Tool and Wizard.

OPI Service

- The OPI Service is the main OPI Application service, listening for connections to OPI from PMS and making connections to PSP.
- Always restart the OPI Service after creating or changing any configuration.

OPI Utility Service

The OPI Utility Service handles any configuration values that are encrypted, such as passwords and passphrases.

Database

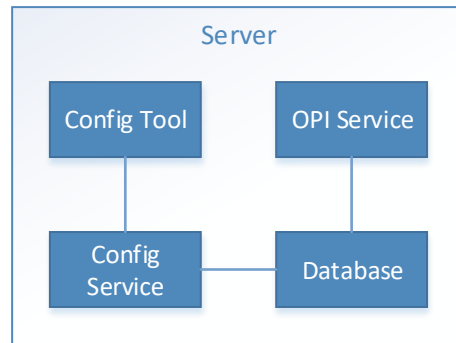
The Oracle Payment Interface Installer release 20.2 supports the following database connections:

- MySQL Database 5.7 / 8.0
- Oracle Database 11g / 12c / 19c

OPI Config Tool

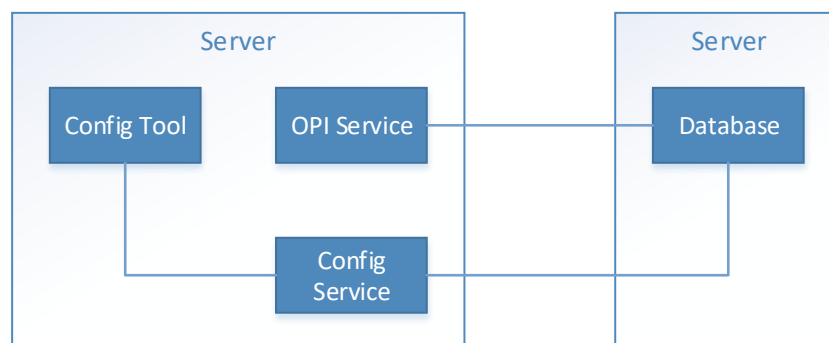
The Configuration Tool includes a configuration wizard and full configuration tool.

- **LaunchWizard.bat** – contains the most used settings that should be sufficient to allow configuration of a basic working merchant configuration.
- **LaunchConfiguration.bat** – contains some additional advanced settings that may be required in certain installations.



Installing Application Components and Database on Separate Servers

You can install OPI service, OPI utility service, and OPI configuration tool on one physical server and install the database on a separate server.



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TPS Deployment

Installing All-In-One

With an all-in-one installation, you can install the TPS service, web service, configuration web portal and database on one server.

Components

Token Proxy Service has three main components:

- Database
- Token Proxy Web Portal
- Token Proxy Service

The Database

- Supports Oracle 11g /12c / 19c database.
- The database stores the configuration and audit log from the Web Portal.
- The Token Proxy Service requires read-only access to the database. If required, you can configure a different Token Proxy Service database user with less privileges.
- The Web Portal requires a database user with privileges to make changes within the Database.

The Web Portal

- The Web Portal is used to configure the settings used by the Token Proxy Service.
- The Web Portal is a web application supplied in a WAR file suitable for hosting in WebLogic or Tomcat. It relies on the selected web server to store some of its configuration, such as the database connection string (datasource), and to provide a trusted SSL certificate for connections from users accessing the configuration web portal.

Token Proxy Service

The Token Proxy standalone application runs automatically as a service.

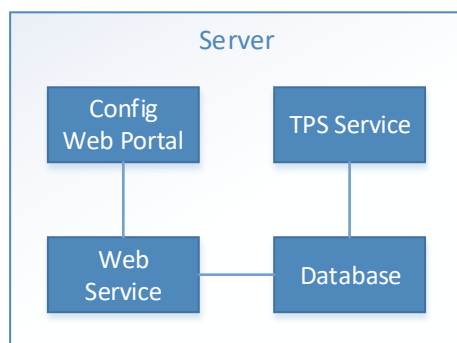
Connections

Connections from OPERA

- The application creates a Listener to monitor a TCP port for XML messages posted over HTTPS. The default Listener port is 443, but it can be set to a custom port number via the Token Proxy Web Portal. This Listener must be exposed to the client (for example, OPERA systems).
- The Listener manages its own use of the certificates (TLS1.2) provided by the data center team, so a firewall or load balancer (if present) must not offer any form of HTTPS-to-HTTP bridging functionality. Instead, the connection must be passed directly to the Token Proxy Service.
- The certificates provided must be installed on all servers running the Token Proxy Service in the event the service is installed on multiple machines for load balance or failover. In case the certificate is deployed on the load balancer, a certificate should also be deployed on the TPS app server to establish HTTPS connection from the load balancer to the TPS server. It is highly recommended to use CA signed certificates.

