



Avaya Solution & Interoperability Test Lab

Application Notes for Imagine Soft Meteor SE with Avaya IP Office – Issue 1.0

Abstract

These Application Notes describe the compliance testing of Imagine Soft Meteor SE with Avaya IP Office. Meteor SE is used in hospitality industries to assist with check in/check out and telephone usage authorization.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

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1. Introduction

The Imagine Soft Meteor SE Server provides various telephony capabilities which help meet the needs of the hospitality industry. Meteor SE has the following capabilities which interact with Avaya IP Office:

- Meteor SE provides a check-in/check-out facility which changes telephone access privileges, providing telephone access to guests immediately upon check-in, and preventing unauthorized use after check-out.
- Meteor SE can assign a name to the telephone upon check-in, so that hotel or hospital staff can immediately recognize guests or patients from whom they receive telephone calls.
- Meteor SE allows hotel personnel to update room status via telephone to indicate the state of the room (i.e. it has been serviced by housekeeping, etc.).
- Meteor SE allows hotel guests to retrieve voicemail messages via external telephones attached to the PSTN.
- Meteor SE allows each hotel guest to program WAKEUP in his own language (6 languages) and hotel staff to verify wakeup status.
- Meteor SE can assign Direct Inward Dial (DID) extensions to hotel guests to enable them to have a telephone number independent of their room number which can be called from PSTN telephones, allowing guests to be reached by the same number, even though they may change hotel rooms.

1.1. Interoperability Compliance Testing

The following tests were performed as part of the compliance testing.

- Perform a guest checkin and verify that the guest's name is assigned to the telephone assigned to the guest's room, and that the guest is able to make calls via the PSTN.
- Perform a guest checkout and verify that the guest's name no longer assigned to the telephone, that the telephone can no longer make external calls, that the MWI light goes out if it was on prior to checkout, and any wakeup calls pending for that guest are removed.
- Verify that a room change causes the guest's messages, MWI status, calling privileges, station name, and wakeup calls to be assigned to the new extension.
- Verify that the system administrator can manually turn on or off a guest telephone's MWI lamp.
- Verify that local and external calls can leave messages for guests, and the guest can retrieve these messages, and that the state of the MWI lamp changes correctly.
- Verify that wakeup calls can be created or erased by either guests or administrators, and the wakeup calls are signaled correctly to guests.
- Verify that guests are billed correctly for local and external calls.
- Verify that DND can be activated or deactivated correctly by the administrator, and the incoming calls are blocked correctly.

- Verify that DIDs can be assigned to guests, and can be called correctly from external telephones.
- Verify that guest telephones can be used to update room status (i.e., serviced by housekeeping).
- Verify the ability of the Meteor SE server to recover from interface and power interruptions.

1.2. Support

Support is available from Imagine Soft at:

- Telephone: +33 491327432
- FAX: +33 491327401
- Email: hotline1@Imagine Soft.fr

2. Reference Configuration

The following diagram illustrates the configuration which was used for testing.

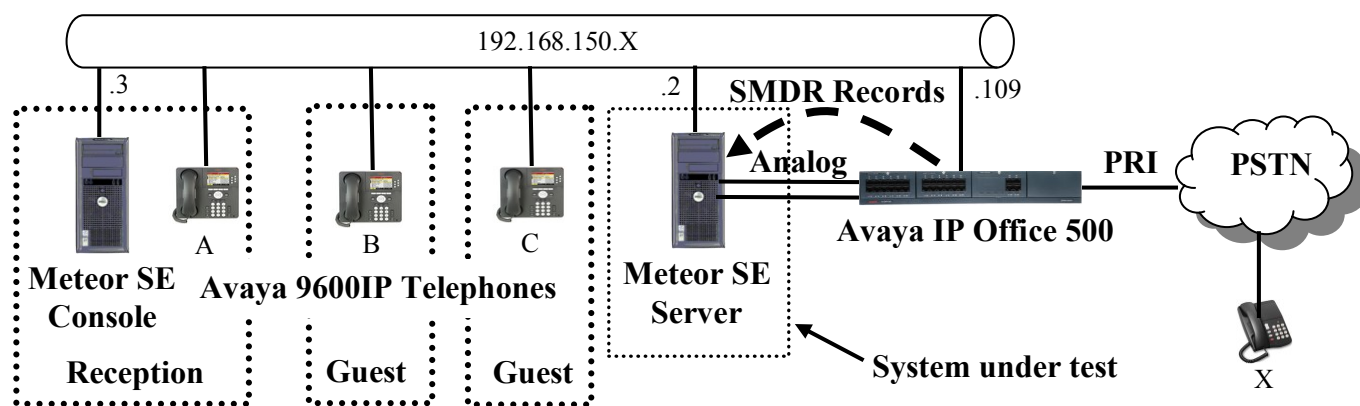


Figure 1: Imagine Soft Meteor SE Configuration

The function of the components in the above figure is as follows:

- The Avaya IP Office has a PRI trunk interface to the Public Switched Telephone Network (PSTN) over which it can make and receive external calls.
- Avaya IP Office 500 sends SMDR records to the Meteor SE server as call events occur.
- The analog trunks between Meteor SE and IP Office are used to send announcements and wake-up messages to guest telephones. The number of trunks required is dependent on the number of guest extensions.

The Meteor SE Console application is browser-based, so no special software needs to be installed on Meteor SE Console PC

The following table contains additional information about each of the telephones contained in the above diagram. Note that for this configuration, the guest room and extension are the same.

Endpoint	Ext	DDI	Description	Endpoint
A (Guest)	5113	4113	Figure 11	Avaya 9640
B (Guest)	5114	4114	Figure 11	Avaya 9640
C (Reception)	5126		Figure 10	Avaya 9650
Meteor SE IVR HG	5900		Figure 31	
Meteor SE DDI HG	5999		Figure 32	
Meteor SE IVR 1	5901		Figure 9, Figure 13	
Meteor SE IVR 2	5902		Figure 9, Figure 13	
Meteor DDI	5998		Figure 16	
X (PSTN Telephone)			Figure 34	ISDN

Table 1: Extensions Used for Testing

3. Validated Equipment and Software

Software Component	Version
Avaya IP Office Manager	8.0 (8)
Avaya IP Office	6.0 (8)
Avaya 9600 IP Telephones	S3.110B
MS Internet Explorer (Meteor Client)	8.0
MySQL	4.0.18
Tomcat	6.0.14
MS C++ Runtime	2005 SP1
MS .net	3.5 SP1
Meteor SE	4.2.3
Dialogic Interface SW	SR5.1.1
Dialogic D4PCI Analog Telephone Interface	D/4PCI
MS XP Professional	SP2

Table 2: Version Numbers of Equipment and Software

The Meteor client application is browser-based and runs with any version of Microsoft Internet Explorer from 5.0 to 8.0.

The MySQL and Tomcat packages are silently installed during the Meteor installation. The MS C++ Runtime and MS .net packages must be installed manually.

There is a newer version of the Dialogic Interface card available with the designation SR6. This interface was not tested with the Avaya IP Office during DevConnect testing, but is indicated by Imagine Soft to be compatible with their application.

4. Avaya IP Office Configuration

The configuration and verification operations illustrated in this section were performed using the Avaya IP Office Manager program. When this program is started, a tree structure consisting of icons representing the configurable components of the system is displayed. When one of these icons is selected, the corresponding system component can be configured.

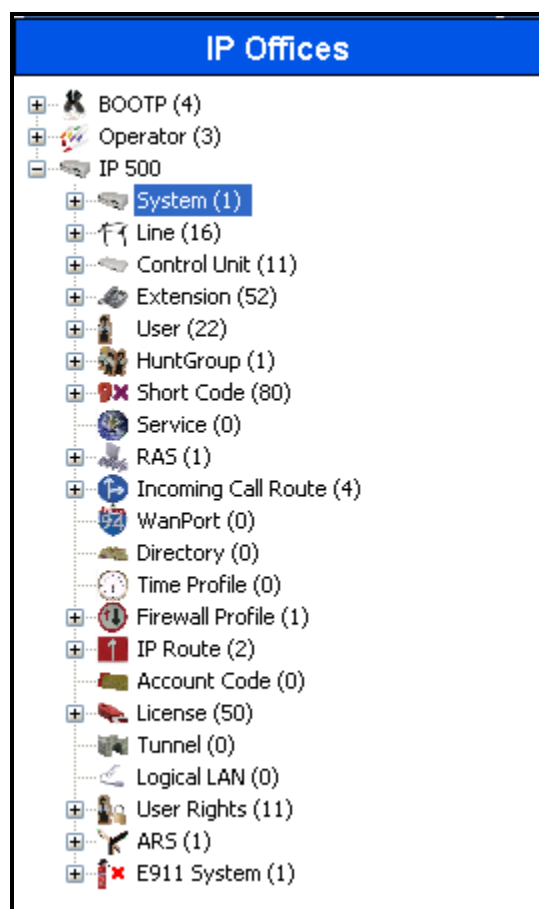


Figure 2: IPO Manager Component Tree

4.1. Licensing

No extra Avaya IP Office licenses are required to use Meteor SE.

4.2. Security Level

Log in to the IPO “Security” configuration of the IPO Manager, and select “Services”, “Configuration”, as shown below. Set the “Service Security Level” to “Unsecure + Secure” and select “OK”.

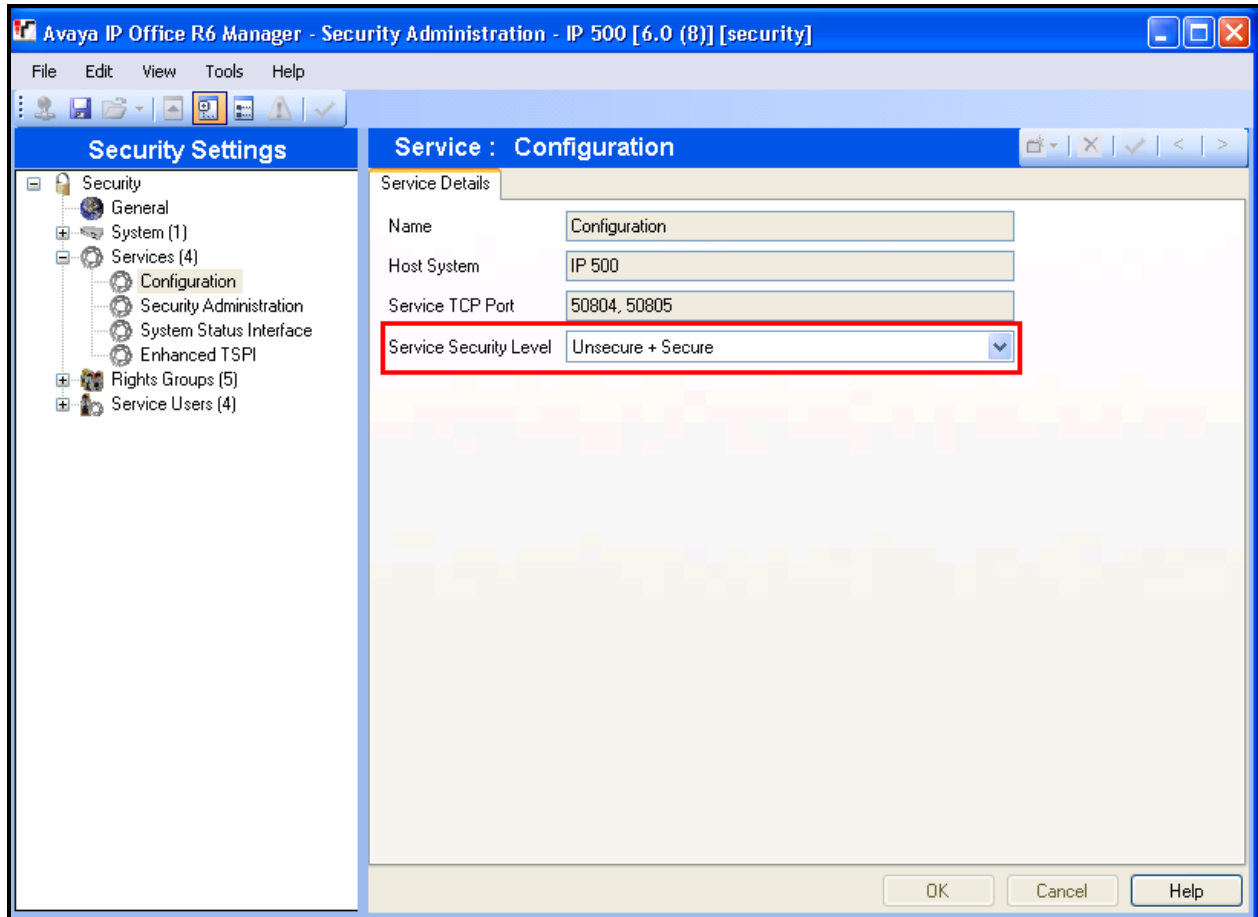


Figure 3: Security Parameters

4.3. System

Select the “System” icon shown in **Figure 2**, and set the parameters as shown in the following table. Select the tab shown in the “Tab” column to configure the parameters for that tab.

Tab	Parameter	Usage
System	Time Offset	Enter the time offset to GMT in hours/minutes.
	Time Server IP Address	Enter the IP address of a time server.
	Locale	Enter the name of the locale for the region in which the IPO is to be used. Testing was done using the “France” local.
LAN1	IP Address	Specify the IP address to be assigned to IP Office. Note that this must match the value specified in Figure 51 .
	IP Mask	Enter the IP mask to be used by the LAN.
Voicemail	Voicemail Type	Specify “none”.
SMDR	Output	Select “SMDR Only” from the drop-down menu.
	IP Address	Enter the IP address of the Meteor SE server.
	TCP Port	Enter the port from Meteor SE reads SMDR records. This should match the parameter which is set in Figure 53 .

