Oracle® Hospitality OPERA Exchange Interface

Inventory XML Specifications

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ORACLE

Contents

Preface

This document describes the Inventory XML schema layout and data elements used for the OPERA Xchange Interface. It further explains the mapping of the XML data elements into the OPERA application and the generic business rules that are applied.

In the following document we will refer to the third party system as 'external system'. Third Party Systems can be central reservation systems, property management systems, or others. The OPERA applications will be referred to as OPERA. Please note that OPERA can function as single property OPERA, multi property OPERA, or as central system OPERA. The respective differences between these OPERA flavors will be addressed where necessary.

The specifications in this document are based on the XML schema version 2.0, compatible with OPERA version 2.5 onwards.

Audience

This document is intended for those developing custom applications that interact with Inventory functionality in OPERA through OXI.

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/

1 Inventory Object Functional Specifications

Inventory from External System to OPERA

Options and restrictions for inventory from external system to OPERA

- Sell limits are supported by house, room type, room class, rate code, rate class, rate category, and the combination of room type and rate code.
- Out of order is supported on Room Type level.

The following data entities affecting inventory can be sent to OPERA when a change occurs:

- Rooms Out of Order/ Per Day:
  - Number of rooms that cannot be sold for certain reasons.
  - The message type is OOO.
  - Contents of the XML message: The RoomCriteria tag in the XML message contains ROOMTYPE; the RoomType tag contains the room type; the RoomCount tag contains the number of out of orders for this room type.
- Sell limits:
  - The message type is OVER for sell limits on the house level and KATOVER for all other sell limits.
  - Sell limits on the house per day. Contents of the XML message: The RoomCriteria tag in the XML message must default to ROOMTYPE; the HouseCount tag contains the physical count of all rooms in the hotel; the HouseOverbook tag contains the house sell limit.
  - Sell limits by room class per day. Contents of the XML message: The RoomCriteria tag in the XML message contains ROOMCLASS; the roomType tag within the Inventories collection contains the room class; RoomCount contains the number of rooms to sell for this room class; RoomTypeOverbook contains the overbooking level for this room class.
  - Sell limits by room type per day. Contents of the XML message: The RoomCriteria tag in the XML message contains ROOMTYPE; the RoomType tag within the Inventories collection contains the room type; RoomCount contains the number of rooms to sell for this room type; RoomTypeOverbook contains the overbooking level for this room type.
  - Sell limits by rate class per day. Contents of the XML message: The RoomCriteria tag in the XML message must default to ROOMTYPE; the HouseOverbook tag contains the sell limit for the rate class; the RateClass tag contains the rate class.
    - Sell limits by rate category per day. Contents of the XML message: the roomCriteria tag in the XML message must default to ROOMTYPE; the HouseOverbook tag contains the sell limit for the rate category; the RateCategory tag contains the rate category.
    - Sell limits by rate code per day. Contents of the XML message: the roomCriteria tag in the XML message must default to ROOMTYPE; the

HouseOverbook tag contains the sell limit for the rate code; the RateCode tag contains the rate code.

  - Sell limits for combination room type/rate code (or rate category) per day. Contents of the XML message: the roomCriteria tag in the XML message must default to ROOMTYPE; a RateCode (RateCategory) tag in the message must be populated; the RoomType tag contains the room type; the roomTypeOverbook tag contains the sell limit for the rate code/room type combination.
  - If sell limits are changed the update will delete current value and insert changed values.
  - If OPERA and external system update at the same time, the lowest value will be insert and updated.

- Number of physical rooms has changed:
  - If for some reason the hotel configuration changes and rooms are added or deleted, the external system has to notify OPERA of this in a KATOVER message containing the new room count.

Inventory from OPERA to External System

OPERA will send sell limit messages and out of order messages if it serves as PMS.