Connections to PSPs (Payment Service Providers)

- The service also makes outgoing connections to PSPs.
- The outgoing connection is to a URL specified by the PSP and the host or port (and optionally a path) is specified by the PSP.
- The outgoing connection can be over the internet or over VPN, but it must use HTTPS with TLS1.2 (but not higher).



Installing Application Components and Database on Separate Servers

You can install TPS service, web service and configuration web portal and database on separate servers.

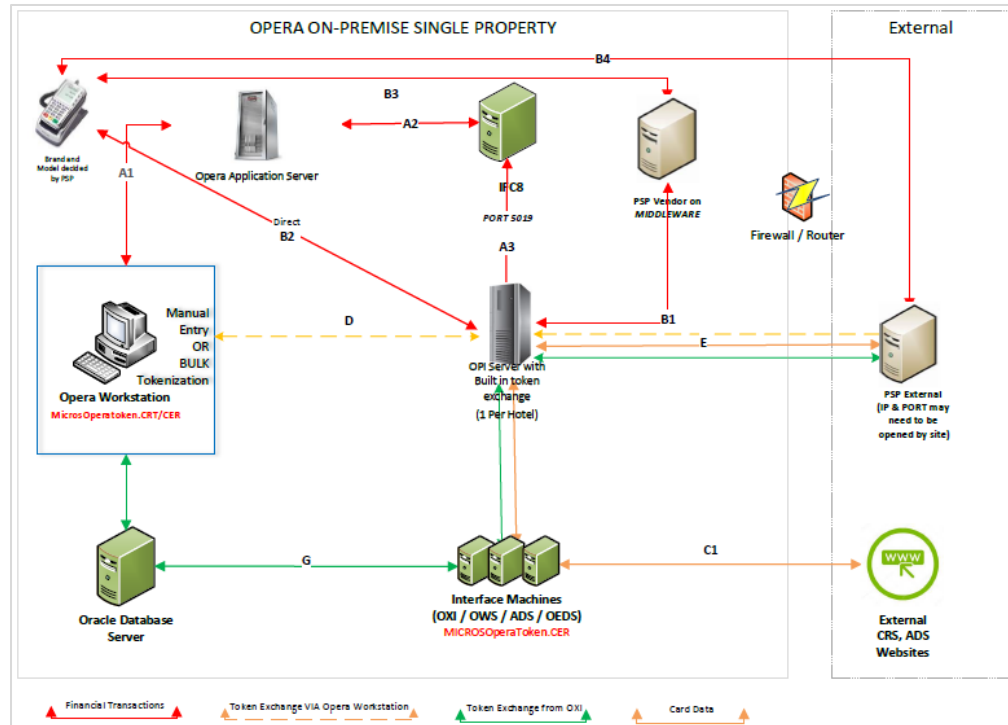


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Customer Deployment Scenarios

OPERA On-Premise Single Property

- OPERA application components and database installed in hotel network, OPI will be installed in the same network.
- Install one OPI instance to process both financial transaction and token transaction.
- OXI/OEDS will communicate with OPI.
- IFC8 will be used for communication between OPERA and OPI.



Transactional flow:

A. Financial Transaction (e.g. Pre-Auth, top up auth, settlements etc.) or (GetToken requests that requires the collection of card data from payment terminal).