Table 3: System Configuration Parameters

IP 500

System

LAN1

LAN2

DNS

Voicemail

Telephony

Directory Services

System Events

SMTP

SMDR

Twining

VCM

CCR

Name

IP 500

Locale

France (French)

Contact Information

Set contact information to place System under special control

Time Offset (hours:minutes)

02:00

TFTP Server IP Address

0 . 0 . 0 . 0

Branch Prefix

HTTP Server IP Address

0 . 0 . 0 . 0

Local Number Length

Phone File Server Type

Custom

Manager PC IP Address

0 . 0 . 0 . 0

Avaya HTTP Clients Only

☒

Enable SoftPhone HTTP Provisioning

☐

Time Server IP Address

132 . 163 . 4 . 103

File Writer IP Address

0 . 0 . 0 . 0

Dongle Serial Number

Local 5118143

AVPP IP Address

0 . 0 . 0 . 0

☐ Hide auto recording

☐ Favour RIP Routes, over static routes

Figure 4: System Parameters

IP 500

System LAN1 LAN2 DNS Voicemail Telephony Directory Services System Events SMTP SMDR

LAN Settings VoIP Network Topology SIP Registrar

IP Address 192 . 168 . 150 . 109

IP Mask 255 . 255 . 255 . 0

Primary Trans. IP Address 0 . 0 . 0 . 0

RIP Mode None

☐ Enable NAT

Number Of DHCP IP Addresses 200

DHCP Mode

☐ Server ☐ Client ☐ Dialin ☒ Disabled

Advanced

Figure 5: System Parameters: LAN1

IP 500*

System LAN1 LAN2 DNS Voicemail Telephony Directory Services System Events SMTP SMDR

Voicemail Type <None>

☐ Messages Button Goes To

Voicemail Destination

Voicemail IP Address 192 . 168 . 150 . 2

Backup Voicemail IP Address 0 . 0 . 0 . 0

Voicemail Channel Reservation

Unreserved Channels 259

Auto-Attendant 0 Voice Recording 0 Mandatory Voice Recording 0

Announcements 0 Mailbox Access 0

Figure 6: System Parameters: Voicemail

Figure 7: System Parameters: SMDR

4.4. Extensions

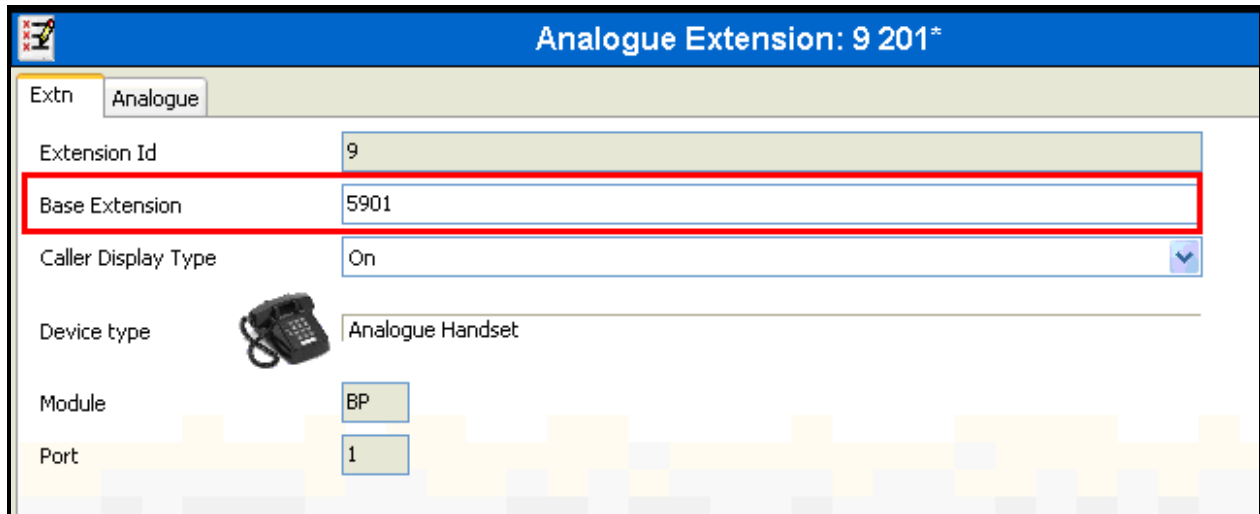
4.4.1. Create Administrator and Guest Extensions

Select the “Extensions” icon shown in **Figure 2** and enter and click “new” to create an extension for each of the Administrators and Guests shown in **Table 1**. Set the “Base Extension” parameter to extension to be assigned, and accept the defaults values for the remaining parameters.

Figure 8: Administrator and Guest Extension

4.4.2. Analog Extensions for Meteor SE IVR Interface

Create an extension for the analog interface to Meteor SE which is used for IVR. Repeat this for the other “IVR” extensions show in **Table 1**.



The screenshot shows a web interface for configuring an analogue extension. The title bar is blue and reads "Analogue Extension: 9 201*". Below the title bar, there are two tabs: "Extn" and "Analogue". The "Analogue" tab is selected. The form contains the following fields:

Extension Id	9
Base Extension	5901
Caller Display Type	On
Device type	Analogue Handset
Module	BP
Port	1

A red rectangle highlights the "Base Extension" field, which contains the value "5901".

Figure 9: Analog Extension for IVR Interface

4.5. Create Users

4.5.1. Create Users for Administrators

Select the “Users” icon shown in **Figure 2** and click “new” to create a user for each guest and administrator shown in **Table 1**. Specify a descriptive name in the “Name” field and the extension (which was allocated in **Figure 8**) in the “Extension” field.

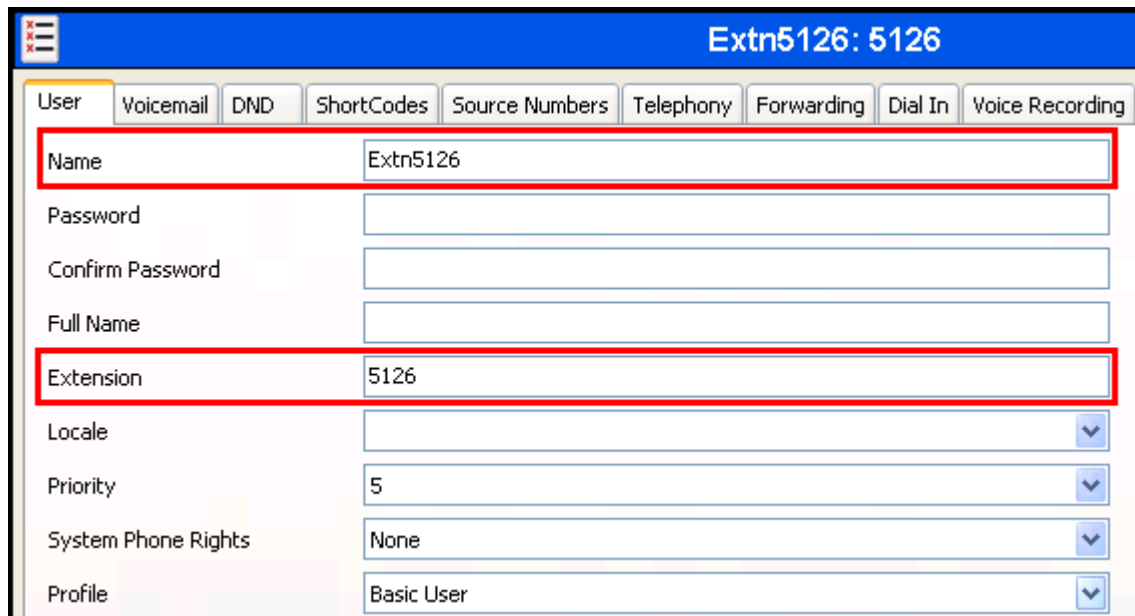


Figure 10: Administrator User

4.5.2. Create Users for Guests

Create a user for each guest extension shown in **Table 1** using the parameters shown in the following table. Select the tab shown in the “Tab” column to configure the parameters for that tab.

Tab	Parameter	Usage
User	Name	Enter a descriptive name to identify the room.
	Extension	Enter the telephone extension to be assigned to the endpoint.
Forwarding	Forward On Busy	Check this box.
	Forward On No Answer	Check this box.
	Forward Number	Specify the short code to record messages, configured in Figure 26 , along with the guest’s room extension.
	Forward Internal calls	Check this box

Table 4: Guest User Configuration Parameters

Exttn5113: 5113

User Voicemail DND ShortCodes Source Numbers Telephony Forwarding Dial In Voice Recording

Name Exttn5113

Password

Confirm Password

Full Name

Extension 5113

Locale

Priority 5

System Phone Rights None

Profile Basic User

Figure 11: Guest User

Exttn5113: 5113

User Voicemail DND ShortCodes Source Numbers Telephony Forwarding Dial In Voice Recording

Follow Me Number

Forward Unconditional ☐

Forward Number

Forward Hunt Group Calls ☐

Forward Internal Calls ☒

Forward On Busy ☒

Forward On No Answer ☒

Forward Number *95*5113

Forward Internal calls ☒

Figure 12: Guest User Forwarding

4.5.3. Create Users for Meteor SE IVR Interface

Create a user for each analog IVR interface to Meteor SE shown in **Table 1**. Specify a descriptive name in the “Name” field and the extension (which was allocated in **Figure 9**) in the “Extension” field.

The screenshot shows a web-based configuration interface for an IVR system. The title bar at the top reads 'IVR5901: 5901*'. Below the title bar is a navigation menu with tabs: User, Voicemail, DND, ShortCodes, Source Numbers, Telephony, Forwarding, Dial In, and Voice Recording. The 'User' tab is currently selected. The main form contains several input fields: 'Name' (containing 'IVR5901'), 'Password', 'Confirm Password', 'Full Name', 'Extension' (containing '5901'), 'Locale' (a dropdown menu), 'Priority' (containing '5'), 'System Phone Rights' (containing 'None'), and 'Profile' (containing 'Basic User'). The 'Name' and 'Extension' fields are highlighted with red rectangles.

Figure 13: IVR User

4.5.4. Create Virtual Users for DDI

Allocate DDI extensions for each of the guests listed in **Table 1**, as described in the following table. Calls to this number will forward immediately to the guest’s extension. Select the tab shown in the “Tab” column to configure the parameters for that tab.

Tab	Parameter	Usage
User	Name	Enter an appropriate name to be used for identification purposes.
	Extension	Enter the DDI extension for this guest, as shown in Table 1 .
Forwarding	Forward Unconditional	Check this box.
	Forward Number	Specify the short code to record messages, configured in Figure 26 , along with the DDI extension.
	Forward Hunt Group Calls	Check this box.
	Forward Internal Calls	Check this box.

Table 5: Virtual DDI Configuration Parameters

Ext4113: 4113

UserVoicemailDNDShortCodesSource NumbersTelephonyForwardingDial InVoice Recording

Name

Ext4113

Password

Confirm Password

Full Name

Extension

4113

Locale

Priority

5

System Phone Rights

None

Profile

Basic User

Figure 14: Virtual Extension for DDI: User

The forward number contains the room number.

The screenshot displays the 'Forwarding' configuration interface for extension 4113. The top navigation bar includes tabs for User, Voicemail, DND, ShortCodes, Source Numbers, Telephony, Forwarding (selected), Dial In, and Voice Recording. Below the tabs, there is a 'Follow Me Number' dropdown menu. A red rectangular box highlights the 'Forward Unconditional' section, which contains the following settings:

- Forward Unconditional: ☒
- To Voicemail: ☐
- Forward Number: *95*4113 (dropdown menu)
- Forward Hunt Group Calls: ☒
- Forward Internal Calls: ☒

Below the highlighted section, there is another group of settings for conditional forwarding:

- Forward On Busy: ☐
- Forward On No Answer: ☐
- Forward Number: (empty dropdown menu)
- Forward Internal calls: ☒

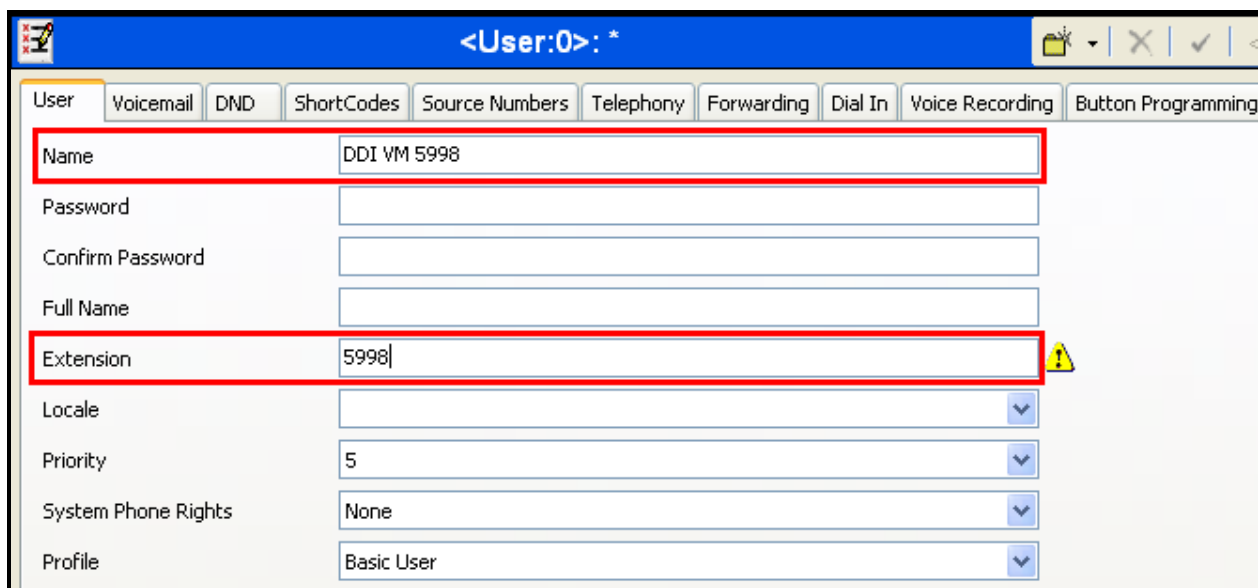
Figure 15: Virtual Extension for DDI: Forwarding

4.5.5. Create a Virtual Users for External Calls to IVR

Create a virtual extension which can be called externally via the PSTN. This extension is configured to forward unconditionally to the IVR hunt group so that external callers will be immediately connected to the voicemail system. Select the tab shown in the “Tab” column to configure the parameters for that tab.

