

Oracle® Hospitality Symphony

Enhanced PMS Interface Specifications



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ORACLE®

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Preface

Purpose

This document contains information about designing an interface between Oracle Hospitality Symphony and an Enhanced Property Management System (PMS).

Audience

The audience for this document is:

- Programmers who design software interfaces between Symphony POS systems and property management systems
- Field engineers and technicians who troubleshoot problems with interfaces between Symphony POS systems and property management systems

The following prerequisites are necessary for the reader:

- Clear understanding of the charge posting specifications of the PMS interface being programmed, and a thorough understanding of how to implement the interface
- Understanding of how to program the specific product involved to enable the charge posting interface

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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
- Screenshots 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
February 2019	• Initial Publication

1 Message Formats and Interface Methods

To develop the third-party PMS Interface, use the message formats and the interface methods described in this section.

Interface Methods

The third-party PMS Interface supports a TCP-based interface.

TCP Interface

This interface connects Symphony to Windows®-based systems and other systems using the TCP/IP networking protocol. This interface facilitates communications between the POS application and third-party applications that reside on the same Windows platform as the Symphony software.

This interface is also compatible with many forms of local area networks (LANs), including Ethernet, etc.

TCP Connection

The Symphony POS System connects to the TCP port as a socket-client. The third-party PMS application interface must act as a socket-server and accept TCP connections from the Symphony POS System on the default port 5009. This port should be configurable so that changes to any value above 5009 if needed. The Symphony POS System will not close the port unless it is shutting down, but includes of course functionality to determine if the third-party PMS application disconnected and will reconnect when needed. The third party PMS application interface on the other side should not close the port unless it is shutting down but should include functionality to determine if the Symphony POS System client disconnected.

Even though a Symphony POS System can handle up to hundreds of workstations there will only be one interface connection (i.e. open socket-pair) to the third-party PMS application per physical Symphony server.

Message Format

The format of all messages between the Symphony POS System and the third-party PMS application include three segments and have the following layout:

SOH <POS Source ID> **STX FS** <Application Seq.> <Application Data> **ETX**
<Checksum> **EOT**

SOH

The SOH character (Start of Header) serves as a message lead-in character that identifies the start of a new message. The SOH character is represented by the 7-bit hexadecimal value 01h, plus a parity bit, if applicable.

<POS Source ID>

SOH <POS Source ID> **STX FS** <Application Seq.> <Application Data> **ETX**
<Checksum> **EOT**

The <POS Source ID> character field identifies the source (when sent by the Symphony POS System) and the destination of a message (when replied by the third-party PMS application). The <POS Source ID> field contains either 18 or 25 characters. The interface definition record may be configured to supply either a two-character or a nine-character Workstation Number, which is followed by the Outgoing Message Name (16 characters). The Workstation Number is a 2 or 9 bytes numeric character field in the range 1 through 99 (or 1 to 999999999 respectively). It is represented by ASCII character codes in the range Hex 30 through Hex 39, plus parity bits, if applicable. The digits are right justified within the field with leading '0' (ASCII zero character, Hex 30) or leading blanks (ASCII blank character, Hex 20). Leading characters appear only if the number of characters in the field is less than the total field size. The Outgoing Message Name is a 16-byte alphanumeric character field stored in the Symphony Interface Definition. This field is represented by ASCII character codes, plus parity bits, if applicable. It identifies and differentiates the source(s) of the communications message(s).

Examples, the character "." represents a single SPACE (20h):

2 character Workstation Number:

01PMS INTERFACE...

9 character Workstation Number:

000000001PMS INTERFACE...

STX

The STX (Start of TeXt) serves as a data field lead-in character that identifies the start of the message data block. The STX character is represented by the 7-bit hexadecimal value 02h, plus a parity bit if applicable.

FS

The FS (Field Separator) identifies this message as a SIM message data block. The FS character is represented by the 7-bit hexadecimal value 1Ch, plus a parity bit if applicable.

<Application Seq.>

SOH <POS Source ID> **STX FS** <Application Seq.> <Application Data> **ETX**
<Checksum> **EOT**

The <Application_Seq.> segment comprises a two-digit sequence number and a retransmission flag. Each Symphony POS workstation application increments its own sequence number with each message. When a message is retransmitted, the same sequence number will be used as the original message. In addition, a retransmission flag character is provided. The format of this segment is as follows:

Field	Length	Format	Remarks
Applications Sequence Number	2 Bytes	2 ASCII digits	May contain leading spaces or zeroes and is between 01 and 99
Retransmission Flag Character	1 Byte	Space or "R"	"R" character (ASCII 52h) is placed in this field if this is a retransmission message

The Application_Sequence number is initially set to "01" when the Symphony POS workstation applications starts. The application rolls the sequence number back to "01" after "99". If the third-party system receives a message containing the same sequence number as the previous message and the retransmission flag is set, the third party should retransmit the last response.