Options and restrictions for inventory from OPERA to the external system

- Update will take place on every change in OPERA.
- Sell limits are supported by house, room type, room class, rate code, rate class, rate category, and the combination of room type and rate code.
- Out of order is supported on room type level.
- OXI does not support a combination of room class and room type in the same message. Such a setting in OPERA will not trigger a message to the external system.

The following data entities affecting inventory will be sent to the external system when a change occurs:

- Rooms Out of Order/ per day:
  - Number of rooms that cannot be sold for certain reasons will be uploaded to the external system.
  - The message type is OOO.
  - Contents of the XML message: the roomCriteria tag in the XML message contains ROOMTYPE; the roomType tag contains the room type; the roomCount tag contains the number of out of orders for this roomtype.
- **Sell limits:**
  - The message type is OVER for sell limits on the house level and KATOVER for all other sell limits.
  - Sell limits on the house per day. Contents of the XML message: the roomCriteria tag in the XML message must default to ROOMTYPE; the HouseCount tag contains the physical count of all rooms in the hotel; the HouseOverbook tag contains the house sell limit.

- Sell limits by room class per day. Contents of the XML message: the roomCriteria tag in the XML message contains ROOMCLASS; the roomType tag within the Inventories collection contains the room class; RoomCount contains the number of rooms to sell for this room class; RoomTypeOverbook contains the overbooking level for this room class.
- Sell limits by room type per day. Contents of the XML message: the roomCriteria tag in the XML message contains ROOMTYPE; the roomType tag within the Inventories collection contains the room type; RoomCount contains the number of rooms to sell for this room type; RoomTypeOverbook contains the overbooking level for this room type.
- Sell limits by rate class per day. Contents of the XML message: the roomCriteria tag in the XML message must default to ROOMTYPE; the HouseOverbook tag contains the sell limit for the rate class; the RateClass tag contains the rate class.
- Sell limits by rate category per day. Contents of the XML message: the roomCriteria tag in the XML message must default to ROOMTYPE; the HouseOverbook tag contains the sell limit for the rate category; the RateCategory tag contains the rate category.
- Sell limits by rate code per day. Contents of the XML message: the roomCriteria tag in the XML message must default to ROOMTYPE; the HouseOverbook tag contains the sell limit for the rate code; the RateCode tag contains the rate code.
- Sell limits for combination room type/rate code (or rate category) per day. Contents of the XML message: the roomCriteria tag in the XML message must default to ROOMTYPE; a RateCode (RateCategory) tag in the message must be populated; the RoomType tag contains the room type; the roomTypeOverbook tag contains the sell limit for the rate code/room type combination.
- If sell limits are changed the update will delete current value and insert changed values.
- If OPERA and external system update at the same time, the lowest value will be insert and updated.

- **Number of physical rooms has changed:**
  - If for some reason the hotel configuration changes and rooms are added or deleted, the external system will be notified of this in a KATOVER message containing the new room count.

Business Events Needed in OPERA for Sending Inventory to the External System

Module	Business Event (Action type)	Business Type
Configuration	New inventory control	Create a new sell limit in OPERA
	Update inventory control	Change an existing sell limit in OPERA

	Delete inventory control	Delete a sell limit in OPERA
Housekeeping	New out of order	Creates a new out of order room in OPERA – this applies only if OPERA serves as PMS
	Configuration	New inventory control