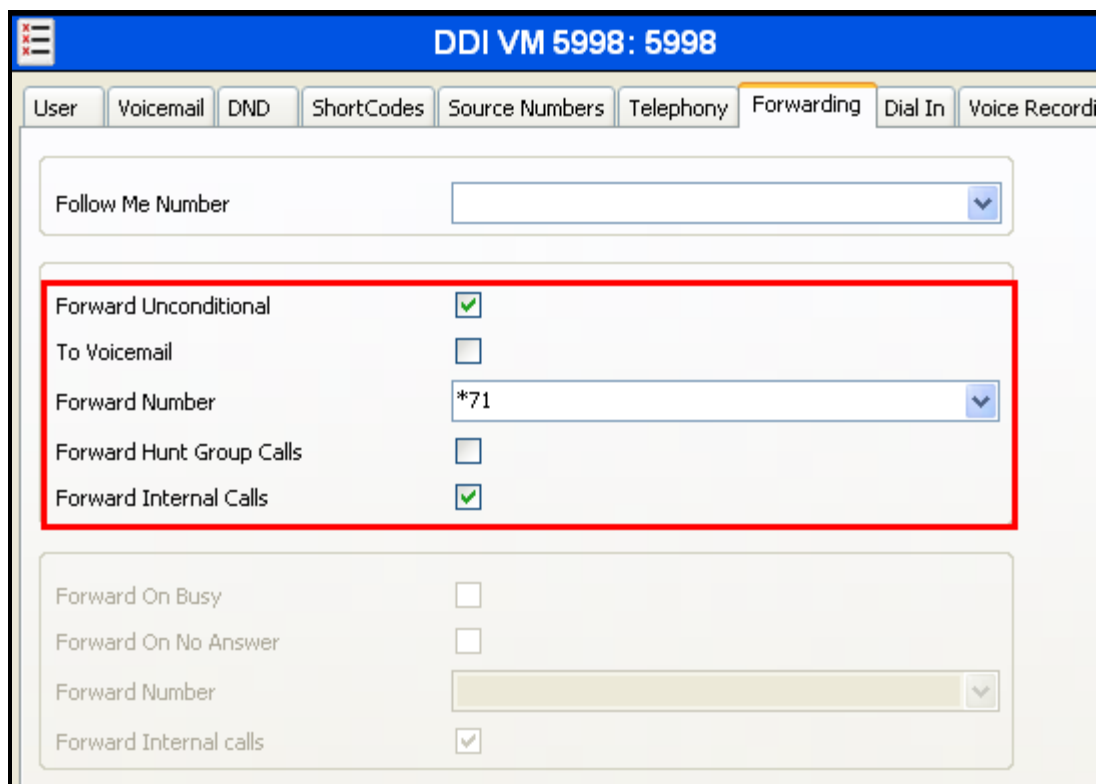
Tab	Parameter	Usage
User	Name	Enter an appropriate name to be used for identification purposes.
	Extension	Enter the Meteor DDI extension, as shown in Table 1 .
Forwarding	Forward Unconditional	Check this box.
	Forward Number	Specify the Forward DDI Call to IVR Hunt Group shortcode shown in Figure 30 .
	Forward Hunt Group Calls	Uncheck this box.
	Forward Internal Calls	Check this box.

Table 6: DDI Incoming Call User Parameters



<User:0>: *	
User	Voicemail DND ShortCodes Source Numbers Telephony Forwarding Dial In Voice Recording Button Programming
Name	DDI VM 5998
Password	
Confirm Password	
Full Name	
Extension	5998
Locale	
Priority	5
System Phone Rights	None
Profile	Basic User

Figure 16: DDI Incoming Call User: User Tab



DDI VM 5998: 5998	
User	Voicemail DND ShortCodes Source Numbers Telephony Forwarding Dial In Voice Recording
Follow Me Number	
Forward Unconditional	<input checked="" type="checkbox"/>
To Voicemail	<input type="checkbox"/>
Forward Number	*71
Forward Hunt Group Calls	<input type="checkbox"/>
Forward Internal Calls	<input checked="" type="checkbox"/>
Forward On Busy	<input type="checkbox"/>
Forward On No Answer	<input type="checkbox"/>
Forward Number	
Forward Internal calls	<input checked="" type="checkbox"/>

Figure 17: DDI Incoming Call User: Forwarding Tab

4.6. User Rights

For each of the items shown in the following table, right-click the “User Rights” icon shown in **Figure 2** select “new”. and specify the user rights as shown in the following table. Select the tab shown in the “Tab” column to configure the parameters for that tab.

Item	Tab	Parameter	Usage
checkin	User	Name	Enter “checkin”.
	Telephony -> Supervisor Settings	Outgoing call bar	Uncheck the box “Enable outgoing call bar” and select “Apply User Rights value” from the drop-down menu.
checkout	User	Name	Enter “checkout”.
	Telephony -> Supervisor Settings	Outgoing call bar	Check the box “Enable outgoing call bar” and select “Apply User Rights value” from the drop-down menu.
dnd	User	Name	Enter “dnd”.
		Enable do not disturb	Check this box.
	Telephony -> Supervisor Settings	Outgoing call bar	Uncheck the box “Enable outgoing call bar” and select “Apply User Rights value” from the drop-down menu.

Table 7: User Rights Configuration Parameters

Figure 18: User Rights: checkin: User

checkin

UserShortCodesButton ProgrammingPhone ManagerTelephonyUser Rights membershipVoicemail

Call SettingsSupervisor SettingsMulti-line OptionsCall Log

Intrusion

☐ Can intrude

Not part of User Rights

☒ Cannot be intruded

Not part of User Rights

Force login

☐ Enable force login

Not part of User Rights

Force account code

☐ Enable force account code

Not part of User Rights

Inhibit Off-Switch Forward/Transfer

☐ Enable Inhibit Off-Switch Forward/Transfer

Not part of User Rights

CCR Agent

☐ Enable CCR Agent

Not part of User Rights

After Call Work Time (seconds)

System Default (10)

Not part of User Rights

☐ Enable Automatic After Call Work

Not part of User Rights

Outgoing call bar

☐ Enable outgoing call bar

Apply User Rights value

Coverage Group

<None>

Not part of User Rights

Figure 19: User Rights: checkin: Telephony: Supervisor Settings

The screenshot shows a web-based configuration interface for a user named 'checkout'. The interface has a blue header bar with the title 'checkout' and several navigation tabs: 'User', 'ShortCodes', 'Button Programming', 'Phone Manager', 'Telephony', 'User Rights membership', and 'Voicemail'. The 'User' tab is currently selected. Below the tabs, the 'Name' field is highlighted with a red border and contains the text 'checkout'. Underneath the name field, there are three sections, each with a dropdown menu:

- Locale:** The dropdown menu is set to 'Not part of User Rights'.
- Priority:** The dropdown menu is set to 'Not part of User Rights'.
- Do not disturb:** There is a checkbox labeled 'Enable do not disturb' which is currently unchecked. The dropdown menu is set to 'Not part of User Rights'.

Figure 20: User Rights: checkout: User

checkout

User

ShortCodes

Button Programming

Phone Manager

Telephony

User Rights membership

Voicemail

Call Settings

Supervisor Settings

Multi-line Options

Call Log

Intrusion

Can intrude

Not part of User Rights

Cannot be intruded

Not part of User Rights

Force login

Enable force login

Not part of User Rights

Force account code

Enable force account code

Not part of User Rights

Inhibit Off-Switch Forward/Transfer

Enable Inhibit Off-Switch Forward/Transfer

Not part of User Rights

CCR Agent

Enable CCR Agent

Not part of User Rights

After Call Work Time (seconds)

System Default (10)

Not part of User Rights

Enable Automatic After Call Work

Not part of User Rights

Outgoing call bar

Enable outgoing call bar

Apply User Rights value

Coverage Group

<None>

Not part of User Rights

Figure 21: User Rights: checkout: Telephony: Supervisor Settings

The screenshot shows a web-based configuration interface for a user's 'Do Not Disturb' (dnd) settings. The interface has a blue header bar with the title 'dnd' and standard window controls (minimize, maximize, close, and a back arrow). Below the header is a horizontal tab bar with the following tabs: 'User' (active), 'ShortCodes', 'Button Programming', 'Phone Manager', 'Telephony', 'User Rights membership', and 'Voicemail'. The 'User' tab is selected, displaying the following configuration fields:

- Name:** A text input field containing the value 'dnd'.
- Locale:** A dropdown menu that is currently empty.
- Priority:** A dropdown menu containing the value '5'.
- Do not disturb:** A section containing a checked checkbox labeled 'Enable do not disturb' and a dropdown menu set to 'Apply User Rights value'.

Red rectangles are drawn around the 'Name' field and the 'Do not disturb' section, highlighting these specific areas of the configuration.

Figure 22: User Rights: dnd: User

dnd

User

ShortCodes

Button Programming

Phone Manager

Telephony

User Rights membership

Voicemail

Call Settings

Supervisor Settings

Multi-line Options

Call Log

Intrusion

Can intrude

Not part of User Rights

Cannot be intruded

Not part of User Rights

Force login

Enable force login

Not part of User Rights

Force account code

Enable force account code

Not part of User Rights

Inhibit Off-Switch Forward/Transfer

Enable Inhibit Off-Switch Forward/Transfer

Not part of User Rights

CCR Agent

Enable CCR Agent

Not part of User Rights

After Call Work Time (seconds)

System Default (10)

Not part of User Rights

Enable Automatic After Call Work

Not part of User Rights

Outgoing call bar

Enable outgoing call bar

Apply User Rights value

Coverage Group

<None>

Not part of User Rights

Figure 23: User Rights: dnd: Telephony: Supervisor Settings

4.7. Short Codes

Select the “Short Code” icon shown in **Figure 2** and click “new” to allocate the short codes shown in the following table. Select the tab shown in the “Tab” column to configure the parameters for that tab.

Short code	Parameter	Usage
Guest IVR	Code	Enter *93
	Feature	Select Dial Extn from the drop-down menu.
	Telephone Number	Enter 5900D,,3*E# . 5900 is the extension assigned to the IVR Hunt Group in Figure 31 .
Set room status	Code	Enter *94
	Feature	Select Dial Extn from the drop-down menu.
	Telephone Number	Enter 5900D,,5*E# . 5900 is the extension assigned to the IVR Hunt Group in Figure 31 .
Recode message	Code	Enter *95
	Feature	Select Dial Extn from the drop-down menu.
	Telephone Number	Enter 5900D,,2*N# . 5900 is the extension assigned to the IVR Hunt Group in Figure 31 .
Turn ON MWI	Code	Enter *97*N#
	Feature	Select Display Msg from the drop-down menu.
	Telephone Number	Enter N”;MWL Msgs=1 Old=0 Sav=0” .
Turn OFF MWI	Code	Enter *98*N#
	Feature	Select Display Msg from the drop-down menu.
	Telephone Number	Enter N”;MWL Msgs=0 Old=0 Sav=0” .
PSTN Incoming Call	Code	Enter 0N
	Feature	Select Dial from the drop-down menu.
	Telephone Number	Enter NSi followed by the telephone number of the PSTN connection (this is the same number which is assigned to the Incoming Call Route in Figure 35).
	Line Group ID	Enter the group number which was assigned to the PSTN interface in Figure 34 .
Forward DDI Call to IVR Hunt Group	Code	Enter *71
	Feature	Select Dial Extn from the drop-down menu.
	Telephone Number	Enter 5900D,,6*E# . 5900 is the extension assigned to the IVR Hunt Group in Figure 31 .