<Application Data>

SOH <POS Source ID> **STX FS** <Application Seq.> **<Application Data>** **ETX**
 <Checksum> **EOT**

The <Application Data> segment is the actual payload of the message. It leads with a message ID field that identifies the message type. Permissible message IDs are listed on the following pages. A variable number of fields follow the message ID field. These fields constitute the body of the actual message and are defined for each message type. These fields are variable in length, consequently, each field will be separated by an ASCII File Separator character (FS = 1Ch) which serves to determine the start of each field. The format of applications data segment looks like this:

<Message ID> **FS** <Msg Field 1> **FS** <Msg Field 2> **FS** **FS** <Msg Field n>

The total size of the message can be 32K from the SOH to the EOT. There are a maximum of 37 bytes overhead, which means that the maximum byte count of all fields and field separators is 32768 – 37, or 32731 bytes.

<Checksum>

SOH <POS Source ID> **STX FS** <Application Seq.> <Application Data> **ETX**
 <Checksum> **EOT**

The Checksum field is only used when communicating over an asynchronous serial interface. A TCP-based PMS Interface will ignore this field, so it can be omitted from the

message format. When the Checksum is part of the message, however, format it as follows:

Field	Length	Format	Remarks
Checksum	4 bytes	4 ASCII Hex characters	Contains ASCII characters in the range 30H-39H and 41H-46H (0-9 and A-F)

The Checksum is the 16-bit binary addition (excluding parity, if applicable) of all characters after the SOH, up to and including the ETX character. The Checksum is initially set to zero. For asynchronous, serial transmission, the Checksum is represented as four ASCII-Hex characters.

EOT

The EOT (End Of Transmission) serves as a message lead-out character and identifies the end of a message. The EOT character is represented by the 7-bit hexadecimal value 04h, plus a parity bit, if applicable.

Pinging

The TCP connection has a typical “keep-alive” time-out of two hours. In order to detect a “down” interface more quickly and re-establish the connection, the Symphony PMS interface periodically sends a “ping” message to the server about every five minutes. The third-party PMS application should detect the ping message and return the message in its original format. The format of the ping message should be as follows:

SOH <POS Source ID> STX ETX EOT

The <POS Source ID> segment contains a null address: the workstation number will be zero and the interface name will be blank.

Example, the numbers in square brackets “[]” represent the decimal ASCII value of a single, non-printable character and the character “.” represents a single SPACE (20h):

2 character Workstation Number:

[1]·0··········[2][3][4]

9 character Workstation Number:

[1]·······0··········[2][3][4]

2 Application Data Field Types

Application data field types for both request and response messages are detailed in terms of field description, field size, and field format. The field description identifies the way in which the data is interpreted (e.g., employee number, revenue center number, etc.). The field size indicates the maximum number of characters that are in the given field. The field format describes the field in terms of data type.

The following is a description of the five basic field format data types:

Nx

Unsigned numeric character field (without decimal point). The ASCII characters 0 through 9 represent all numeric characters. The value, x, defines the number of digits possible in the field. Padding (i.e. leading blanks) is not used.

\$x

Signed numeric character field (with decimal point). The ASCII characters 0 through 9 represent all numeric characters. The value, x, defines the number of digits possible in the field, including the decimal point. Depending on the configuration in Symphony the decimal point character is either '.' (ASCII character, 2Eh) or ',' (ASCII character, 2Ch). Padding (i.e. leading blanks) is not used.

The negative sign precedes the most significant digit and is represented by an ASCII "-" character, 2Dh for negative numbers.

Ax

Alphanumeric character string field. All characters represented by the ASCII characters in the range Hex 0x20 through Hex 0xFF. International characters (from Hex 0x80) depend on the configuration of the Symphony POS system.

The value, x, defines the maximum number of characters possible in the field. Padding (i.e. leading or trailing blanks) is not used.

3 Application Data Format

Charge Posting

This message pair is used by the Symphony POS system to perform a charge posting. Leading message ID fields, that identifies the message type, are shown in blue, bold font and are not included in the related tables that explain the other fields.

