

# **Required settings for PBX To use FOS Interface for Panasonic PBX**

- KX-NS series
- KX-NSX series

Version 1.05  
As of Jan. 29, 2019

# Introduction

## About FOS Interface

Panasonic KX-NS and NSX series PBXs offer an FOS interface of built-in PMSi, to enable you to connect an FOS(PMS) directly without an external PMSi.

Please note as follows.

- KX-NS series  
KX-NS300/500/700 PBXs installed with software version 4.5 or later offer this feature.  
KX-NS1000 PBX installed with software version 6.01 or later offers this feature.
- KX-NSX series  
KX-NSX1000/2000 PBXs installed with software version 3.0 or later offer this feature.

## About this document

This manual describes the setting procedure in PBX side to use the built-in FOS interface on the PBXs.

## Trademarks

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# Revision History

Version	Date	Descriptions
1.00	21-Apr-17	1 <sup>st</sup> release
1.01	28-Nov-17	<p><b>Introduction</b> Added description of supported software version of NS300 /500 /700.</p> <hr/> <p><b><u><a href="#">2.2 Dial information for Gather Digits function</a></u></b> -For Gather Digits' phone operation, the case of SLT / PT extension and the case of SIP extension are described separately. -Added the following note. Depending on the software version of the PBX, the SIP extension may not be able to play the Confirmation Tone when operating RoomStatus and MiniBar Charge.</p> <hr/> <p><b><u><a href="#">3 Trouble Shooting</a></u></b> Added this section.</p> <hr/> <p><b>Overall</b> Correction of various typographical errors</p>
1.02	16-May-18	<p><b>Introduction</b> Added description of supported PBX model: KX-NS1000 software version 6.01 or later KX-NSX1000/2000 software version 3.0 or later</p> <hr/> <p><b>1.1 Activation Key</b> Added description of required AK (KX-NSXF004) for KX-NSX1000/2000.</p>
1.03	12-July-18	<p><b><u><a href="#">1.2 System option Reserved Bit</a></u></b> Added about default value for the System option Reserved Bit Added that it is necessary to log on WebMC with the special account in order to do this setting</p> <hr/> <p><b><u><a href="#">2.2 Dial information for Gather Digits function</a></u></b> Added that Hotel application side can decide the rule about the numbers actually used for RoomStatus number, number for Item Code and Quantity, to [Operation example of guest room extension by maid when Dial Information is set to "717"]</p> <hr/> <p><b>2.3 CallBack extension number</b> Changed the composition and name of the section as follows. 2.3 CallBack extension number -&gt; <u><a href="#">2.3 Setting related to "Message Waiting Lamp On" feature</a></u> <u><a href="#">2.3.1 CallBack extension number</a></u></p>

		<p><b><a href="#">2.3.1 CallBack extension number</a></b></p> <p>Added the explanation about the case where the voice mail device built in the PBX lights the Message Waiting Lamp on the guest room extension</p>
		<p><b>SLT MW Mode and MWI Method</b></p> <p>Added explanation about necessary setting to light Message Waiting Lamp of room-extension which is SLT or SIP phone with the following sections.</p> <p><b><a href="#">2.3.2 Required setting for SLT and SIP extension</a></b></p>
		<p><b><a href="#">2.4.1 Decimal Point Position for Currency</a></b></p> <p>Added a supplementary explanation about the relationship between Digits After Decimal Point setting and SMDR command format type.</p> <p><b><a href="#">2.4.4 Relationship between PBX setting pattern and SMDR command format type</a></b></p> <p>Added the table that shows the relationship between PBX setting pattern required for SMDR and SMDR command format type.</p>
1.04	25-Jan-19	<p><b><a href="#">1.2 System option Reserved Bit</a></b></p> <p>Added Note at the description for "1. Number 08h-6".</p> <p>When the PBX is KX-NS series version 7 or later / KS-NSX series version 4 or later, It is unnecessary to set the bit</p>
		<p><b><a href="#">2.3.2 Required setting for SLT and SIP extension</a></b></p> <p>Added Note</p> <p>SLT needs to "Card that Message Lamp can be used" on the PBX to lit the lamp</p>
1.05	29-Jan-19	<p><b><a href="#">1.2 System option Reserved Bit</a></b></p> <p>Added Note about the necessity of setting "Guest Room" for the PBX is KX-NS series version 7 or later / KS-NSX series version 4 or later</p> <p><b><a href="#">1.3 Guest Room</a></b></p> <p>Added the section for the PBX is KX-NS series version 7 or later/ KS-NSX series version 4 or later</p>

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# 1 To enable FOS Interface feature

## 1.1 Activation Key

In order to use FOS Interface feature, it is required to install an Activation key for CTI interface, CSTA Multiplexer or Multiple CSTA connection into the PBX.

One of the following AKs is required.

In case of KX-NS series (KX-NS300/500/700/1000)

1. CTI interface : KX-NSF101

or

2. CSTA Multiplexer : KX-NSA020

In case of KX-NSX series (KX-NSX1000/2000)

1. Multiple CSTA connection : KX-NSXF004

e.g. Activation Key Status information on WebMC screen for KX-NS series

WebMC menu : [PBX Configuration]-[Configuration]-[Slot]-[Activation Key]

Activated feature	Pre-installed	Activation key	Features in total	System total
UME-mail (user)	0	No limit	No limit	-
Two-way Recording (user)	0	10	10	-
CTI interface	0	1	1	-
CSTA Multiplexer (session)	0	1	1	-
Mobile Extension (user)	0	20	20	20
CA Basic (No limit)	0	No limit	No limit	-
CA Pro (user)	0	128	128	-
CA Supervisor (user)	0	1	1	-
CA Network Feature (user)	0	128	128	-
CA Operator Console (user)	0	1	1	-
CA Thin Client Server	0	1	1	-

## 1.2 System option Reserved Bit

When using FOS Interface feature, it may be necessary to change either or both of the following "System option Reserved Bit" from "Disable" state which is the default value to "Enable" state.

**Note:** Need to login with the special account in order to display the page for "System Option Reserved Bit" on WebMC screen. For the special account, please contact the nearest Sales Company or CS-KMS.