Table 8: Short code Configuration Parameters

***93: Dial Extn**

Short Code

Code: *93

Feature: Dial Extn

Telephone Number: 5900D,,3*E#

Line Group Id: 0

Locale:

Force Account Code: ☐

Figure 24: Guest IVR Short code

94: Dial Extn

Short Code

Code: *94

Feature: Dial Extn

Telephone Number: 5900D,,5*E#

Line Group Id: 0

Locale:

Force Account Code: ☐

Figure 25: Room Status Short code

*95*N: Dial Extn	
Short Code	
Code	*95*N
Feature	Dial Extn
Telephone Number	5900D,,2*N#
Line Group Id	0
Locale	
Force Account Code	<input type="checkbox"/>

Figure 26: Record Message Short code

*97*N#: Display Msg	
Short Code	
Code	*97*N#
Feature	Display Msg
Telephone Number	N";MWL Msgs=1 Old=0 Sav=0"
Line Group Id	0
Locale	
Force Account Code	<input type="checkbox"/>

Figure 27: MWI ON Short code

*98*N#: Display Msg	
Short Code	
Code	*98*N#
Feature	Display Msg
Telephone Number	N";MWL Msgs=0 Old=0 Sav=0"
Line Group Id	0
Locale	
Force Account Code	<input type="checkbox"/>

Figure 28: MWI OFF Short code

ON;; Dial*	
Short Code	
Code	ON;
Feature	Dial
Telephone Number	NSi69907...E
Line Group Id	5
Locale	France (French)
Force Account Code	<input type="checkbox"/>

Figure 29: PSTN Access Short Code

*71: Dial Extn	
Short Code	
Code	*71
Feature	Dial Extn
Telephone Number	5900D,,6*E#
Line Group Id	0
Locale	
Force Account Code	<input type="checkbox"/>

Figure 30: Forward DDI Call to IVR Hunt Group

4.8. Create Hunt Groups

4.8.1. Create Hunt Group Meteor SE IVR Ports

Select the “Hunt Group” icon shown in **Figure 2** and click “new” to allocate a hunt group which contains the analog extensions which are allocated to the Meteor SE IVR ports. Select the tab shown in the “Tab” column to configure the parameters for that tab.

Parameter	Usage
Name	Enter “Meteor VM”.
Extension	Enter the extension assigned to “Meteor SE IVR HG” in table Table 1 .
Ring Mode	Select “Sequential” from the drop-down menu.
Voicemail Answer Time	Select “Off” from the drop-down menu.
User List	Add the Meteor SE IVR extensions shown in Table 1 to the hunt group.

Table 9: IVR Hunt Group Parameters

Sequential Group Meteor VM: 5900

Hunt Group Voicemail Fallback Queuing Voice Recording Announcements

Name: Meteor VM

Extension: 5900

Ring Mode: Sequential

Overflow Mode: Group

Hold Music Source: No Change

Agent's Status on No-Answer Applies To: None

☐ CCR Agent Group

No Answer Time (secs): System Default (25)

Overflow Time (secs): Off

Voicemail Answer Time (secs): Off

User List

Extension	Name
<input checked="" type="checkbox"/> 5901	IVR5901
<input checked="" type="checkbox"/> 5902	IVR5902

Overflow Group List

Group Name

Figure 31: IVR Hunt Group

4.8.2. Create Hunt Group for DDI Calls

Select the “Hunt Group” icon shown in **Figure 2** and click “new” to allocate a hunt group for each DDI number which has been allocated by the PSTN service provider. This may be less than the total number of guest extensions. A DDI hunt group may be assigned to a guest on an optional basis, and usually involves extra charges for the guest. No extensions need be assigned to this hunt group when it is allocated, as this will be done dynamically by Meteor when required. Although the tested configuration described in these application notes has only one DDI hunt group, a typical customer installation would have more than one.

When a DDI number is allocated to a guest, that guest’s room extension and DDI extension are added to this hunt group (in that order), by Meteor SE via the IPO Web Services interface. Thus, the contents of this hunt group need not be administered manually. Since this hunt group is sequential, an incoming call will first attempt to call the room’s extension. If there is no answer, the virtual extension will be called subsequently. The virtual extension is configured to forward all calls immediately to a hunt group which contains the Meteor SE IVR ports. Thus, unanswered calls to DDI destinations will be forwarded correctly to voicemail coverage.

For each hunt group allocated, enter the parameters shown in the following table. Select the tab shown in the “Tab” column to configure the parameters for that tab.

Tab	Parameter	Usage
Hunt Group	Name	Enter an appropriate name to identify the hunt group.
	Extension	Enter the extension for the Meteor SE DDI HG in Table 1 .
	Ring Mode	Select “Sequential” from the drop-down menu.
	No Answer Time	Enter “10”.
	Overflow Time	Select “Off” from the drop-down menu.
Queuing	Queuing On	Uncheck this box.

Table 10: DDI Hunt Group Configuration Parameters

Sequential Group Meteor DDI 5999: 5999

Hunt Group Voicemail Fallback Queuing Voice Recording Announcements

Name: Meteor DDI 5999

Extension: 5999

Ring Mode: Sequential

Overflow Mode: Group

Hold Music Source: No Change

Agent's Status on No-Answer Applies To: None

☐ CCR Agent Group

No Answer Time (secs): 10

Overflow Time (secs): Off

User List

Extension	Name
-----------	------

Edit... Remove

Overflow Group List

Group Name

Add... Remove

Figure 32: DDI Hunt Group

Sequential Group Meteor DDI 5999: 5999*

Hunt Group Voicemail Fallback Queuing Voice Recording Announcements

☒ Queuing On

Queue Length: No Limit

Queue Type: Assign Call On Agent Answer

Normalize Queue Length: ☒

Calls In Queue Alarm

Calls In Queue Threshold: 1

Analog Extension to Notify: <None>

Figure 33: DDI Hunt Group Queuing

4.9. Create PRI Line

This section contains a description of the IP Office configuration for use with a PRI interface to the PSTN, which was used for conformance testing. Other types of PSTN trunks can be used as well. Select the “Line” icon shown in **Figure 2**, click “new”, and enter the parameters shown in the following table.

Parameter	Usage
Incoming Group ID	Assign the number of an otherwise unused Incoming Group ID.
Prefix	Enter the prefix which is used to initiate a local external call via the PSTN.
National Prefix	Enter the prefix which is used to initiate a national external call via the PSTN.
International Prefix	Enter the prefix which is used to initiate an international external call via the PSTN.
Line SubType	Select “ETSI” from the drop-down list, as required for access to the PSTN in Europe.
Outgoing Group ID	Assign the number as was assigned to the Incoming Group ID.

Table 11: Primary Rate Line Configuration Parameters

PRI Line

Short Codes

Channels

Line Number

13

Line SubType

ETSI

Card

4

Port

P1

Telephone Number

TEI

0

Incoming Group ID

5

Outgoing Group ID

5

Prefix

0

Number of Channels

30

National Prefix

00

Outgoing Channels

30

International Prefix

000

Voice Channels

30

CRC Checking

☒

Data Channels

30

Clock Quality

Network

Line Signalling

CPE

Add 'Not end-to-end ISDN' Information Element

Never

Send Redirecting Number

☐

Supports Partial Rerouting

☐

Force Number Plan to ISDN

☐

Support Call Tracing

☐

Active CCBS Support

☐

Passive CCBS Support

☐

Cost Per Charging Unit

618

Figure 34: Primary Rate Line Configuration Screen

4.10. Incoming Call Route

Select the “Incoming Call Route” icon shown in **Figure 2** and click “new” to create an Incoming Call Route for routing calls from the PSTN to local extensions. Assign parameters to this call route as shown in the following table. Select the tab shown in the “Tab” column to configure the parameters for that tab.

Tab	Parameter	Usage
Standard	Line Group Id	Enter the Group Id of the BRI line, as shown in Figure 34 .
	Incoming Number	Enter “0” followed by the PSTN number assigned to the BRI interface (the same number that is assigned to the PSTN Access Short Code in Figure 29), followed by the string “xxxx”.
Destinations	Destination	Configure the destination to use the last four digits of the called party number by entering a value of “#”.

Table 12: Parameters for Incoming Call Routes

The screenshot displays the configuration interface for an Incoming Call Route. At the top, a blue header bar shows the number "5 069907[REDACTED]xxxx". Below this, there are three tabs: "Standard" (selected), "Voice Recording", and "Destinations". The "Standard" tab contains several configuration fields:

- Bearer Capability:** A dropdown menu set to "Any Voice".
- Line Group Id:** A dropdown menu set to "5".
- Incoming Number:** A text field containing "069907[REDACTED]xxxx".
- Incoming Sub Address:** An empty text field.
- Incoming CLI:** An empty text field.
- Locale:** A dropdown menu.
- Priority:** A dropdown menu set to "1 - Low".
- Tag:** An empty text field.
- Hold Music Source:** A dropdown menu set to "System Source".

A red rectangular box highlights the "Line Group Id" and "Incoming Number" fields.

Figure 35: Incoming Call Route - Standard Parameters

	TimeProfile	Destination	Fallback Extension
▶	Default Value	#	

Figure 36: Incoming Call Route - Destinations Screen

5. Configure Meteor Server

5.1. Install Dialogic D/4PCI

Insert the Dialogic D/4PCI interface in the Meteor SE server PC. Set the SW1 rotary switch on the D/4PCI interface card to 0, as described in [2].

Before proceeding uninstall any Dialogic driver which may have been present on the system. After the system is initially powered-up after installation of the interface, the screen below will appear. Hit “Cancel”.



Figure 37: New Hardware Screen

Execute setup.exe on Dialogic installation CD. Click “Next” on the welcome screen.

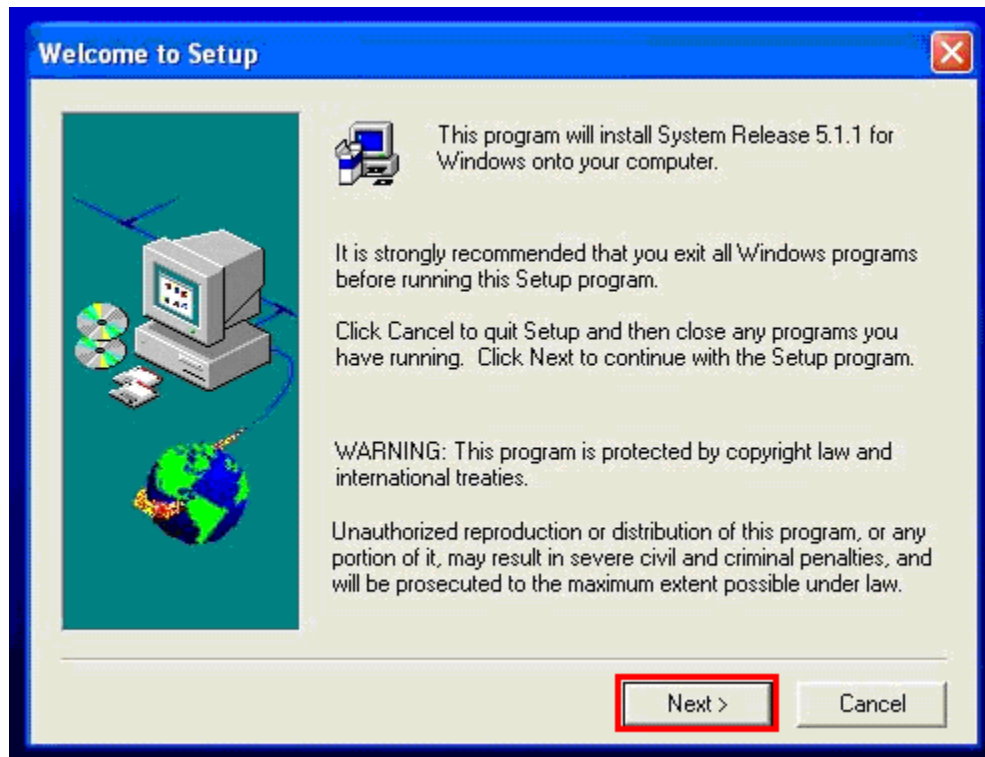


Figure 38: D/4PCI Welcome Screen

Click “Yes” if the license terms are acceptable.