OXI Parameters that Affect Inventory Messages

Parameter_Name	Parameter_Value	Description
Change_To_Inventory_Generates	LOV	Direction: OPERA to External System only. When a Change in Inventory (Overbooking or External Allowance) occurs in OPERA and Inventory business event "AVAILABILITY/% ALLOWANCE" or "CONFIGURATION/% INVENTORY CONTROL" is generated, OXI can use these event in different ways. - Set to 'INVENTORY', As is continue to generate the Inventory messages for the above Business Events. - Set to 'RTAV', Generate the RTAV XML messages instead of Inventory messages for the above Business Events.
Enable_Allowance	Y/N	Direction: Data from OPERA To External System. Inventory allowance for external systems.
External_Physical rooms	Y/N	Direction: Data from external system to OPERA. The hotel may not allow ORS or OPERA S&C to sell its full physical room capacity. Although the hotel has 100 rooms it may allow only 50 rooms to be sold by ORS/OPERA S&C. In this case the physical rooms should be calculated from the inventory snapshot the external system sends to OPERA to make sure only 50 rooms are considered. In this case the parameter would be set to 'Y'. Set it to 'N' if OPERA has the entire physical room inventory from which the sold counts shall be calculated.
INV_ROOMCLASS	Y/N	Direction: Data from OPERA to external system. The external system may accept Room Class totals during resync updates. Set the parameter to 'Y' to include Room Class totals in the RTAV message. Set it to 'N', if Room Class totals are not to be included in RTAV messages.

INV_SNAPSHOT_BLOCKS	Y/N	Direction: Data from external system to OPERA. If blocks are not transmitted both ways in this interface but the external system creates blocks that affect its inventory, this parameter should be set to 'Y'. In this case block inventory will be updated in the OPERA inventory tables from the inventory snapshot sent by external system. Set this parameter to 'N' if it is not necessary to update the OPERA block inventory from the snapshot. This would be the case if blocks are transmitted fully both ways, or if the external system does not create any blocks at all.
INV_SNAPSHOT_RES	Y/N	Direction: Data from external system to OPERA. If reservations are not transmitted both ways in this interface but the external system creates reservations that affect its inventory, this parameter should be set to 'Y'. In this case transient reservation inventory will be updated in the OPERA inventory tables from the inventory snapshot sent by external system. Set this parameter to 'N' if it is not necessary to update the OPERA reservation inventory from the snapshot. This would be the case if reservations are transmitted fully both ways, or if the external system does not create any reservations on its own.
UPL_BLOCK_INFO	Y/N	Direction: Data from OPERA to External System. Set it to 'Y' if OXI needs to send the block information (block code, ded type, blocked/sold count) to the external system. Set it to 'N' if OXI need not send the block information to the external system.

2 Mapping Data Elements

Legend for mapping table:

Date Elements	Description
External System Column	Indicates the possible external system value in *italics*. This column is blank if no value is required and it describes schema layout only.
XML Main Group	The main group in the HITIS/XML schema containing all data elements that belong to this group.
XML Message Label	The label or tag that is given to the data element in this XML schema. These labels are derived from HITIS and are standard for all OXI XML schema labels.
Mandatory in XML Message?	Indicates whether this data element is mandatory for OPERA.
Business Rules	Description of data element, conversion table name if applicable, all business rules, and functionality description.

Inventory - Mapping between External System and XML Message

The original schemas contain more data elements then are described in the following mapping table. Whatever is not described is not used by OXI and can be ignored in the schema.

External System Column	XML Message Main Group	XML Message Label	Mandatory in XML Message?	Business Rules
Restriction Type	Inventory Message	InventoryMessageType	Yes for all messages	Type of Inventory message. Rules: XML Message. OOO – Out of order. OVER – overbooking house. KATOVER – overbooking room type. RTAV – not used as part of this XML schema.

	Inventory Message	RoomCriteria	Yes for all messages	Criteria for inventory. Values: ROOMCLASS; ROOMTYPE **Rules:** 1. OOO message defaults to ROOMTYPE. 2. OVER message defaults to ROOMTYPE even though OVER is only used for house overbooking. 3. KATOVER message can have ROOMTYPE or ROOMCLASS. *If ROOMCLASS is sent, the changes will be applied to each room type linked to the room class. *If ROOMCLASS is set, the room class value will be sent in InventoryCount>RoomType.
Property ID	Inventory Message Hotel Reference	HotelCode	Yes for all messages	Property ID. Required field for OPERA.
	Inventory Message	TransactionID	Yes for all messages	Transaction ID for the trigger/business event. Sent from external system and is required for data from OPERA as well. It will not be mapped and the OPERA transaction ID will be taken from the OPERA business event ID.
	Inventory Message	TimeSpan timeUnitType		Time Unit sent in message. Values: YEAR; MONTH; WEEK; DAY, HOUR; MINUTE; SECOND; NA. Default to DAY.
Start Date	Inventory Message	Starttime	Yes for all messages	Start date of inventory message.