- 1. Number 19h-1** : to be able to display FOS tab on the screen which is "Setup-PBX Configuration-6.Feature-2.Hotel & Charge"

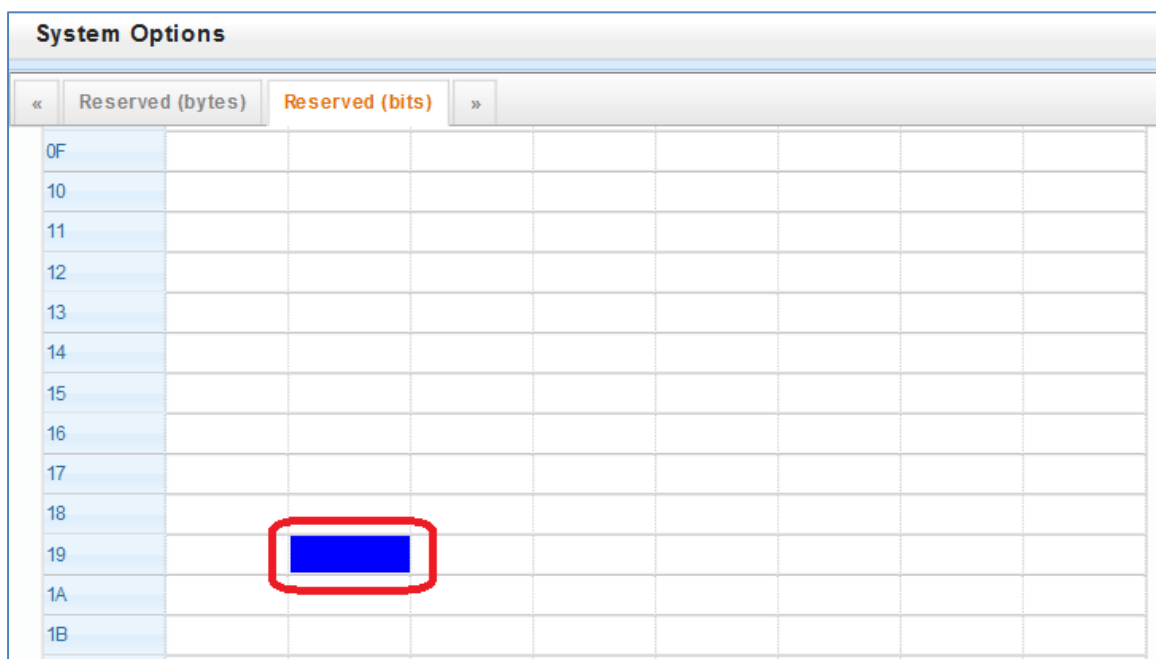
However, even if this option bit is still "Disable", FOS interface feature can be work with default setting for Hotel & Charge-FOS.

The setting values of Number 19h - 1 and their meanings are as follows.

Disable : FOS tab on Hotel & Charge screen is not displayed. This is default value.

Enable : FOS tab on Hotel & Charge screen is displayed.

WebMC menu : [PBX Configuration]-[System]-[System Options]-[Reserved (bits)]



System Options	
Reserved (bytes)	Reserved (bits)
0F	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	<input checked="" type="checkbox"/>
1A	
1B	

- 2. Number 08h-6** : to be able to use FOS Interface Commands (Check In/Out, Guest Change and Change COS) even while Web Maintenance Console is logged on, in case of KX-NS series Version 6 or less or KX-NSX series Version 3 or less.

**Note :** When the PBX is KX-NS series version 7 or later, or KS-NSX series version 4 or later, please leave this bit as the default value "Disable ".

If you change this bit to "Enable", the following feature cannot be used.

- Simultaneous operation of FOS-IF and Web Maintenance Console at all times without mutual influence on each other
- Room Move function of FOS-IF

For the detail of settings to use the above functions, please refer to **1.3 Guest Room.**

In case of KX-NS series Version 6 or less or KX-NSX series Version 3 or less,  
 If Bit of Number 08h-6 is set to still "Disable", CHECK-IN / OUT, Change Cos, and Guest Change will be impossible with FOS-IF, while WebMC is logged on, because WebMC occupies PBX resources.

The setting values of Number 08h - 6 and their meanings are as follows.

Disable : WebMC takes precedence. This is default value.

Enable : FOS-IF takes precedence.

When running FOS-IF and WebMC simultaneously, we recommend strongly to change this setting to "Enable".

However, by this Enable setting, it is impossible to change various settings by WebMC during logon. (WebMC will not respond or will return error status.) In such a case, please log out WebMC once and log on again.

Basically, we recommend that you do not use WebMC (do not log on) while FOS-IF is running.

WebMC menu : [PBX Configuration]-[System]-[System Options]-[Reserved (bits)]

The screenshot shows the 'System Options' configuration page. At the top, there are navigation buttons for 'Reserved (bytes)' and 'Reserved (bits)'. Below this is a legend where a blue square represents 'Enable' and a white square represents 'Disable'. A grid displays reserved bits from 00 to 09 across columns 0 to 7. Bit 08 is currently set to 'Enable' (blue square) and is highlighted with a red circle. Other bits are set to 'Disable' (white squares).

No.	0	1	2	3	4	5	6	7
00								
01					█			
02	█	█						
03					█			
04								█
05	█							
06								
07		█						
08			█				█	
09					█			



### 1.3 Guest Room

When the PBX is KX-NS series version 7 or later, or KS-NSX series version 4 or later, this setting "Guest Room" is effective.

**Note-1:** To configure "Guest Room", never set the above system option bit Number 08h-6 to "Enable". If you change this bit to "Enable", you will not be able to configure "Guest Room".

For all room extensions, the following functions can be used by setting to specify each room extension number as "Guest Room".

- Simultaneous operation of FOS-IF and Web Maintenance Console at all times without mutual influence on each other
- Room Move function of FOS-IF for KX-NS series V7 or later (\*)  
 (\*)KX-NSX series does not support this function.