Charge Posting Request

Symphony POS to third-party PMS Interface Application Data Format:

There are two formats to initiate a Charge Posting:

- a) Posting a non Front-Office charge (i.e. Cash)

IFC_CHG_PST, **FS**, SPACE, **FS**, SPACE, **FS**, Tender_num, **FS**,
Tender_amount, **FS**, Num_sales_itemizers, **FS**, Sales Itemizer 1,..., Sales
Itemizer N, **FS**, Num_discounts, **FS**, Discount 1,...,Discount n, **FS**,
Num_service_charges, **FS**,
Service charge 1,..., Service charge N, **FS**, Num_taxes, **FS**, Tax Itemizer 1, ...,Tax
Itemizer N, **FS**,
Guest Check Number, **FS**, Check Employee Number, **FS**, Serving
Period/Cashier Number, **FS**,
Revenue Center Number, **FS**, Number of Guests, **FS**, Date, **FS**, Time, **FS**,
Previous Payment Amount

SPACE = hexadecimal value 20h, details of each field can be found on the following pages.

The response to this posting is found below at “Acknowledging a charge posting”.

- b) Selecting a guest to whom to post a charge:

IFC_CHG_PST, **FS**, Guest_id, **FS**, Tender_num

Field Name	Format	Description
Guest_id	A30	Guest ID as entered by POS operator. This is not limited other than in input length. It is up to the third-party PMS on how this information should be handled to source a particular guest or a list of guests
Tender_num	N9	Symphony Tender/Media Number that is used for the Charge Posting.

Charge Posting Response

The third-party PMS will answer with a message type IFC_GST_SEL and the operator will select/confirm the Guest. Once done an IFC_CHG_PST Charge Porting will be send, including the selection details as well as the posting details.

Returning a list of guests from which to select:

IFC_GST_SEL, **FS**, Guest_id, **FS**, IFC_CHG_PST, **FS**, List_size, **FS**, Guest_list[]

This message is returned when a IFC_CHG_PST message is sent requesting a guest selection.

Field Name	Format	Description
Guest_id	A30	Guest ID AS entered by POS operator: Should echo what was send in the Charge Posting request.
IFC_CHG_PST	A11	Hard-Coded Value set to 'IFC_CHG_PST'
List_size	N5	Length of guest list
Guest_list	A40	List of guest names from which to select for a charge posting, each name separated with FS

Charge Posting Request for a Selected Guest

IFC_CHG_PST, **FS**, Guest_id, **FS**, Guest_name, **FS**, Sel_num, **FS**, Tender_num, **FS**, Tender_amount, **FS**, Num_sales_itemizers, **FS**, Sales Itemizer 1,..., Sales Itemizer N, **FS**, Num_discounts, **FS**, Discount 1,...,Discount N, **FS**, Num_service_charges, **FS**, Service charge 1,..., Service charge N, **FS**, Num_taxes, **FS**, Tax Itemizer 1, ..,Tax Itemizer N, **FS**, Guest Check Number, **FS**, Check Employee Number, **FS**, Serving Period/Cashier Number, **FS**, Revenue Center Number, **FS**, Number of Guests, **FS**, Date, **FS**, Time, **FS**, Previous Payment Amount

Field Name	Format	Description
Guest_id	A30	Guest ID AS entered by POS operator: Should echo what was send in the Charge Posting request.
Guest_name	A40	Name of selected guest
Selection_num	A6	'S' plus the index of the selected guest (based on Guest_list returned from PMS in IFC_GST_SEL)
Tender_num	N9	Simphony Tender/Media Number that is used for the Charge Posting.
Tender_amount	\$12	The tender or payment amount
Num_sales_itemizers	N5	The number of sale itemizers included in the message. Typically 16 for Simphony.
Sales Itemizer 1..N	\$12	Sales Itemizers 1 through n, each separated with FS
Num_discounts	N5	The number of discounts itemizers in the message, the maximum is 16. Discounts itemizers reflect any discount applied to the related Sales Itemizer.
Discount 1..N	\$12	Discount Itemizers 1 through n, each separated with FS

Num_service_charges	N5	The number of service charge itemizers in this message. The maximum is 14
Service Charge 1..N	\$12	Service Charge Itemizers 1 through n, each separated with FS
Num_taxes	N5	Number of tax itemizers in the message. The maximum is 63.
Tax Itemizer 1 ..N	\$12	Add-On Tax Collected or Taxable Total (for Inclusive taxes, i.e. Vat) Itemizer 1 through n, each separated with FS
Guest Check Number	N8	Guest check number assigned to the guest check in question.
Check Employee Number	N9	Guest check employee number
Serving Period/Cashier/Order-Type Number	N9	Serving period, cashier or order-type number, depending on the setup of the interface used for this posting.
Revenue Center Number	N5	Revenue center number used for this posting
Number of Guests	N5	Number of guests assigned to the guest check.
Date	A8	Date the check was begun in the format YYYYMMDD
Time	A8	Time the check was begun in the format HH:MM:SS
Previous Payment Amount	\$12	Any previous payment amount already applied to this guest check.