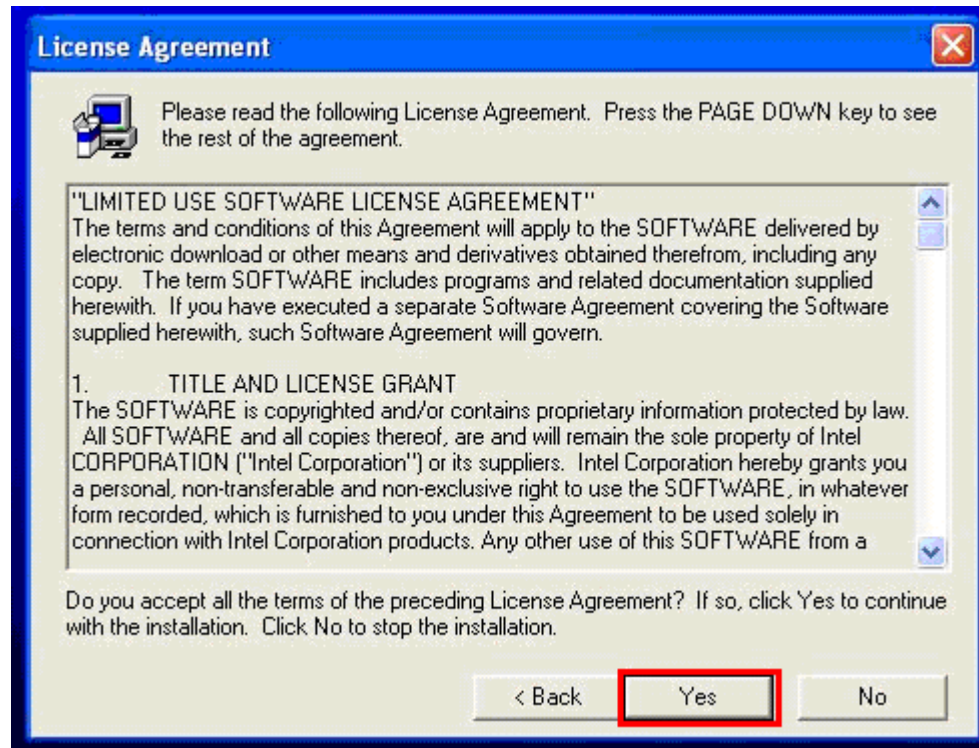
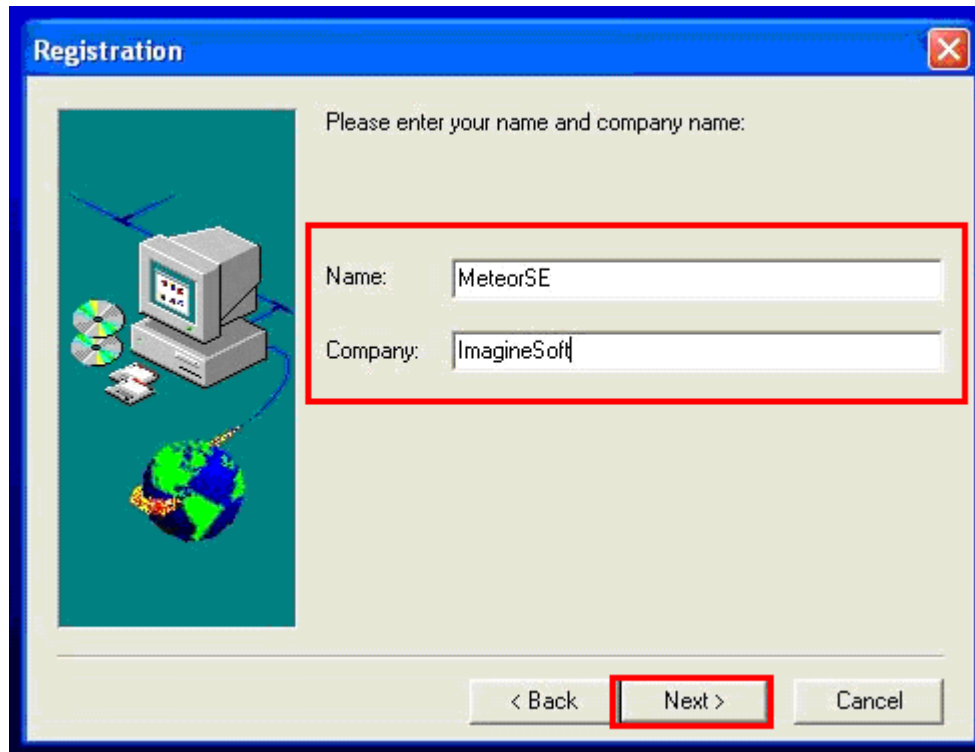


Figure 39: D/4PCI License Screen

Enter your name and company name and click “Next”.



The image shows a Windows-style registration dialog box titled "Registration". It has a blue title bar with a close button (X) in the top right corner. The main area is light gray and contains the text "Please enter your name and company name:". On the left side, there is a graphic of a computer monitor, a CD-ROM, and a globe connected by lines. To the right of the text, there are two text input fields. The first field is labeled "Name:" and contains the text "MeteorSE". The second field is labeled "Company:" and contains the text "ImagineSoft". Both input fields and the "Next >" button at the bottom are highlighted with a red rectangular border. The "Next >" button is located between "< Back" and "Cancel" buttons.

Registration

Please enter your name and company name:

Name: MeteorSE

Company: ImagineSoft

< Back Next > Cancel

Figure 40: D/4PCI Registration Screen

Select “Typical” and click “Next”.

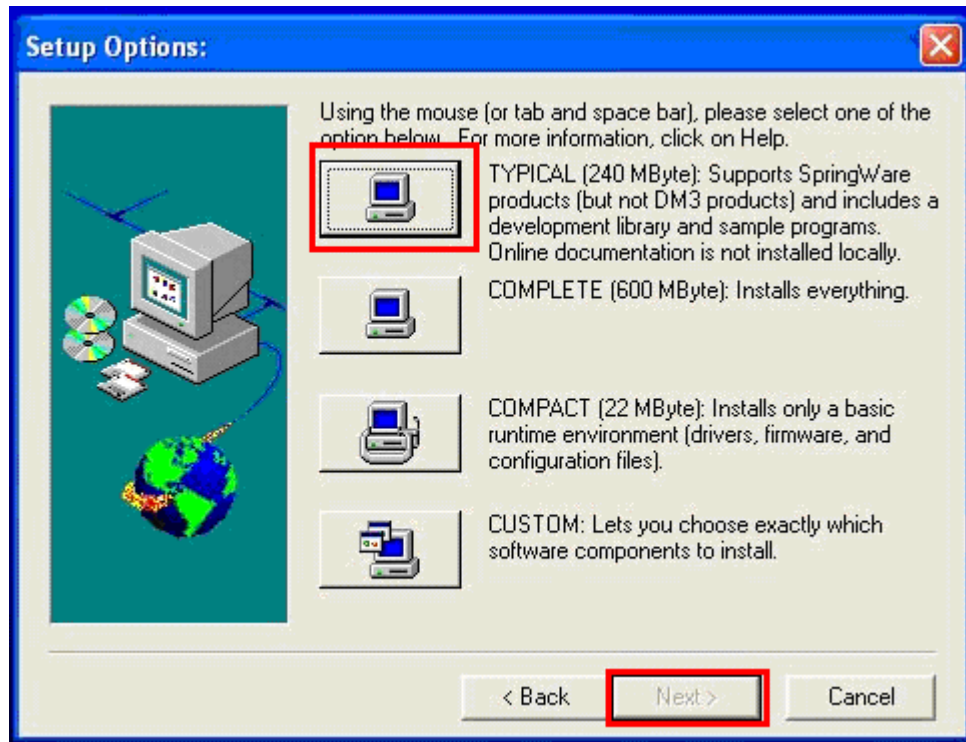


Figure 41: D/4PCI Options Screen

Accept the default destination directory by clicking “Next”. Reboot the system after the installation has completed.

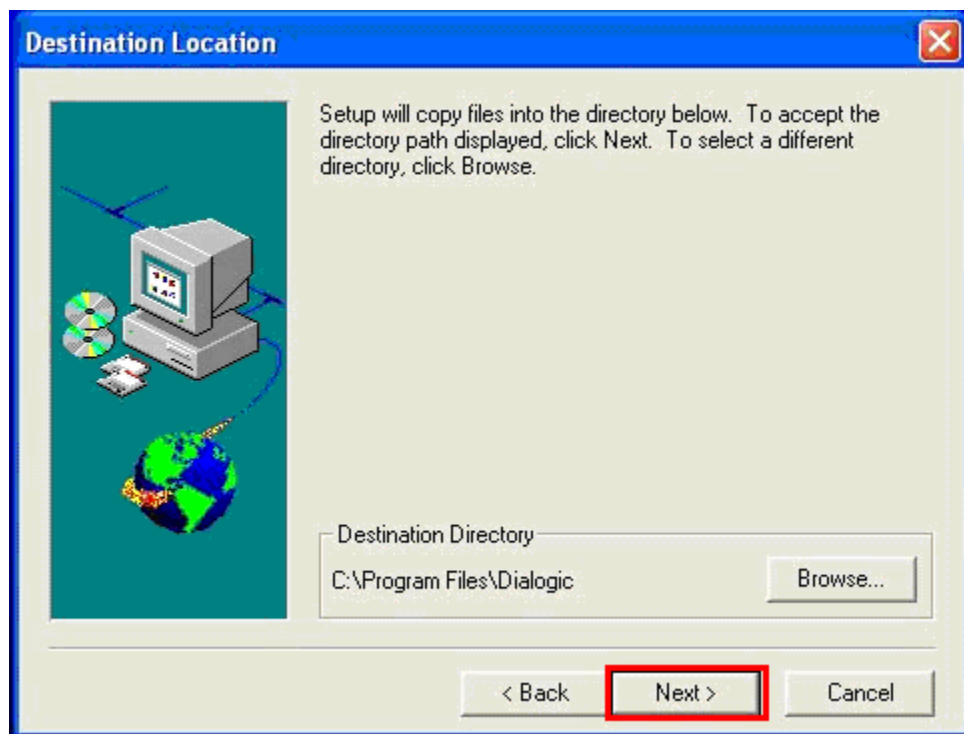


Figure 42: D/4PCI Destination Screen

Click the “Connect” popup which appears spontaneously, which starts the Intel Dialogic Configuration Manager. Click the “Start Service” button as shown highlighted below.

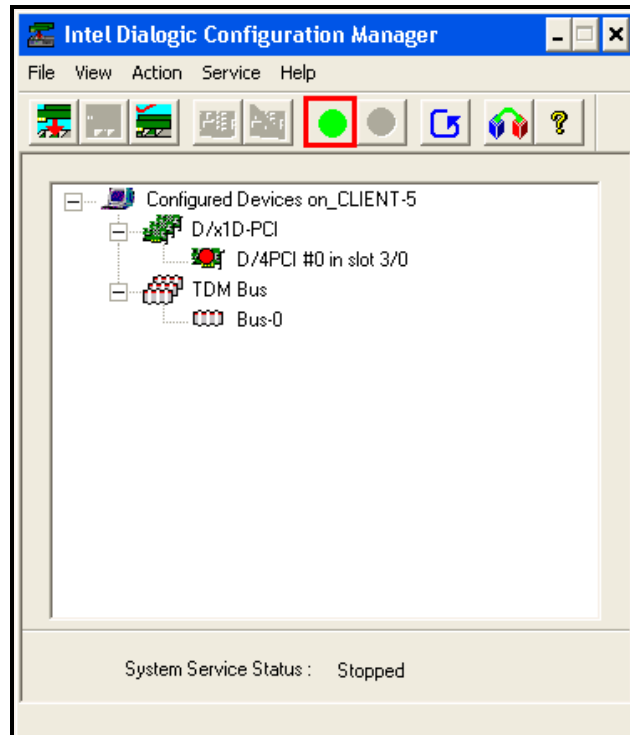


Figure 43: D/4PCI Configuration Manager Prior to Starting Service

Click “Service” -> “Start Mode” -> “Automatic” (Not Shown).

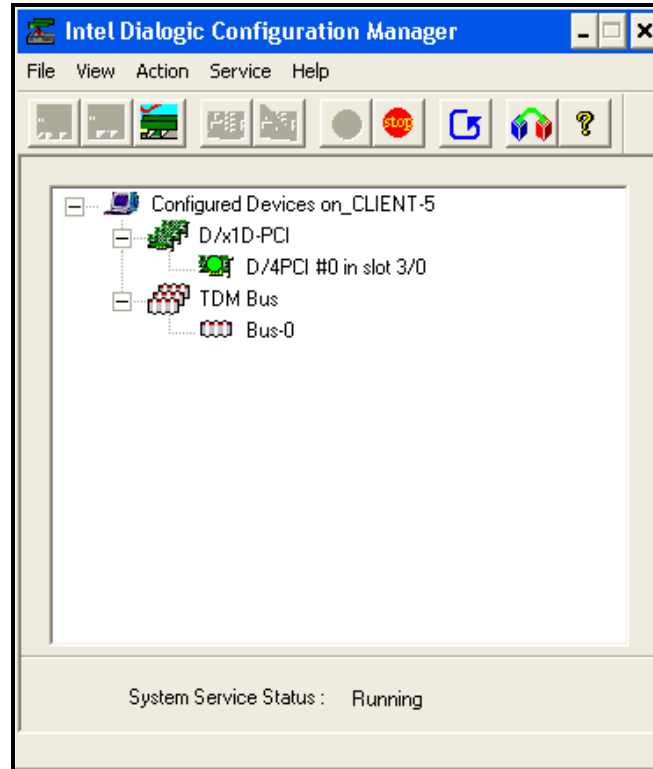


Figure 44: D/4PCI Configuration Manager After Starting Service

Restart the system and install the Meteor application from the installation media. No configuration parameter input is required during installation and restart the system.

5.2. Configure Meteor SE

Enter the IP address of the Meteor SE server in a web browser, enter the appropriate user credentials and click “OK”.