#### WebMC menu

KX-NS series:

[PBX Configuration]-[Extension]-[Wired Extension]-[Extension Settings]-[Option 9]

KX-NSX series:

[Users]-[Advanced Extension Settings]-> click "Edit" button

->[Advanced Extension Settings]-[Option 9]

No.	Extension Number	Extension Name (20 characters)	PDN Delayed Ringing	Built-in Communication Assistant	Mobile Extension	Guest Room
			ALL	ALL	ALL	ALL
1	1001		Immediate	Enable	Enable	No
2	1002	Hotel Operator	Immediate	Enable	Disable	No
3	1003		Immediate	Enable	Disable	No
4	1004		Immediate	Enable	Disable	No
5	1005	ROOM	Immediate	Enable	Disable	Yes
6	1006	ROOM	Immediate	Enable	Disable	Yes
7	1007	ROOM	Immediate	Enable	Disable	Yes
8	1008	ROOM	Immediate	Enable	Disable	Yes
9	1009	ROOM	Immediate	Enable	Disable	Yes
10	1010	ROOM	Immediate	Enable	Disable	Yes
11	1011	ROOM	Immediate	Enable	Disable	No
12	1012	ROOM	Immediate	Enable	Disable	Yes
13	1013	ROOM	Immediate	Enable	Disable	No
14	1014	ROOM	Immediate	Enable	Disable	No

Regarding the item "Guest Room" for each room extension number, change the value to "Yes" from "No" as the default value in advance.

For room extensions set as "Guest Room = Yes", the followings are possible.

- It is prohibited for WebMC to change various information on the Guest Room extension, such as extension name or extension's COS number or etc.. (In effect, change of the information for the Guest Room extensions is possible only by the hotel application.)
- When the hotel application executes the Room Move function of FOS-IF, the room extension number can be specified as Old Room (move origin) or New Room (move destination).

**Note-2:** When it is necessary to change any information such as COS number, etc on a Guest Room extension by WebMC.

Once, please change back the room extension setting to "Guest Room = No" using WebMC. After this, you can change the information of that extension by WebMC.

When that change is completed, please set "Guest Room = Yes" again for that extension so that the hotel application can control the room extension as usual.

## 2 Required setting for PBX

### 2.1 FOS Interface Port

Set the Port number for the communication with Hotel Application (FOS) .

The default value is 31000.

When this setting is changed, system restart is necessary on PBX side.

WebMC menu :

[PBX Configuration]-[Configuration]-[Slot]-[System Property]-[Site]-[Port Number]

System Property - Site							
«	Main	VoIP-DSP Options	Port Number	LAN Status	Media Relay	SIP Extension	»
Voice (RTP) UDP Port No. (Server)	:						12000
Voice (RTP) UDP Port No. (IP-PT / SIP-MLT)	:						8000
UDP Port No. for SIP Extension Server	:						5060
CWMP (HTTP) Port No. for SIP-MLT	:						7547
CWMP (HTTPS) Port No. for SIP-MLT	:						37547
Data Transmission Protocol (HTTP) Port No. for SIP-MLT	:						7580
Data Transmission Protocol (HTTPS) Port No. for SIP-MLT	:						37580
Firmware Update Port No. for IP-PT/IP-C S (Media)	:						31021
LOGIN Port Number	:						33321
CTI Port Number	:						33333
Built-in Communication Assistant Server	:						33334
<b>FOS Interface Port Number</b>	:						<b>31000</b>

Range : 1024~

## 2.2 Dial information for Gather Digits function

For the following 2 Gather Digits functions in PBX side,

- **Room Status**
- **Minibar Charge Posting**

Dial information is needed to be set in PBX as feature code in advance.

For example,

If you would like to use “as feature code for these Gather Digits function,

Set “\*717” in the field of “**Dial Information (CTI)**” of **Numbering Plan** for PBX.

Example of PBX setting screen for Dial Information;

WebMC menu : [PBX Configuration]-[System]-[Numbering Plan]-[Main]-[Features]

No. ↑	Feature	Dial (4 digits)
52	Log-in / Log-out	*736
53	Incoming Call Queue Monitor	*739
54	Hot Line (Pickup Dial) Program Set /Cancel	*740
55	Absent Message Set / Cancel	*750
56	BGM Set / Cancel	*751
57	Remote Timed Reminder (Remote Wakeup Call)	*76*
58	Timed Reminder Set / Cancel	*760
59	Printing Message	*761
60	Extension Dial Lock Set / Cancel	*77
61	Time Service (Day / Lunch / Break / Night) Switch	*780
62	Remote Extension Dial Lock Off	*782
63	Remote Extension Dial Lock On	*783
64	Extension Feature Clear	*790
65	Extension PIN Set / Cancel	*799
66	Dial Information (CTI)	*717
67	Conference Group Call Operation	*32
68	Centralized BLF Monitor Cancel	*784
69	Busy Out Cancel	*785

**[Operation example of guest room extension by maid when Dial Information is set to “717”]**

- **Room Status**

[In case of Analog-Extension (SLT) or PT-Extension (DPT or IPPT)]

1) Off-Hook

2) \*717 + 3 + #

Dial [\* + Gather digit feature code(717) + RoomStatus number(3) + #]

- 3) Hear Confirmation Tone
- 4) ON-Hook

[In case of SIP-Extension]

- 1) \*717 + 3 + #  
Dial [\* + Gather digit feature code(717) + RoomStatus number(3) + #]
- 2) Off-Hook
- 3) Hear Confirmation Tone (\*)
- 4) ON-Hook

Note:

RoomStatus's numeric digits range from 1 to 6. Within this range, Hotel application (FOS/PMS) can determine the operation rules for the value of RoomStatus which will be actually used. It is necessary to operate the dial according to that rule.

#### - **Minibar Charge Posting**

[In case of Analog-Extension (SLT) or PT-Extension (DPT or IPPT)]

- 1) Off-Hook
- 2) \*717 + 7 + 55 + 2 + #  
Dial [\* + Gather digit feature code(717) + ID indicating Minibar(7) + number for Item Code (55) + Quantity (2) + #]
- 3) Hear Confirmation Tone
- 4) ON-Hook

[In case of SIP-Extension]

- 1) \*717 + 7 + 55 + 2 + #  
Dial [\* + Gather digit feature code(717) + ID indicating Minibar(7) + number for Item Code (55) + Quantity (2) + #]
- 2) Off-Hook
- 3) Hear Confirmation Tone (\*)
- 4) ON-Hook

Note:

Hotel application (FOS/PMS) can determine the operation rules for the value of **number for Item Code** and **Quantity** which will be actually used within the range of each predetermined number of digits. It is necessary to operate the dial according to that rule.

\* Confirmation Tone:

When Room Status or Minibar Charge Posting is performed with SIP-extension, although these operations are possible, Confirmation Tone may not be heard in case of using old version of software of PBX.

## 2.3 Setting related to "Message Waiting Lamp On" feature

In order to use "Message Waiting Lamp On" feature, several settings below are necessary.

### 2.3.1 CallBack extension number

Set the callback destination extension for the command "Message Waiting Lamp On" from the hotel application (FOS/PMS).