1. Opera workstation originates the request to OPERA PMS environment; the response follows the same path in reverse direction.
2. Financial Transaction request or GetToken request routed from Opera to IFC8 via OperaIFCController port 5001 on IFC PC
3. Financial Transaction requests & GetToken requests routed from IFC8 to OPI via Port 5019 on IFC Server (if available, if not available a different port can be assigned)

B. EMV Card present Transaction

1. OPI can either send the request to PSP Middleware via IP & Port Provided by PSP
2. Or OPI can send the request to PSP payment terminal directly. Payment terminal will light up to collect card data.
3. Transaction between PSP Middleware server and Payment Terminal
4. Transaction is sent from Payment terminal to PSP Host

C. Reservation initiated from Central Reservation System (CRS) e.g. TripAdvisor, ORS, Expedia

1. Card data sent to OXI/OWS/ADS/OEDS for Token exchange

D. Card Data or Token sent from Opera Client Workstation to OPI for GetToken/GetPAN ONLY request. Includes bulk tokenization. Response follows the same path in reverse direction

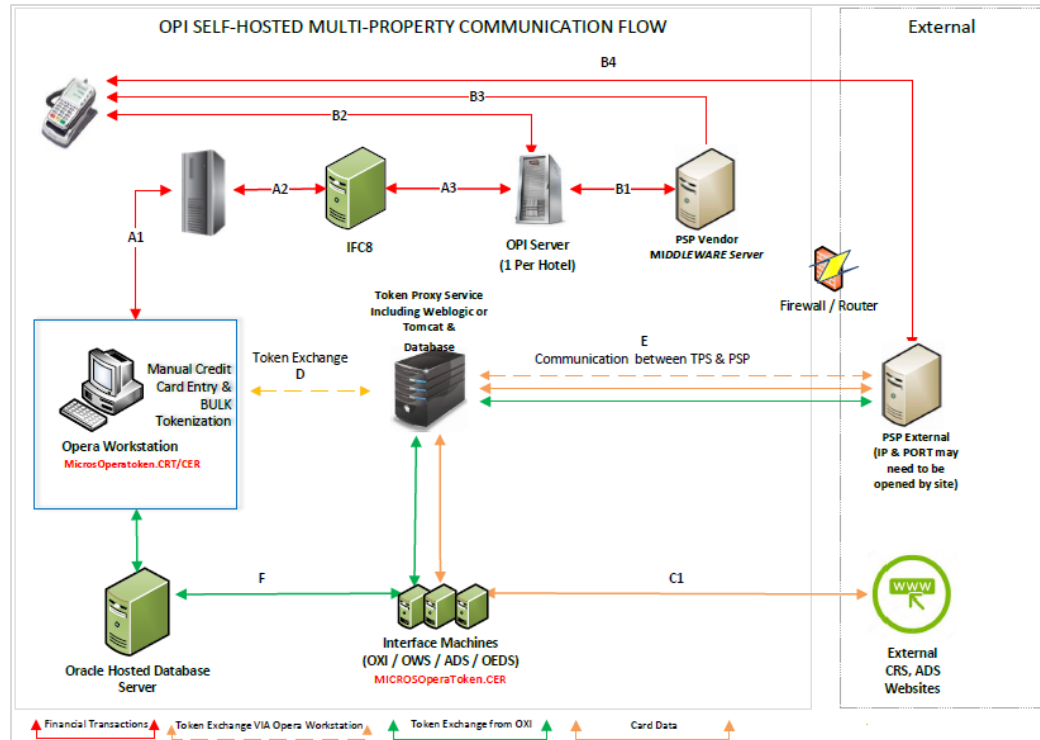
E. Communication between OPI & PSP

F. Generated Token received from PSP/OPI Delivered to Opera Database from VIA OXI Machine(s).

G. Token information (GetPAN if CRS not tokenized) exchange during reservation update made in OPERA.

Self-Hosted Multi-Property

- OPERA application components and database installed in hotel network.
- Install one OPI instance per property.
- Install TPS to serve token exchange requests for all the properties.
- OXI/OEDS will communicate with TPS.
- IFC8 (need to be installed unless it is currently in place) will be used for communication between OPERA and OPI.



Transactional flow:

A. Financial Transaction (e.g. Pre-Auth, top up auth, settlements etc.) or (GetToken requests that requires the collection of card data from payment terminal).