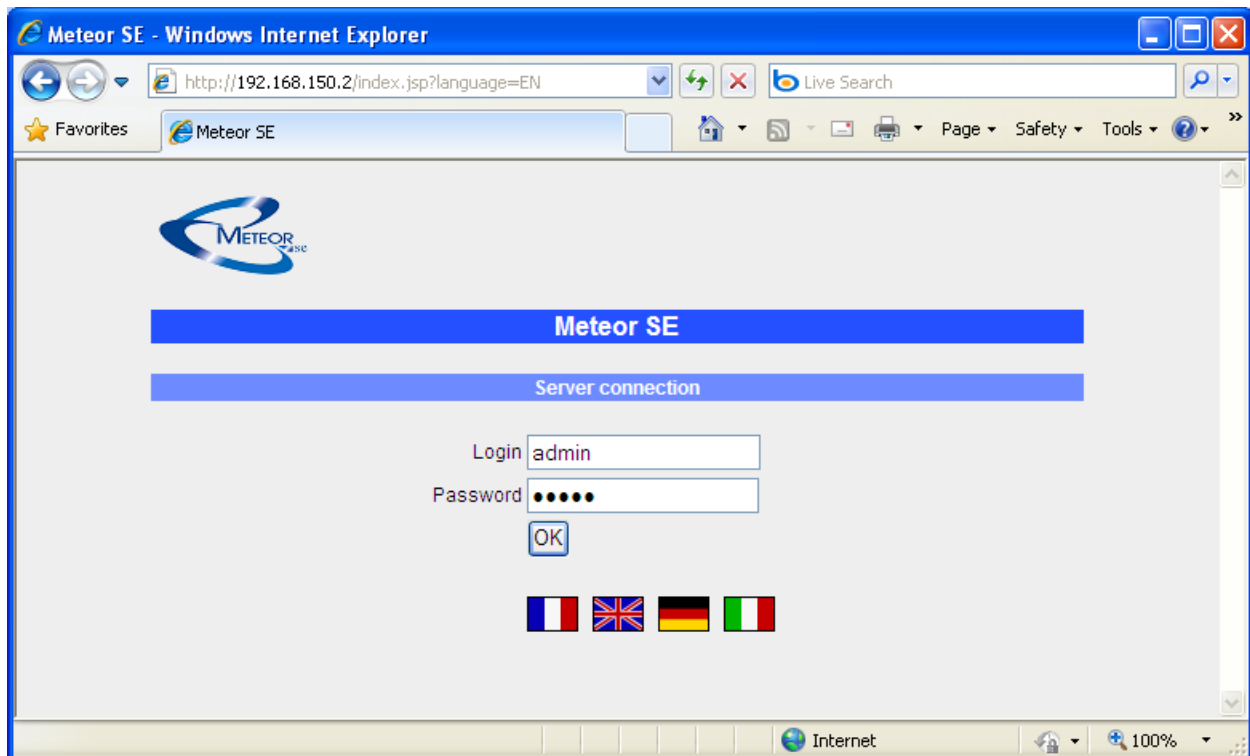


Figure 45: Meteor SE Login Screen

5.2.1. Install License

Click “License Installation”.

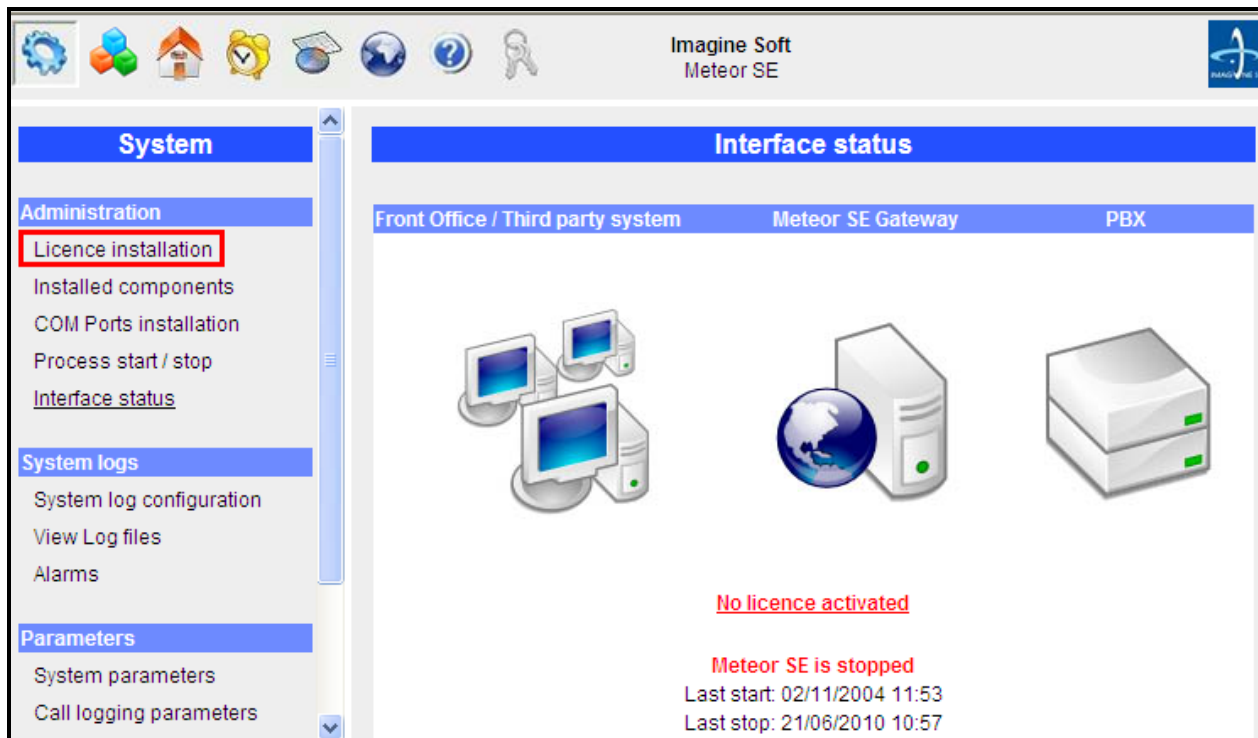


Figure 46: Meteor SE Interface Installation Initiation

The license directory contains an HTML file which has the customer name as part of the file name. Selection of this file displays the features which are licensed, as show below. Double click this to open it with the Web browser to verify that the “Interfaces” list includes “Avaya IP Office”.

Imagine Soft
424, rue Paradis - 13008 Marseille, France
Tel. +33 (0)4 91 32 74 00
Fax. +33 (0)4 91 32 74 01
Internet : www.imaginesoft.fr

21/06/2010

Dear Customer,

We received the registration order for your software and we thank you for choosing our product. The licence file is attached to the mail you received. Please find below a summary of your licence information.

Customer name : **Avaya Dev Connect**
Software : **Meteor SE**
Software version : 4.2.3
Serial number : 20100621
Extensions : 10
Channels : 4
MAC Address: 00123F66D7A8
Language pack: RU,CN,CZ,SL,AR

Interfaces : **Avaya IP Office**

Figure 47: Meteor SE License Display

Click “Browse” and select to the path of the license file which was received from Imagine Soft.

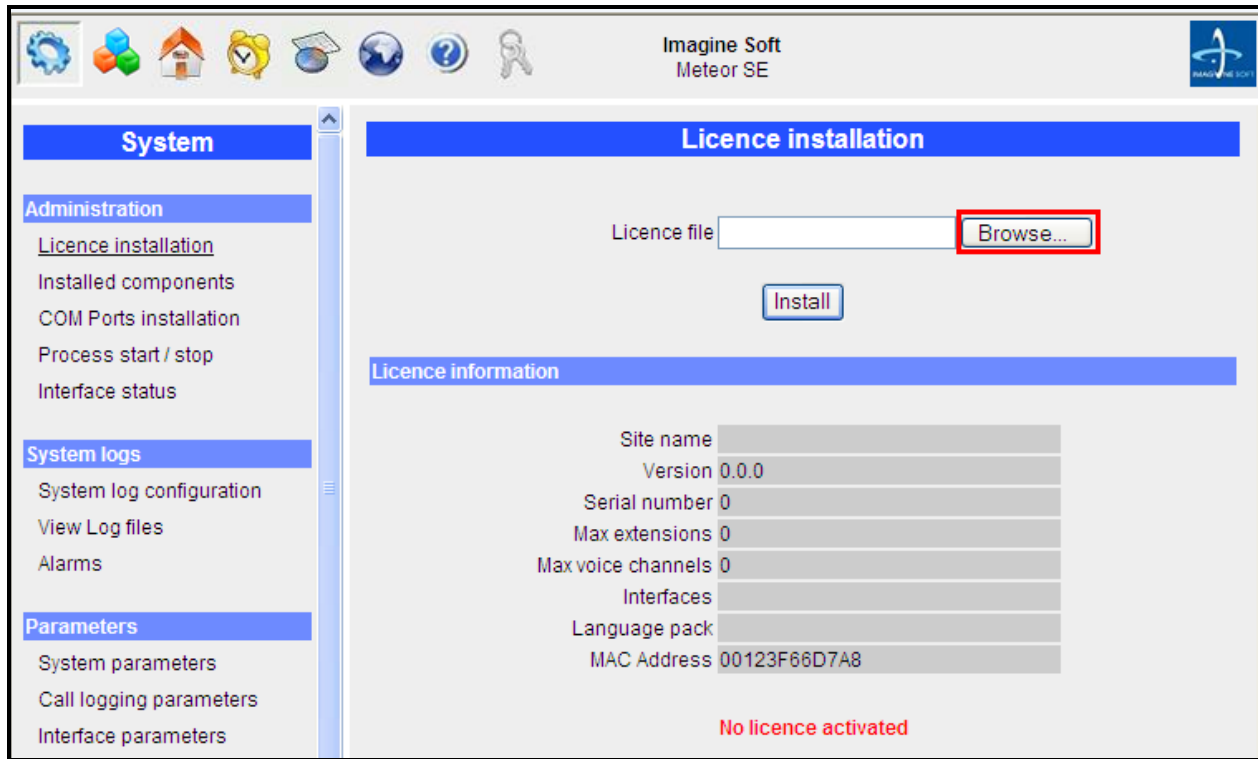


Figure 48: Meteor SE License Status Prior to License Installation

After installation “Avaya IP Office” is included in the list of licensed interfaces.

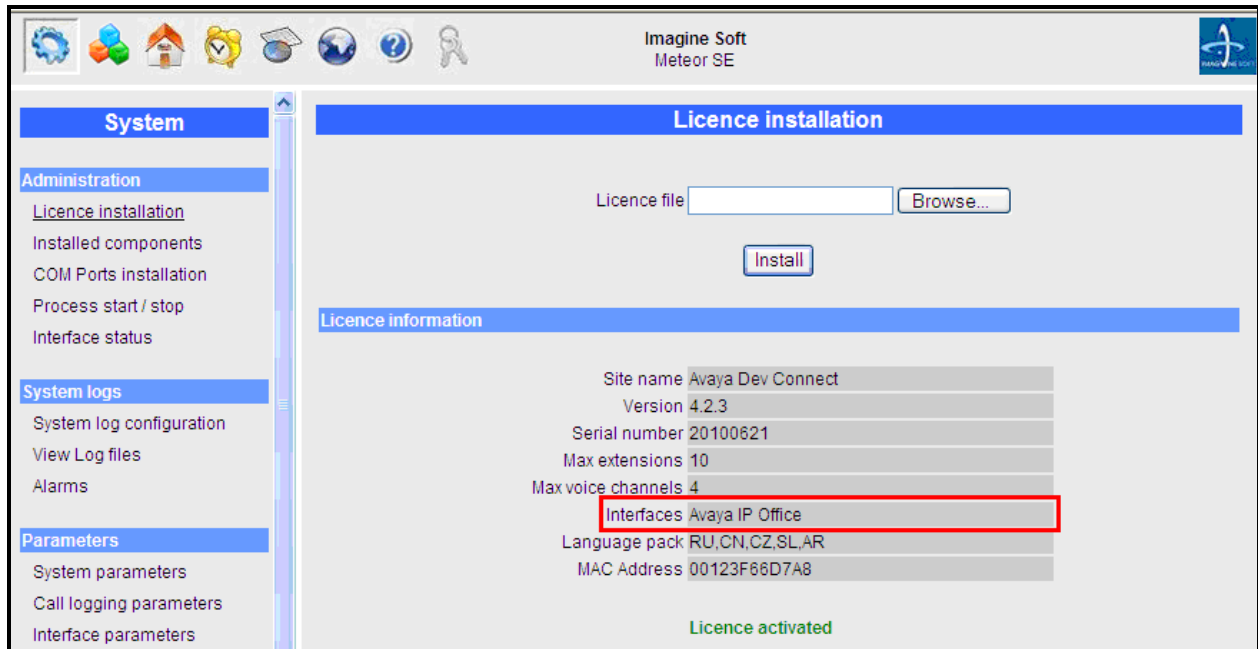


Figure 49: Meteor SE License Status after License Installation

5.2.2. Configure Interfaces

Select “Interface Parameters” from the left frame, and then “IP Office Manager PMS” from the list of interfaces.