This setting shares the PBX Operator extension (for Day) setting.

WebMC menu : [PBX Configuration]-[System]-[Operator & BGM]

Operator & BGM		
<b>PBX Operator</b>		
Operator-Extension Number or Floating Extension	<input type="checkbox"/>	Automatic copy to UM Operator (No.1)
Day	: 101	Destination Setting
Lunch	: 101	Destination Setting
Break	: 101	Destination Setting
Night	: 101	Destination Setting
<b>BGM and Music on Hold</b>		
Music Source of BGM 1	: Internal BGM	▼
Music on Hold	: BGM1	▼
Sound on Transfer	: Same as Music on Hold	▼

Note1:

In case of using this FOS Interface feature, don't set Floating Extension number as PBX Operator.

However,

If you need ICD-G as PBX Operator which will be received a Callback call from Guest room, Please set specified extension number as PBX Operator, and set Call forward to the ICD-G on the extension so that Calls to the PBX Operator extension will be forwarded to the ICD-G.

Note2:

If the voice mail device (UM) built in the PBX is used, when a voice message to a guest is stored, UM lights the message waiting lamp on the guest room extension in order to notify it. In this case, the callback destination extension will be UM instead of the PBX Operator extension.

### 2.3.2 Required setting for SLT and SIP extension

If the type of the room extension is SLT (single line telephone) or SIP phone, some setting is required to turn on the Message Waiting Lamp of the phone when the "Message Waiting Lamp On" feature is used for the extension.

If the extension is a SLT, you need to configure "SLT MW Mode". For details, see **1) SLT MW**

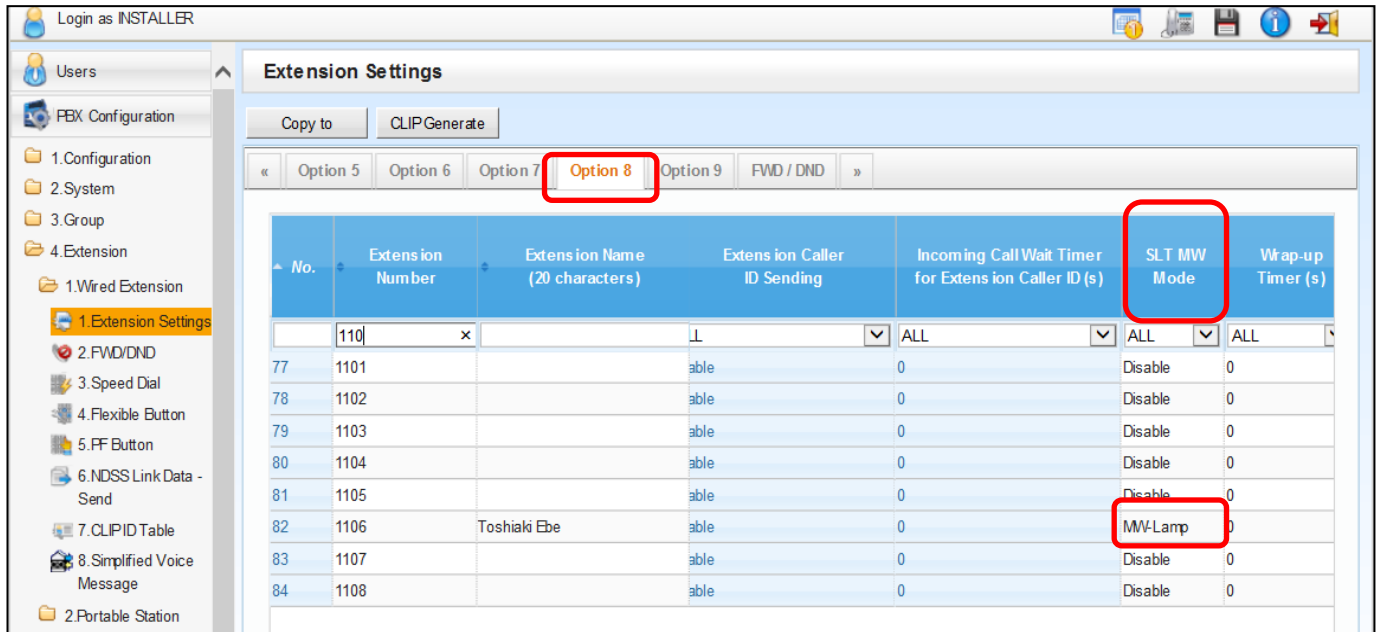
## Mode.

On the other hand,

If the extension is a SIP phone, you need to set both "SLT MW Mode" and "MW Method". For details, see **1) SLT MW Mode** and **2) MW Method**.

### 1) SLT MW Mode

WebMC menu : [PBX Configuration]-[Extension]-[Wired Extension]-[Extension Settings]-[Option 8]



The screenshot shows the 'Extension Settings' page for 'Option 8'. A table lists various extensions with columns for 'No.', 'Extension Number', 'Extension Name (20 characters)', 'Extension Caller ID Sending', 'Incoming Call Wait Timer for Extension Caller ID (s)', 'SLT MW Mode', and 'Wrap-up Timer (s)'. The 'SLT MW Mode' column is highlighted in blue, and the 'MW-Lamp' option is selected for extension 82 (1106, Toshiaki Ebe). The 'MW-Lamp' option is also highlighted with a red box.

No.	Extension Number	Extension Name (20 characters)	Extension Caller ID Sending	Incoming Call Wait Timer for Extension Caller ID (s)	SLT MW Mode	Wrap-up Timer (s)
	110	x	L	ALL	ALL	ALL
77	1101		able	0	Disable	0
78	1102		able	0	Disable	0
79	1103		able	0	Disable	0
80	1104		able	0	Disable	0
81	1105		able	0	Disable	0
82	1106	Toshiaki Ebe	able	0	MW-Lamp	0
83	1107		able	0	Disable	0
84	1108		able	0	Disable	0

Change the "SLT MW Mode" of the extension from "Disable" which is the default value to "MW-Lamp"

(For the item "SLT MW Mode", either "Disable" or "MW-Lamp" can be set.)

If this value is set as "MW-Lamp",

When PBX receives "Message Waiting Lamp On" message for the extension from FOS / PMS, PBX will light this lamp on the phone. (For example, in case of SIP phone, PBX sends Notify (Messages-Waiting: yes¥r¥n) to the phone.)