1. Opera workstation originates the request to Opera environment; the response follows the same path in reverse direction.
2. Financial Transaction request or GetToken request routed from Opera to IFC8 via OperalFCController port 5001 on IFC PC
3. Financial Transaction requests & GetToken requests routed from IFC8 to OPI via Port 5019 on IFC Server (if available. If not available a different port can be assigned)

B. EMV Card present Transaction

1. OPI can either send the request to PSP Middleware via IP & Port Provided by PSP
2. Or OPI can send the request to PSP payment terminal directly. Payment terminal will light up to collect card data.
3. Transaction between PSP Middleware server and Payment Terminal
4. Transaction is sent from Payment terminal to PSP Host

C. Reservation initiated from Central Reservation System (CRS) e.g. TripAdvisor, ORS, Expedia

1. Card data sent to OXI/OWS/ADS/OEDS for Token exchange

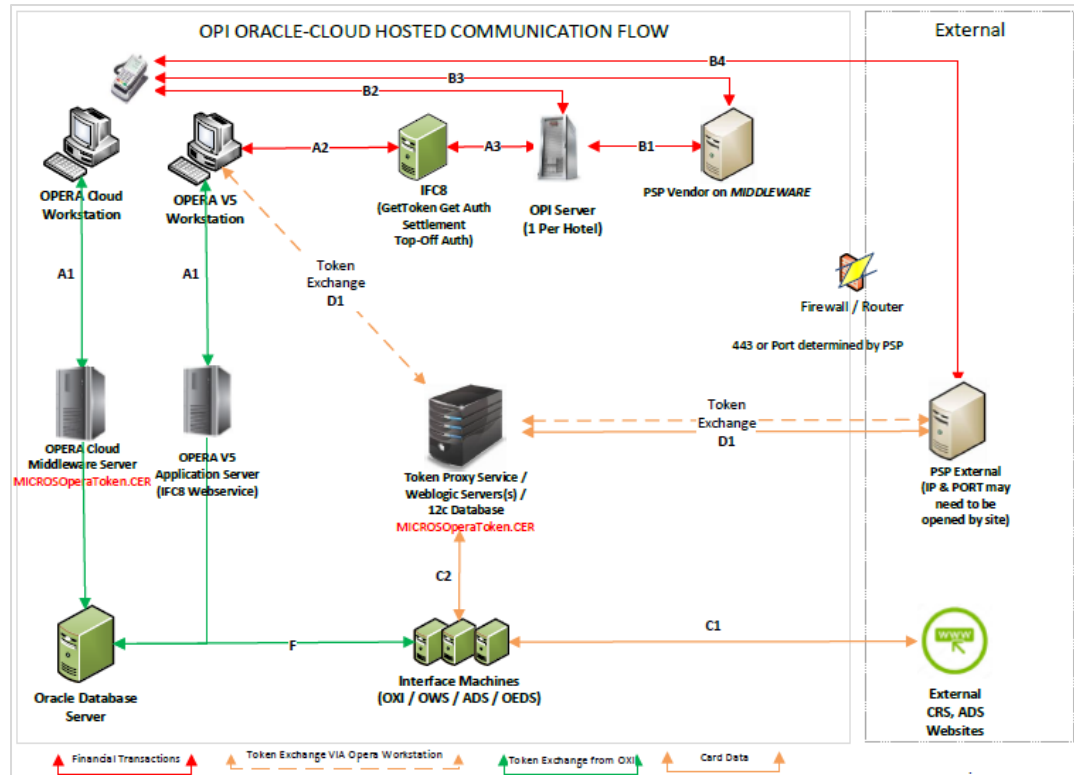
D. Card Data or Token sent from Opera Client Workstation to TPS for GetToken/GetPAN ONLY request. Includes bulk tokenization. Response follows the same path in reverse direction

E. Communication between TPS & PSP

F. Token information (GetPAN if CRS not tokenized) exchange during reservation update made in opera

Oracle-Cloud Hosted Multi-Property

- Token Proxy Service is deployed in Oracle Datacenter.
- OPERA application components and database installed in Oracle Datacenter.
- Install one OPI instance per property.
- OXI/OEDS will communicate with TPS.
- IFC8 (on property) will be used for communication between OPERA and OPI.



Transactional flow:

A. Financial Transaction (e.g. Pre-Auth, top up auth, settlements etc) or (GetToken requests that requires the collection of card data from payment terminal).

1. Opera workstation originates the request to Hosted Opera environment; the response follows the same path in reverse direction.
2. Financial Transaction request or GetToken request routed from Hosted Opera to IFC8 via OperalFCController port 5001 on IFC PC
3. Financial Transaction requests & GetToken requests routed from IFC8 to OPI via Port 5019 on IFC Server (if available. If not available a different port can be assigned)

B. EMV Card present Transaction

1. OPI can either send the request to PSP Middleware via IP & Port Provided by PSP
2. Or OPI can send the request to PSP payment terminal directly. Payment terminal will light up to collect card data.
3. Transaction between PSP Middleware server and Payment Terminal
4. Transaction is sent from Payment terminal to PSP Host

C. Reservation initiated from Central Reservation System (CRS) e.g. TripAdvisor, ORS, Expedia

1. Card data sent to OXI/OVS/ADS/OEDS for Token exchange
2. OXI Servers send Card data to Token Exchange Service (Token URL & Port extracted from Opera configuration) Token Exchange response from PSP Host.