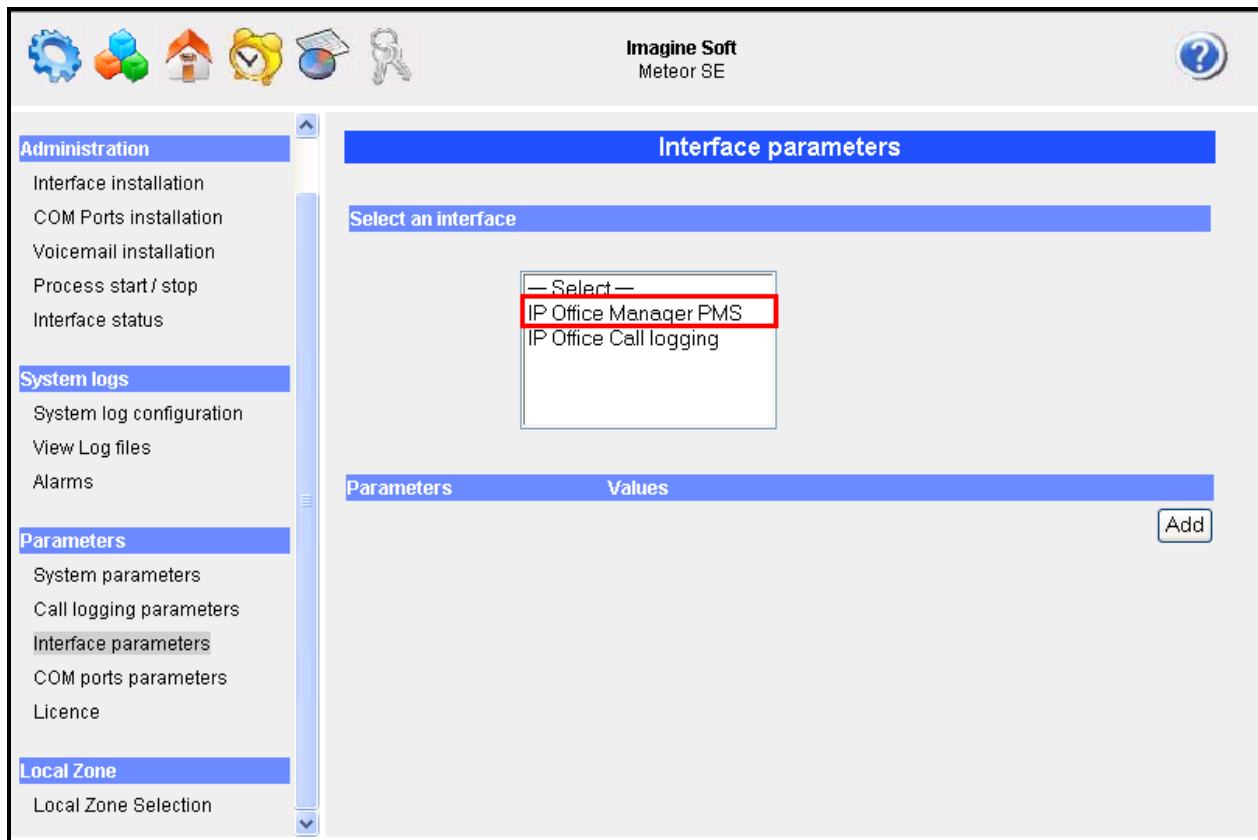


Figure 50: Meteor SE Interface Parameters

Set the parameters shown in the following table by selecting the “Update” entry for each of the highlighted entries, one at a time, entering the values indicated in the table. When these parameters have been configured, click the “Add” button.

Parameter	Usage
DDI Prefix	Set the value to the leading digit which is used for DDI extensions, as shown in Table 1 .
Configuration Web Services port	Enter the port to be used by Web Services. This must match the value which will be configured in Figure 60 .
IP Office PBX IP	Enter the IP address of Avaya IP Office LAN interface, as shown in Figure 5 .
Login	Enter the Avaya IP Office administrator user ID.
Password	Enter the Avaya IP Office administrator user password.

Table 13: Interface Parameters

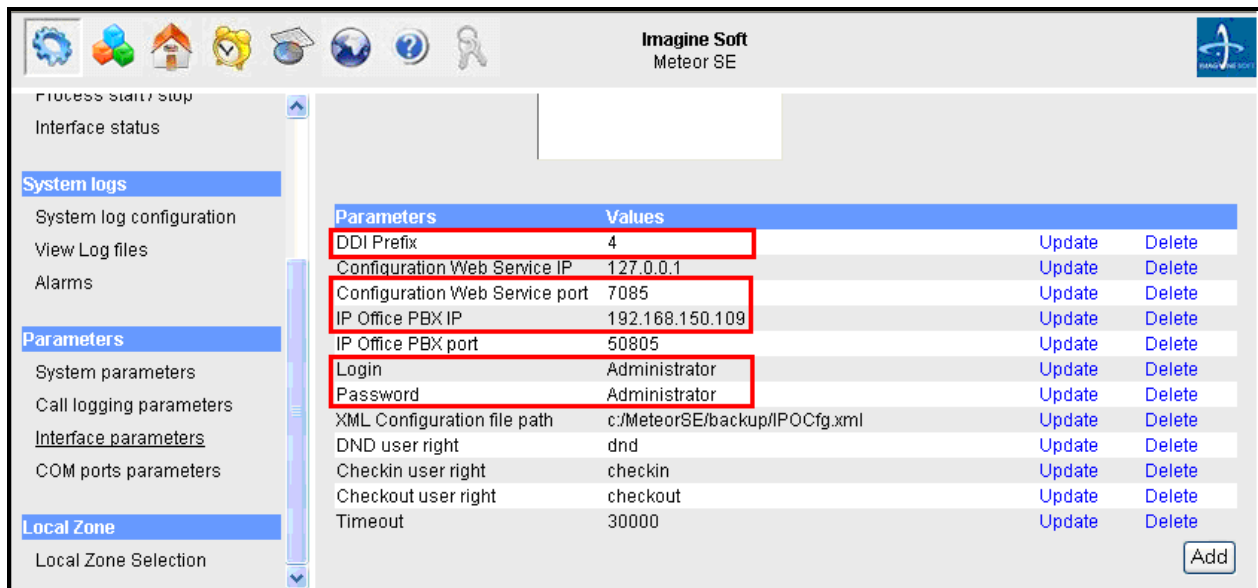
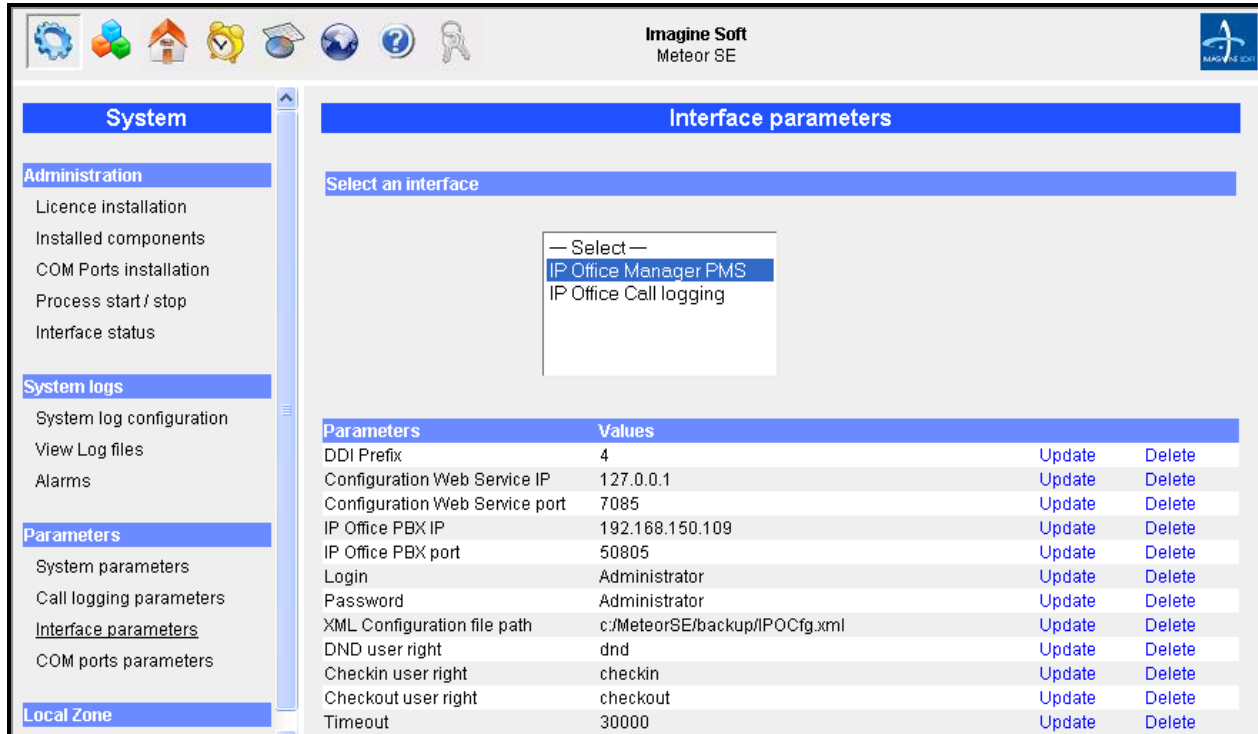


Figure 51: Interface Parameter Screen

Here is the list of the interface values after completion of the above configuration steps:



The screenshot shows the 'Interface parameters' configuration page in the Imagine Soft Meteor SE application. The left sidebar contains a navigation menu with sections: System, Administration, System logs, Parameters, and Local Zone. The 'Parameters' section is expanded, showing 'Interface parameters' as the selected option. The main content area is titled 'Interface parameters' and includes a dropdown menu to 'Select an interface'. The dropdown menu is open, showing three options: '— Select —', 'IP Office Manager PMS' (which is highlighted), and 'IP Office Call logging'. Below the dropdown is a table of parameters with columns for 'Parameters', 'Values', 'Update', and 'Delete'.

Parameters	Values	Update	Delete
DDI Prefix	4	Update	Delete
Configuration Web Service IP	127.0.0.1	Update	Delete
Configuration Web Service port	7085	Update	Delete
IP Office PBX IP	192.168.150.109	Update	Delete
IP Office PBX port	50805	Update	Delete
Login	Administrator	Update	Delete
Password	Administrator	Update	Delete
XML Configuration file path	c:/MeteorSE/backup/IPOCfg.xml	Update	Delete
DND user right	dnd	Update	Delete
Checkin user right	checkin	Update	Delete
Checkout user right	checkout	Update	Delete
Timeout	30000	Update	Delete

Figure 52: IP Office Manager PMS Parameters

Select the “IP Office Call logging” interface and set the “Port” parameter to the same value as for the IPO CDR interface in **Figure 7**, and set the “Traffic analysis” parameter to “1”. Upon completion, click “Call logging parameters”.

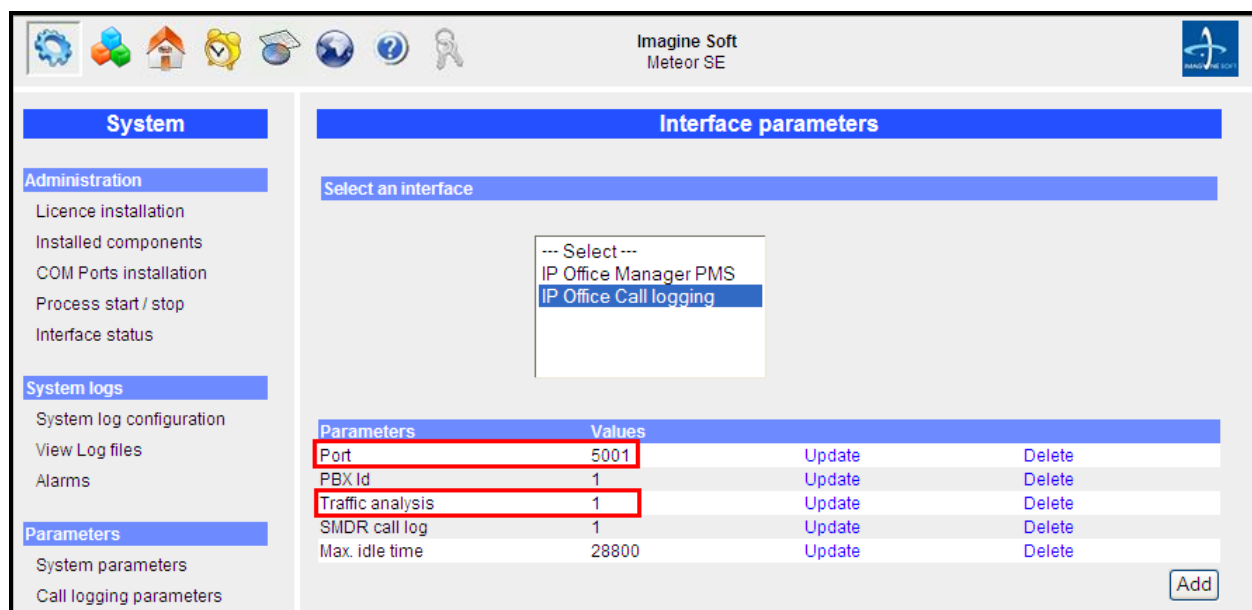


Figure 53: IP Office Call Logging Interface Parameters

Set the “Call logging on duration” parameter to “0” to use the charging pulse from the PSTN.

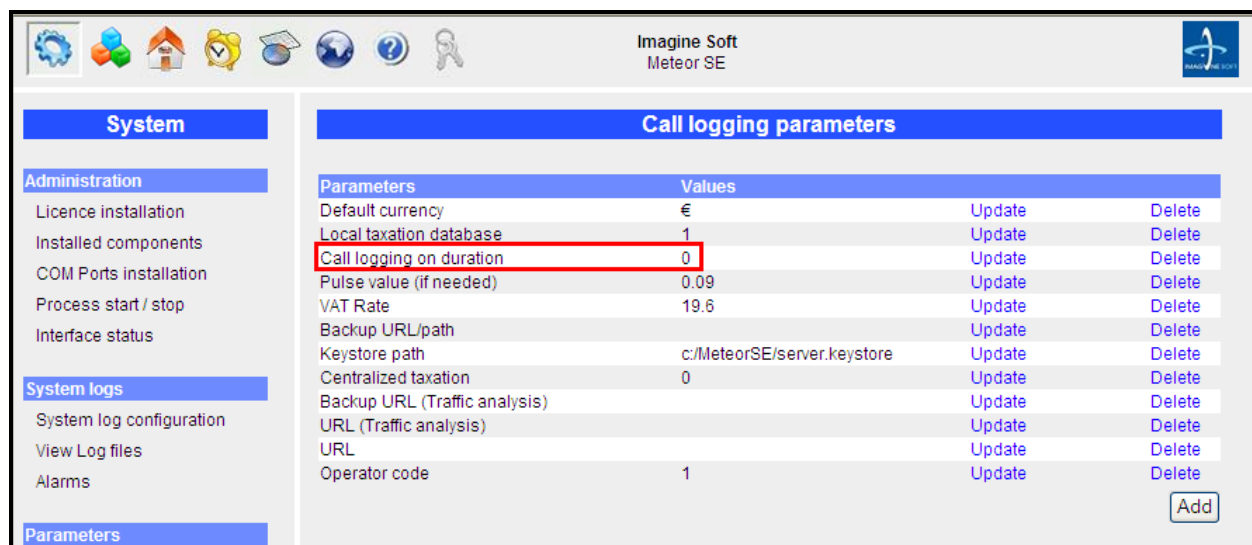


Figure 54: Call Logging Parameters

5.2.3. Configure Extensions

Select the “Hotel Configuration” icon from the top menu bar and allocate guest room extensions for each of the Guest rooms shown in **Table 1**, as shown in the following table and click “OK”.