#### Note :

When the guest room extension is SLT (single line telephone),

In order to light Message Waiting Lamp, the SLT needs to be connected to "Card that Message Lamp can be used" on the PBX.

### 2) MWI Method

WebMC menu : [PBX Configuration]-[Configuration]-[Slot]-[V-SIPEXT]-[Port Property]-[Main]

Port Property - Virtual SIP Extension

Copy to Forced De-registration

Main Option Remote Place FAX/T.38

No.	Shelf	Slot	Port	Extension Number (SIP Username)	Password	Connection	SIP Phone Type	Current IP Address
	ALL			1106		ALL	ALL	
14	Virtual	8	6	1106	1234	INS	Other	10.178.16.174



Port Property - Virtual SIP Extension

Copy to Forced De-registration

Main Option Remote Place FAX/T.38

No.	Shelf	Slot	Port	SIP Phone Type	Current IP Address	P2P Group	P2P Group Name	MWI Method
	ALL					ALL		ALL
14	Virtual	8	6	r	10.178.16.174	1		Unsolicited

For the item "MWI Method", either "Unsolicited" or "Standard" can be set.

If the SIP extension's type (or configuration) is "Subscribe- Disable", leave this value as "Unsolicited" (the default value is "Unsolicited").

On the other hand, if it is "Subscribe- Enable", change the value to "Standard".

**Note: If "Standard" is selected, a maximum of 64 SIP extensions can be used.**



## 2.4 SMDR configuration

In order to use SMDR command to FOS, the following settings are required.

### 2.4.1 Decimal Point Position for Currency

Be sure to set value "2" as Decimal Point Position for Currency, using the following menu on Web Maintenance Console.(Default value is "2")

*PBX Configuration - Feature - Hotel - Charge*

*Charge Options*

*Digits After Decimal Point -> Select "2"*

WebMC menu : [PBX Configuration]-[Feature]-[Hotel & Charge]-[Charge]

The screenshot shows the 'Hotel & Charge' configuration page in the WebMC. The page has a header 'Hotel & Charge' and three tabs: 'Main', 'Bill', and 'Charge'. The 'Charge' tab is selected. Below the tabs, there are two sections: 'Margin & Tax' and 'Charge Options'. The 'Margin & Tax' section has four input fields for percentages: 'Margin Rate for "Telephone" (%)', 'Tax Rate for "Telephone" (%)', 'Tax Rate for "Minibar" (%)', and 'Tax Rate for "Others" (%)', all set to 0.00. The 'Charge Options' section has five settings: 'Digits After Decimal Point' (set to 2, highlighted with a red box), 'Currency (3 characters)', 'Currency Display Position' (set to Head), 'Action at Charge Limit' (set to Alarm), and 'Meter Start on Answer Detection' (set to Disable).

Note:

When a number other than 2 is set as "Digits After Decimal Point", the type of SMDR command is fixed to Charge information (Format 1). In this case, change to the appropriate value which is not the default value for each of the other 3 items (Charge Rate for Trunk Group, Tax Rate and Margin Rate) to be described later as necessary.

(Charge Rate for Trunk Group, Tax Rate and Margin Rate)

### 2.4.2 When using the SMDR command as Meter Pulse information (Format2)

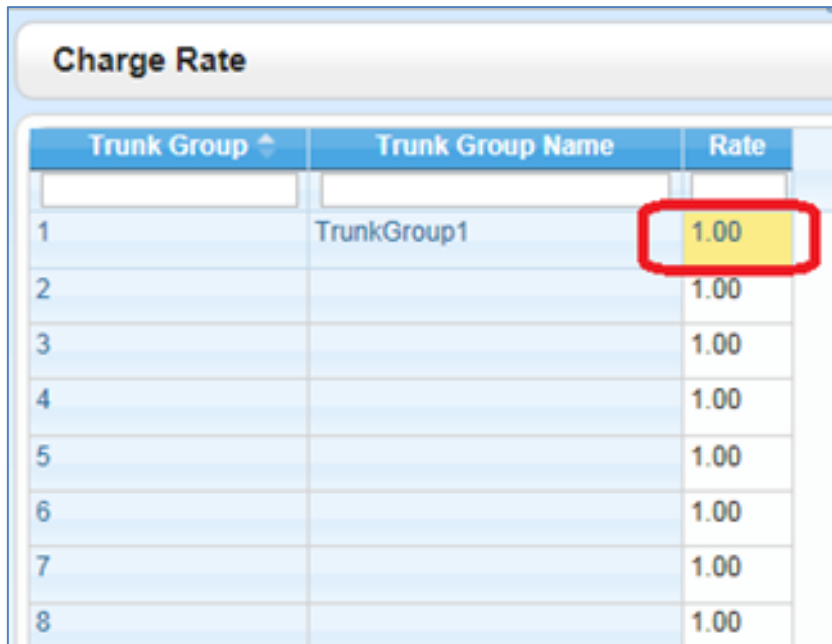
In the case where "2" is set as "Digits After Decimal Point", when FOS needs to receive SMDR command as **Meter Pulse information** (not as Charge information) from PBX, the following settings are needed.

#### (1) Charge Rate for Trunk Group

Set value **1.00** to Charge Rate for Trunk Group, using the following menu on Web Maintenance Console. (Default value is 1.00 )

*PBX Configuration - Group - Trunk Group - Charge Rate*

WebMC menu : [PBX Configuration]-[Group]-[Trunk Group]-[Charge Rate]



Trunk Group	Trunk Group Name	Rate
1	TrunkGroup1	1.00
2		1.00
3		1.00
4		1.00
5		1.00
6		1.00
7		1.00
8		1.00

## (2) Tax Rate and Margin Rate

Set value **0.00** to both of Tax Rate and Margin Rate for "Telephone", using the following menu on Web Maintenance Console. (Both default value is 0.00 )

*PBX Configuration - Feature - Hotel - Charge*

*Margin & Tax*

*Margin Rate for "Telephone" (%) -> Set "0.00"*

*Tax Rate for "Telephone" (%) -> Set "0.00"*

WebMC menu : [PBX Configuration]-[Feature]-[Hotel & Charge]-[Charge]

Hotel & Charge		
Main	Bill	Charge
<b>Margin &amp; Tax</b>		
Margin Rate for "Telephone" (%)	:	0.00
Tax Rate for "Telephone" (%)	:	0.00
Tax Rate for "Minibar" (%)	:	0.00
Tax Rate for "Others" (%)	:	0.00
<b>Charge Options</b>		
Digits After Decimal Point	:	2
Currency (3 characters)	:	
Currency Display Position	:	Head
Action at Charge Limit	:	Alarm
Meter Start on Answer Detection	:	Disable

Note:

In the case where "2" is set as "Digits After Decimal Point", when FOS needs to receive SMDR command as Charge information (format 1) from PBX, change to the appropriate value which is not the default value for each of the other 3 items (Charge Rate for Trunk Group, Tax Rate and Margin Rate).