Number of Days	Inventory Message	Numberoftimeunits	Yes for all messages	Number of days the inventory message is sent for. Calculate StartTime + NumberOfTimeUnits and create a record for each date in this time span.
Days of Week	Inventory Message	Daysofweek		Days of week for which overbooking is set Monday-Sunday. Rules: 1. Will be used for long time spans with a specific weekly pattern. The pattern is applied to all time spans specified in the detail object. 2. Pattern should always be sent with all days specified for clarity.
Number of Rooms to sell on House Level	Inventory Message	Housecount	Yes in case of message type OVER	The total number of rooms to sell in house including overbooking per day. Rules: Occurs only in OVER message type.
Overbooking Level by House	Inventory Message	HouseOverbook	Yes in case of message type OVER	The overbooking level set for the house. Rules: 1. Occurs in OVER message for the house overbooking. 2. Occurs in KATOVER messages for the sell limit of rate class/code/category messages.
Rate Class	Inventory Message	RateClass		Rate class for which sell limit applies. Occurs only in KATOVER.
Rate Category	Inventory Message	RateCategory		Rate class for which sell limit applies. Occurs only in KATOVER.
Rate Code	Inventory Message	RateCode		Rate class for which sell limit applies. Occurs only in KATOVER.

	Inventories	InventoryCount generic	Yes in case of message type OOO, KATOVER	Summary room type yes/no. Rules: 1. Occurs only in OOO, KATOVER. 2. This indicates whether the Roomtype is setup as generic Roomtype. Values: YES; NO.
Room Type	Inventories	RoomType	Yes in case of message type OOO, KATOVER	Room Type or Room Class Required field for download and upload. Rules: 1. OXI room type conversion will be used. 2. If RoomCriteria is ROOMTYPE, the field contains the room type. 3. If RoomCriteria is ROOMCLASS, the field contains the room class.
Out Of Order or Sell Limit Count by Room Type	Inventories	RoomCount	Yes in case of message type OOO, KATOVER	Room count for either sell limits or out of order. Rules: 1. Occurs in OOO message for number of out of order rooms in this room type for this date. 2. Occurs in KATOVER messages for the sell limit of room type/class.
Overbooking Level by Room Type	Inventories	RoomTypeOverbook	Yes in case of message type KATOVER	The overbooking level set for the room type or room class.
Room Number	Inventories	RoomNumber		Room number to which out of order applies in OPERA. Rules: Occurs only in OOO messages.

3 Requirements to Build the XML Messages

Information on the XML Schemas Used by OXI

- We are using Oracle xmlparser to parse the xml message
- The current OXI XML schemas are created before the W3C Specifications released, so they are not W3C compliant
- The current OXI XML schemas are derived from HITIS specifications
- The current OXI XML schemas are created using Microsoft SDK 3.0
- The current OXI XML schemas are called as XDR Schemas [XDR : The XML-Data Reduced (XDR) schema defines the individual elements, attributes, and relations used in the XML structure]

The XML Message Header Label

A label needs to be added in the XML message header so OXI can identify who the sender was. We have introduced this label as a standard for all messages:

INT |Resort | Msgtype |MsgId
<?Label FTCRS|SANNO|RESERVATION|532317?>

INT	The interface name. This can be the external system name.
Resort	The external system property code, which will be converted into the OPERA property code.
MsgType	Message Type identifies what kind of message is received.
MsgID	Message ID from the external system. Should be a unique message ID.