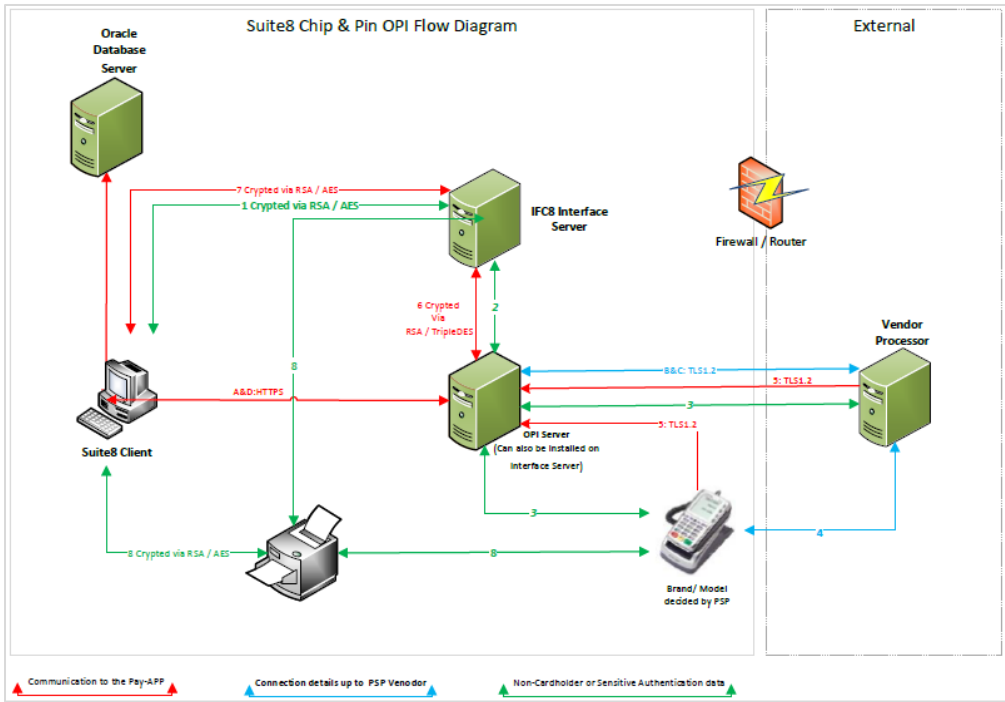
D. Card Data or Token sent from Opera Client Workstation to TPS for GetToken/GetPAN ONLY request. Includes bulk tokenization. Response follows the same path in reverse direction

E. Communication between TPS & PSP

F. Token information (GetPAN if CRS not tokenized) exchange during reservation update made in opera.

Suite8 Chip and Pin OPI

- Suite8 application components and database installed in hotel network, OPI will be installed in the same network.
- Install one OPI instance to process both financial transaction and token transaction.
- IFC8 will be used for communication between Suite8 and OPI.



Transactional flow:

1. Suite8 sends only payment request to interface. No card data.
2. Interface forwards payment request to Payment Gateway Client
3. Payment Gateway Client either forward request to Pin Pad via TSL 1.2 or forward request to PSP middleware
4. Vendor will process request including prompting for card on Pin pad and communication with acquirer.
5. Either Pin Pad or PSP middleware send response to Payment Gateway Client via TSL 1.2
6. Payment Gateway Client provides final response to Suite8
7. Suite8 saves transaction number / auth code, card token and last 4 digits of PAN received from vendor
8. Optional. Suite8 / Interface prints CC receipt provided by Vendor, Mask CC data up to vendor

Process Get Token for entered PAN:

- A: Optional: Suite8 client sends PAN to Payment Gateway Client Token Proxy part to request token
- B: Payment Gateway connects to Vendor requesting token.
- C: Payment Gateway receives token & last 4 PAN digits from vendor
- D: Payment Gateway sends back response with token to Suite8 client. Suite8 saves token, last 4 digits of PAN encrypted in DB