(Charge Rate for Trunk Group, Tax Rate and Margin Rate)のそれぞれ

### 2.4.3 When using the SMDR command as Charge information (Format 1)

Charge Information is calculated by PBX based on the following calculation method.  
(From Feature Guide of PBX)

**Call charge with tax and margin in meter indication:**

$$\frac{[\text{Meter indication received from the telephone company}] \times [\text{Call Charge Rate}] \times [1 + \text{Tax Rate}]}{[1 - \text{Margin Rate}]}$$

Note: Above "Call Charge Rate" means Charge Rate for Trunk Group

When FOS needs to receive SMDR command as Charge information (Format 1) (not as Meter Pulse information (Format 2)) from PBX, It is necessary at least that "2" is set as "Digits After Decimal Point", and, set appropriate value (not default value) to Charge Rate for Trunk Group and both of Tax Rate and Margin Rate for "Telephone"

### 2.4.4 Relationship between PBX setting pattern and SMDR command format type

The table on the next page shows the relationship between PBX setting pattern for SMDR and SMDR command format type, based on the description of SMDR configuration described above.

**Table: Relationship between PBX setting pattern and SMDR command format type**

Setting of PBX necessary for SMDR				Setting Pattern		
Item	Usage	Value Range	Default Value	1	2	3
<b>Decimal Point Position for Currency</b> (Digits After Decimal Point)	Specifies the number of digits to display after the decimal point for the currency in use.	0-6	2	2	2	Other than 2
<b>Charge Rate for Trunk Group</b> *The rate charged per pay tone signal (sent from the telephone company) can be assigned for each trunk group.	Specifies the call charge rate. The number of decimal places that can be specified here depends on the value set Decimal Point Position for Currency (Digits After Decimal Point)	0 - 9999999	For example, 1.00 when "Digits After Decimal Point" is 2	1.00 (as default value)	Set appropriate values for each of the 3 items. - Charge Rate for Trunk Group - Margin Rate for "Telephone" (%) - Tax Rate for "Telephone" (%)  <b>Note:</b> Don't leave the default value for all the 3 items.  In other words, one or more items must be set to a non-default value to use "Charge information (Format 1)".	
<b>Margin Rate for "Telephone" (%)</b>	Specifies the percentage margin to be added to telephone charges displayed on the guest bill.	0.00 - 99.99 %	0.00	0.00 (as default value)		
<b>Tax Rate for "Telephone" (%)</b>	Specifies the percentage tax rate to be used when calculating guest telephone charges.	0.00 - 99.99 %	0.00	0.00 (as default value)		
<b>SMDR command format by Built-in FOS Interface ---&gt;</b>				<b>Meter Pulse information (Format2)</b>	<b>Charge information (Format 1)</b>	<b>Charge information (Format 1)</b>

## 2.5 COS and TRS

If the hotel application uses "Change COS" command, this setting is necessary. On the other hand, if the hotel application (FOS/PMS) never use "Change COS" command, this setting is unnecessary.

### 2.5.1 Relationship between COS level and COS number

Relationship between Cos level from FOS and COS number in PBX is below. (It is fixed in this system)

CoS level from FOS	COS number in PBX	Meaning
0	1	<b>Block</b> only 'Intercom'(room-to-room-only) and 'Emergency' calls can be made
1	2	<b>Local Call</b> (up to local)
2	3	<b>National Call</b> National and Local (up to National and Mobile phone)
3	4	<b>Unblock All Call</b> (up to International)

### 2.5.2 Extension Settings

As PBX configuration, it is recommended to assign "4"(Unblock All Call) to COS number of each guest room extension in advance if there are no special circumstances.

Example of PBX setting screen for Extension:

WebMC menu : [PBX Configuration]-[Extension]-[Wired Extension]-[Extension Settings]-[Main]

No.:	Extension Number	Extension Name (20 characters)	Site	Shelf	Slot	Port	Port Type	Telephone Type	User Group	COS
14	114		1	Virtual	17	14	IP-EXT	No Connection	31	4
15	115		1	Virtual	17	15	IP-EXT	No Connection	31	4
16	116		1	Virtual	17	16	IP-EXT	No Connection	31	4
17	117		1	Virtual	17	17	IP-EXT	No Connection	31	4
18	118		1	Virtual	17	18	IP-EXT	No Connection	31	4
19	119		1	Virtual	17	19	IP-EXT	No Connection	31	4

### 2.5.3 COS Settings

For each COS Number (1-4), relationship between the COS number and TRS level is needed to be set in PBX in advance as the following table

COS Number	COS Name (Meaning)	TRS Level				
		Day	Lunch	Break	Night	on Extension Lock
1	Block	7	7	7	7	7
2	Local Call	3	3	3	3	7
3	National Call	2	2	2	2	7
4	Unblock All Call	1	1	1	1	7

Example of PBX setting screen for relationship between COS number and TRS level :

WebMC menu : [PBX Configuration]-[System]-[Class of Service]-[COS Settings]-[TRS]

COS No.	COS Name	TRS Level - Day	TRS Level - Lunch	TRS Level - Break	TRS Level - Night	TRS Level on Extension Lock
1	BLOCK	7	7	7	7	7
2	Local Call	3	3	3	3	7
3	National Call	2	2	2	2	7
4	Unblock All Call	1	1	1	1	7