Charge Posting Acknowledgement Response

IFC_CHG_PST, **FS**, Message_Status, **FS**, Status, **FS**, Message, **FS**, TndTTL

Field Name	Format	Description
Message_Status	A1	'Y' if a guest message is pending, 'N' to bypass any guest message functionality
Status	A1	Charge posting status using one of the possible values below: 'P' = Posted 'D' = Declined 'E' = Error
Message	A30	If Status 'P' -- Message is placed in transaction detail and usually contains room# and guest-name. If Status 'D' or 'E' -- Message is displayed to indicate problem to the operator.
TndTTL	\$12	Not used

Guest Charge Posting Dialog

The typical posting dialog is (FS not listed for simplicity):

Simphony POS		Third-party PMS
IFC_CHG_PST , Guest_id, Tender_num	⇒	
	⇐	IFC_GST_SEL , Guest_id, IFC_CHG_POS, List_size, Guest_list[]
POS Operator selects the appropriate guest		
IFC_CHG_PST , Guest_id, Guest_name, Sel_num,	⇒	
	⇐	IFC_CHG_PST , message_status, status, message,

Non Front-Office Charge Posting Dialog

The typical posting dialog is (FS not listed for simplicity):

Simphony POS		Third-party PMS
IFC_CHG_PST , SPACE, SPACE, Tender_num,	⇒	
	⇐	IFC_CHG_PST , message_status, status, message,

Service Charge Itemizer Details

Depending on the Symphony POS setup, the following breakdowns are provided:

Full Breakdown of Service Charges with 14 Itemizers

Itemizer		
1	Service-Charge based on SVC Itemizer 1	See remark (1) below
2	Service-Charge based on SVC Itemizer 2	See remark (1) below
3	Service-Charge based on SVC Itemizer 3	See remark (1) below
4	Service-Charge based on SVC Itemizer 4	See remark (1) below
5	Service-Charge based on SVC Itemizer 5	See remark (1) below
6	Service-Charge based on SVC Itemizer 6	See remark (1) below
7	Service-Charge based on SVC Itemizer 7	See remark (1) below
8	Service-Charge based on SVC Itemizer 8	See remark (1) below
9	OPEN Amount Service-Charge with no SVC Itemizer enabled	See remark (2) below
10	PRESET Amount Service-Charge with no SVC Itemizer enabled	See remark (2) below
11	Stored Value Transaction Service Charge	Simphony SVC Option Bit 14 ON
12	Non-Revenue Service Charge	Simphony SVC Option Bit 7 ON
13	Charged Tip	
14	Auto Service-Charge	

Remark (1): Amount of any PERCENTAGE based Service Charges based on the SVC Itemizer (1-8) and the Menu-Items present on the check. For an AMOUNT based Service Charge based on the FIRST active SVC Itemizer found (if any).

Remark (2): Only used with AMOUNT based Service Charges with no SVC Itemizer enabled.

Limited Breakdown of Service Charges with 2 Itemizers

Itemizer	
1	Sum of amount and percentage based Service-Charges
2	Auto Service-Charge

Tax Handling

Simphony POS differs between two basic Tax configurations, an Add-On Tax option that covers both Add-On and Inclusive taxes combined in a single transaction and a VAT Tax option that will only permit inclusive, percentage based taxes.

Depending on this Tax configuration, the Tax Itemizer (1 to 8 or 1 to 64) will contain one of the following:

- Add-On tax collected only when Simphony POS is configured to use the Add-On Tax option. Any inclusive, percentage based taxes used in such a configuration will not be included.

- Taxable Totals when Symphony POS is configured to use the VAT Tax option.

Check Facsimile

This message pair is used by the Symphony POS system to provide the check facsimile to the third-party PMS. The check facsimile is a textual representation of the printed POS receipt without any formatting instructions.

Check Facsimile Request

FO_FI_FINAL_TENDER, **FS**, Date, **FS**, Time, **FS**, Revenue Center Number, **FS**, Guest Check Number, **FS**, Chk_Data

Field Name	Format	Description
Date	A8	Date when the check was begun in the format YYYYMMDD
Time	A8	Time when the check was begun in the format HH:MM:SS
Revenue Center Number	N5	Revenue Center of this check
Guest Check Number	N8	Guest check number assigned to the guest check in question.
Chk_Data	A<see desc.>	The actual check facsimile, variable in length. Each line is terminated with LF (0Ah). Each line can have a maximum length of 40 characters, the total size of this field on the other side can range up to 32k.

Check Facsimile Response

FO_87_DONE, **FS**, Text

Field Name	Format	Description
Text	A70	Up to the PMS to fill this Field. It is neither displayed nor logged on the POS side.