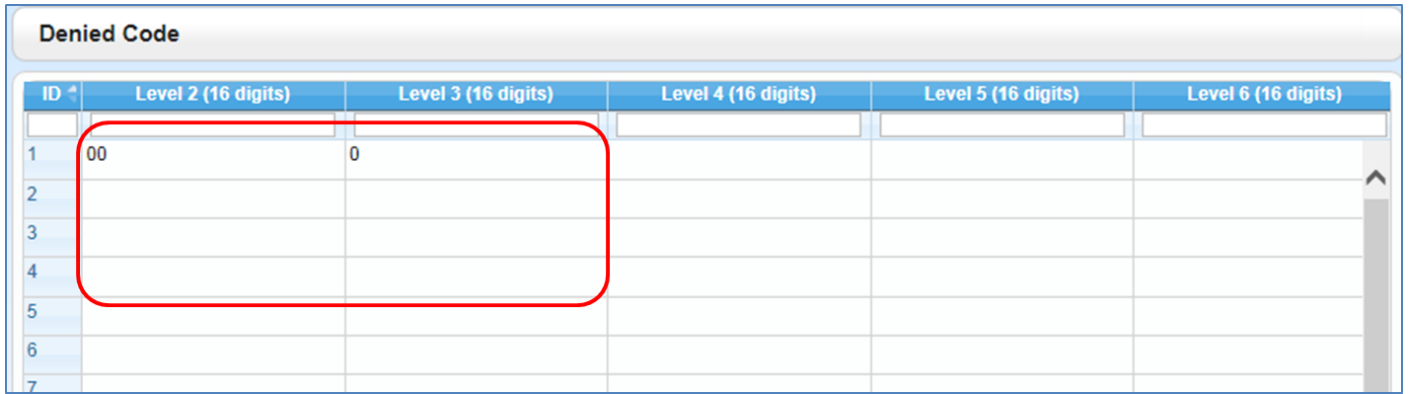
### 2.5.4 TRS-Denied Code

For TRS Level 2 and 3, Denied Code is needed to be set in PBX in advance as the following table.

TRS Level	Meaning	Denied Code (basic case)				
		ID-1	ID-2	ID-3	ID-4	...
7	Block	Not Programmable				
3	For Local Call TRS Level 2 and 3 are applied.	0: National Leading number to deny Long distance calls	-	-	-	-
2	For National Call Only TRS Level 2 is applied.	00: International Leading number to deny international calls	-	-	-	-
1	Unblock All Call	Not Programmable				

For each TRS level, it is possible to configure multiple Denied Codes.  
And, it is necessary to set the appropriate Denied Code in accordance with the call situation of the region to be operational.

Example of PBX setting screen for relationship between TRS level and Denied Code:  
WebMC menu : [PBX Configuration]-[TRS]-[Denied Code]



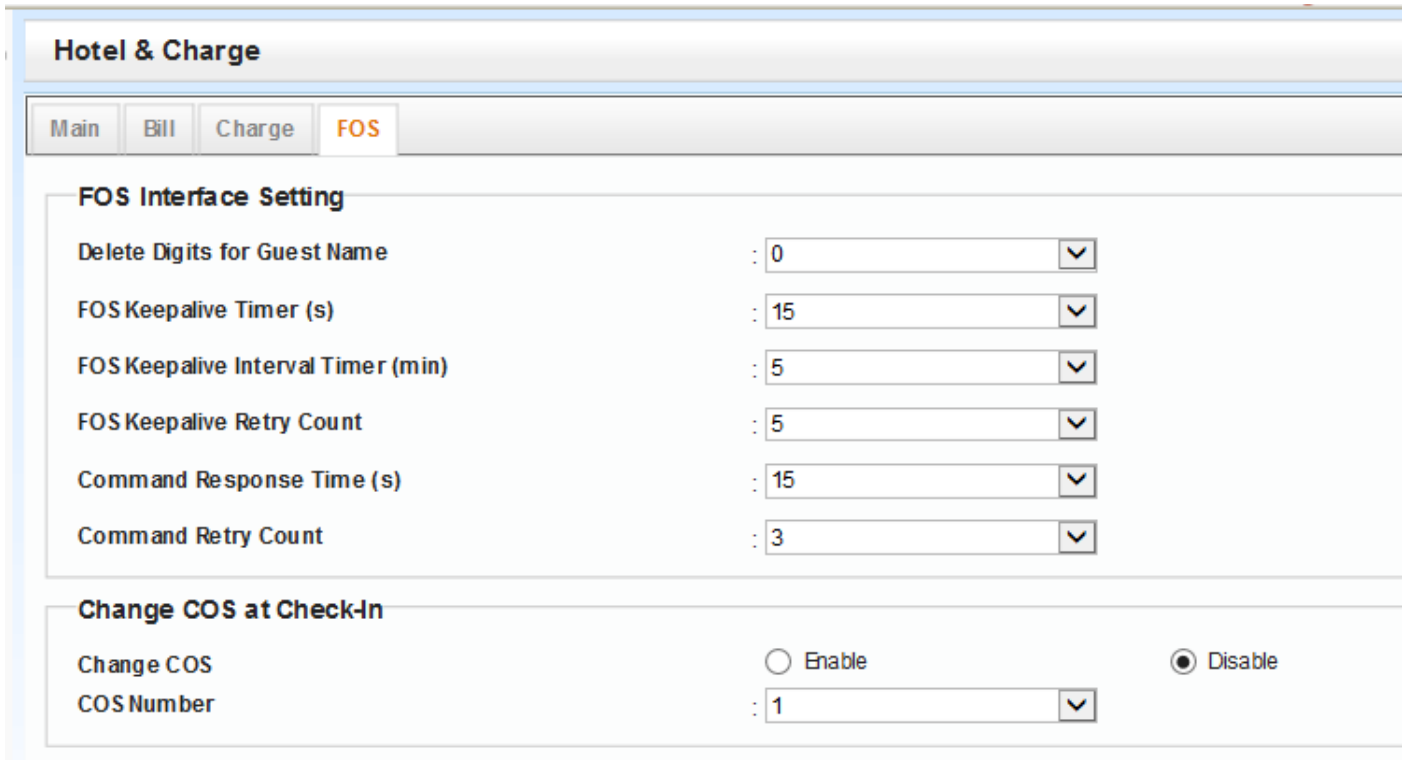
ID	Level 2 (16 digits)	Level 3 (16 digits)	Level 4 (16 digits)	Level 5 (16 digits)	Level 6 (16 digits)
1	00	0			
2					
3					
4					
5					
6					
7					

## 2.6 Others

Only when System option Reserved Bit (Number 19h-1 : to enable FOS Interface feature) is "Enable", WebMC can display FOS tab on the screen which is "Setup-PBX Configuration-6.Feature-2.Hotel & Charge"

However, even if this option bit is still Disabling, FOS interface feature can be work with default setting for Hotel & Charge-FOS.

WebMC menu : [PBX Configuration]-[Feature]-[Hotel & Charge]



**Hotel & Charge**

Main Bill Charge **FOS**

**FOS Interface Setting**

Delete Digits for Guest Name : 0

FOS Keepalive Timer (s) : 15

FOS Keepalive Interval Timer (min) : 5

FOS Keepalive Retry Count : 5

Command Response Time (s) : 15

Command Retry Count : 3

**Change COS at Check-In**

Change COS  Enable  Disable

COS Number : 1

### 2.6.1 Delete Digits for Guest Name

Set the number of deleted digits from the head of the Guest name (Extension name) posted on the Check In or Guest Change command from FOS. ( Used to delete Mr. or Ms. ) ( Default value: 0 digit )

### 2.6.2 FOS Keepalive

Set the following two timers for Alive-Check between PBX and FOS

#### -FOS Keepalive Timer (s)

Maximum time (Timeout time) from sending Keepalive command from PBX to FOS, until receiving Keepalive response from FOS ( Default value: 15 seconds )

-FOS Keepalive Interval Timer (min) Time from sending Keepalive command until next sending Keepalive command (Default value: 5 minutes)

-FOS Keepalive Retry Count Maximum number of times to retry sending Keepalive command, when Keepalive response from FOS has not been received after sending the Keepalive



command previously. (Default value: 5 times)

### 2.6.3 Command Response

#### -Command Response Time (s)

Maximum time (Timeout time) from sending commands from PBX until receiving response (ACK / NAK) from FOS . (Default value: 15 seconds)

-**Command Retry Count** Maximum number of times to retry sending command when response from FOS is not received (Default value: 3 times)

### 2.6.4 Change COS at Check-In

At Check In or Guest Change, make the following setting so that it can be automatically changed to the specified COS number.

#### -Change COS

Setting whether to change to the specified COS number (not CoS level) at Check In or Guest Change. (Default value: Disable)

#### -COS Number

Setting of COS number (not CoS level) to be changed automatically at Check In or Guest Change. (Default value: COS 1)

### 3 Trouble Shooting

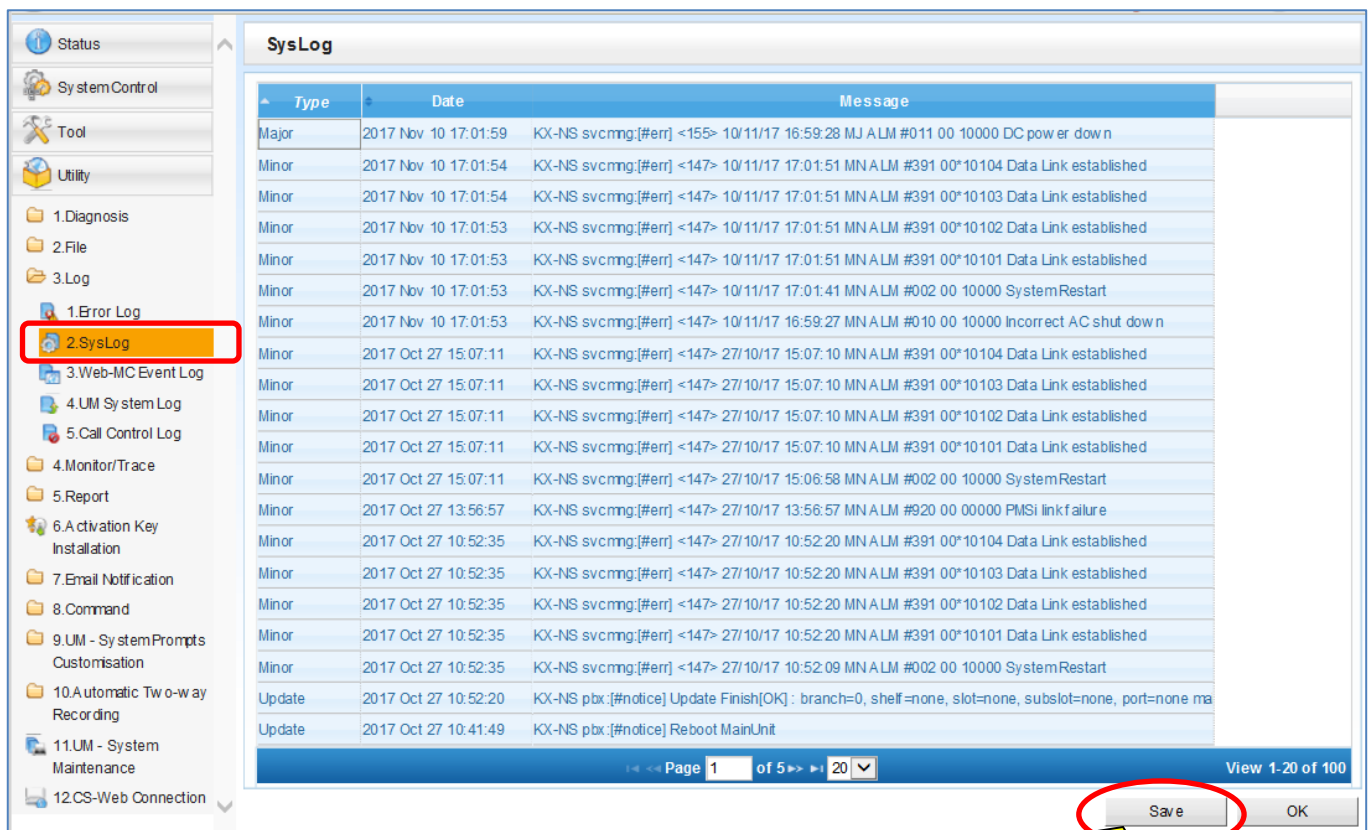
When you encountered any trouble related to PBX-FOS Interface, if the cause of the trouble cannot be found, please contact the nearest Sales Company or CS-team of our company with the following information on the trouble.

1. Explain the phenomenon concretely about the trouble.
2. Inform the date and time when the trouble occurred as accurately as possible.
3. Obtain **Syslog\*** accumulated in the PBX. (Syslog includes communication log for the interface between FOS and PBX, configuration information of PBX, and other logs.)

**\* Syslog:**

Syslog can be obtained using PBX's WebMC (Web Maintenance Console) as follows.

WebMC menu : [Utility]-[Log]-[Syslog]



A file "allog\*\*\*\*\*.zip" will be output as Syslog, after the Save button is pressed. Please send the zip file.

[End of Document]