Parameter	Usage
Extension Number	Select the first room extension in sequence, as shown in Table 1 .
Up to Extension	Select the last room extension in sequence, as shown in Table 1 .
Code (or room)	Select the first room number in sequence, as shown in Table 1 .
Extension Type	Select “CHA” from the drop-down list (Chamber).

Table 14: Hotel Room Extensions

The screenshot displays the 'Add Extension/s' interface. The sidebar on the left includes 'Hotel configuration' and 'Configuration' sections. The main panel contains the following fields:

- Extension Number:** 5113
- Code (or room):** 5113
- Extension Type:** Room (dropdown menu)
- Description:** VIP Rooms
- Pin number:** (empty field)
- Up to Extension:** 5114
- Prefix:** (empty field)
- Suffix:** (empty field)

An 'OK' button is located at the bottom right of the main panel.

Figure 55: Hotel Room Extensions Screen

Create the hotel administrator extensions as shown in the following table and click “OK”.

Parameter	Usage
Extension Number	Select the Reception extension, as shown in Table 1 .
Code (or room)	Select the Reception extension, as shown in Table 1
Extension Type	Select “Administration” from the drop-down list.

Table 15: Hotel Administrator Extensions

The screenshot shows the 'Add Extension/s' window in the Meteor SE application. The left sidebar contains a 'Hotel configuration' menu with options like 'Add Extension/s', 'Extension List', 'Secondary extensions creation', 'Charge Groups', 'Guest profiles', 'Users', 'Add DDI/s', 'Extensions import', and 'Trunks list'. The main area has a form with the following fields: 'Extension Number' (5126), 'Code (or room)' (5126), 'Extension Type' (Administration), 'Description', 'Pin number', 'Up to Extension', 'Prefix', and 'Suffix'. An 'OK' button is located at the bottom right of the form.

Figure 56: Hotel Administrator Extensions Screen

After the extensions have been allocated, click “Extension List” to verify the list of extensions is correct.

The screenshot shows the 'Extension List' window. The left sidebar is the same as in Figure 56, but the 'Extension List' option is selected. The main area displays a table with the following data:

Extension Number	Code (or room)	Description	Extension Type	Client's name	Update	Delete
5113	5113	VIP Rooms	Room		Update	Delete
5114	5114	VIP Rooms	Room		Update	Delete
5126	5126		Administration		Update	Delete

Figure 57: Extension List Screen

5.2.4. Configure Room Status

Click “Room Status Codes”, enter the PBX code of “1” for the PMS code of “Needs Cleaning”, and click “Add”.

The screenshot shows the 'Room Status' configuration screen. On the left, a sidebar under 'Hotel configuration' lists various options, with 'Room Status' and its sub-option 'Room Status Codes' highlighted. The main window features a table with the following structure:

PBX code	PMS code	Caption
1	Needs Cleaning	

An 'Add' button is located to the right of the table. The 'PBX code' and 'PMS code' fields in the first row are highlighted with a red rectangle.

Figure 58: Room Status Screen

5.2.5. Configure Voice Mail

Edit the vocal.ini file on the server found at the location C:\MeteorSE\vm\vocal.ini. Set the “Flashing” and “ACK_WAKEUP” parameters in this file to the administrator extension, as shown highlighted in the figure below.

```
# Voice Messenger Initialization file
# Last modified 2008/01/03
# All durations must be set in milliseconds

[DTMF]

[DEFAULTS]
CALL_TIMEOUT=16000
MAX_DIGITS=20
READ_BUFFER_TIMEOUT=100
READ_DIGITS_TIMEOUT=3000
RECORD_TIMEOUT=60000
FLASHING=&,5126,
LAMP_ON=*97*@@#
LAMP_OFF=*98*@@#
DIAL_PREFIX=,,
ACK_WAKEUP=5126

[ANALYSIS]
TIMEOUT=4000
MAX_DIGITS=30
STOP_DIGIT=#

[DEPOSIT]
RE=2\[*([0-9]+)#
PS=1

[MESSENGER]
RE=3\[*([0-9]+)#
PS=1

[EXT_MESSENGER]
RE=6\[*([0-9]+)#
PS=1

[WAKEUP]
RE=4\[*([0-9]+)#
PS=1

[ROOM_STATUS]
RE=5\[*([0-9]+)#
PS=1
```

Figure 59: vocal.ini Configuration File

5.3. Configure IP Office Web Services

Edit the file C:\MeteorSE\tools\ipo\bin\Release\ ConfigServiceHost.exe.config such that the ports shown highlighted below match the “Configuration Web Services port” in **Figure 51**.

```
<?xml version="1.0" encoding="utf-8"?>
<configuration>
  <system.serviceModel>
    <bindings>
      <basicHttpBinding>
        <binding name="NewBinding0" />
      </basicHttpBinding>
    </bindings>
    <client>
      <remove contract="IMetadataExchange" name="net.relay" />
      <endpoint address="" binding="relayBinding"
bindingConfiguration="metadataExchangeRelayBinding"
contract="IMetadataExchange" name="net.relay" />
    </client>
    <services>
      <service behaviorConfiguration="mex" name="IPOConfigService.Service.IPOfficeService">
        <endpoint address="http://localhost:7085/IPOConfigurationService"
binding="basicHttpBinding" bindingConfiguration="NewBinding0"
bindingNamespace="http://avaya.com/IPOffice/ConfigService/2007/01"
contract="IPOConfigService.Service.Interface.IConfigurationService" />
        <host>
          <baseAddresses>
            <add baseAddress="http://localhost:7085/IPOConfigurationService" />
          </baseAddresses>
        </host>
      </service>
    </services>

    <behaviors>
      <serviceBehaviors>
        <behavior name="mex">
          <serviceMetadata httpGetEnabled="true" httpsGetEnabled="false" />
        </behavior>
      </serviceBehaviors>
    </behaviors>

  </system.serviceModel>
</configuration>
```

Figure 60: Avaya IP Office Web Services Configuration

6. General Test Approach and Test Results

All tests were performed manually. Only functional testing was performed: Performance testing was done. For each of the calling scenarios tested, the result of the test was verified manually. All tests cases produced the expected result.

7. Verification Steps

Use the following steps to verify that Meteor SE and Avaya IP Office are each configured correctly.

- After making at least one outgoing call, verify that the “PMS” and “Call Logging” controls are both green:

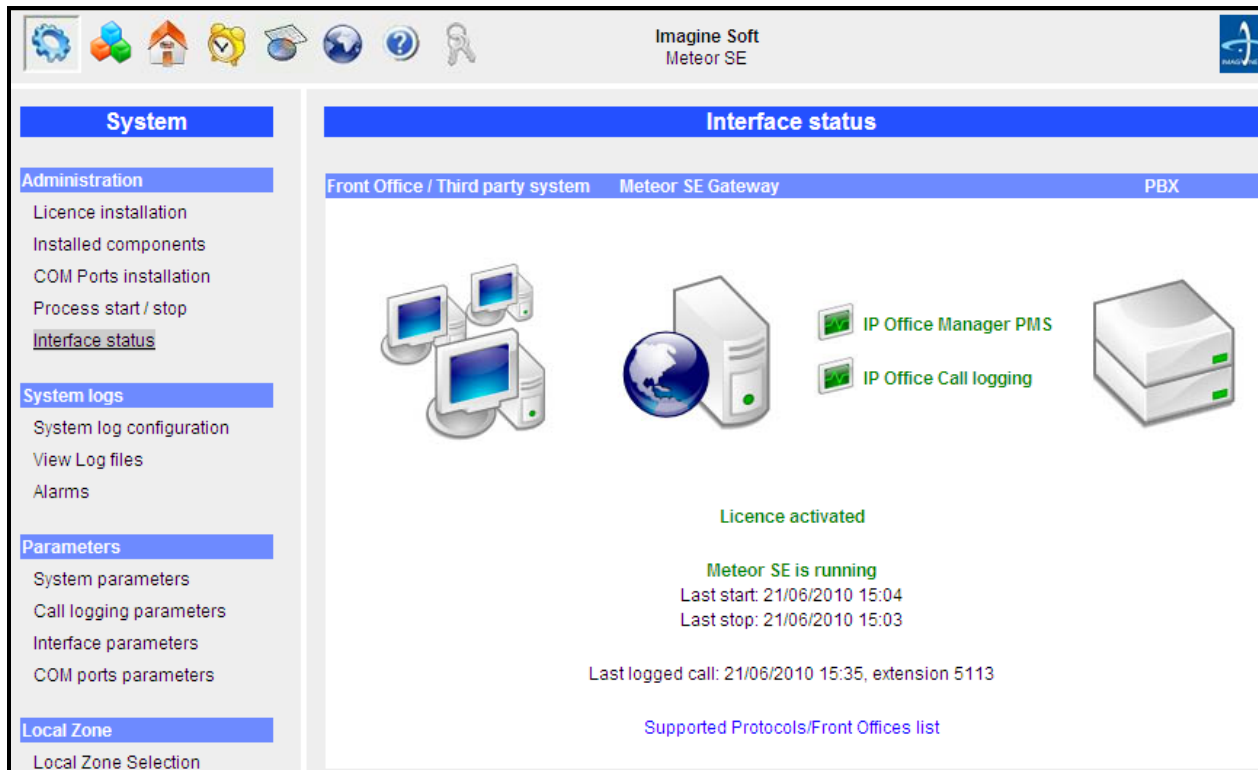


Figure 61: Meteor SE Interface Status

- Click on the “IP Office Manager PMS” icon shown in **Figure 61** and verify that the message “Configuration file parsed successfully” is displayed, as shown in the following screen.

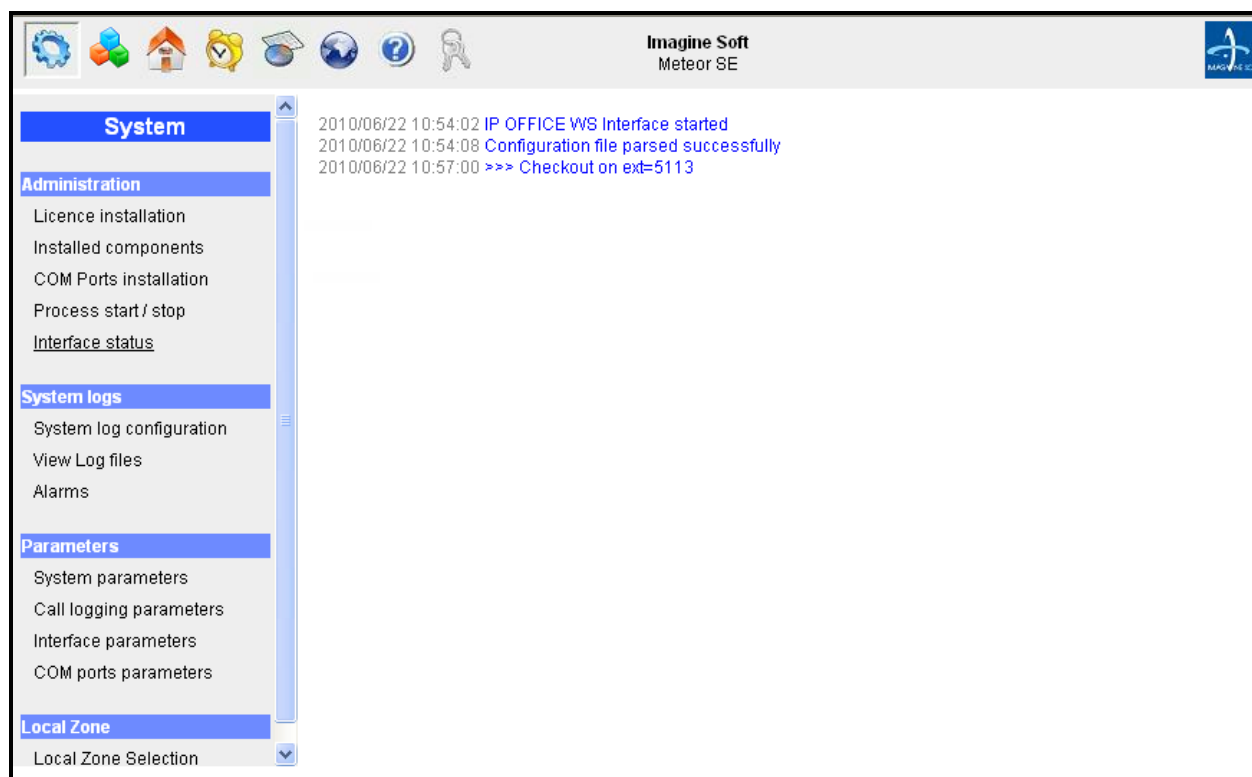


Figure 62: Meteor Configuration Messages

- Click on the “Call Logging” icon of the **Figure 61** and verify that the Avaya IP Office has logged on:

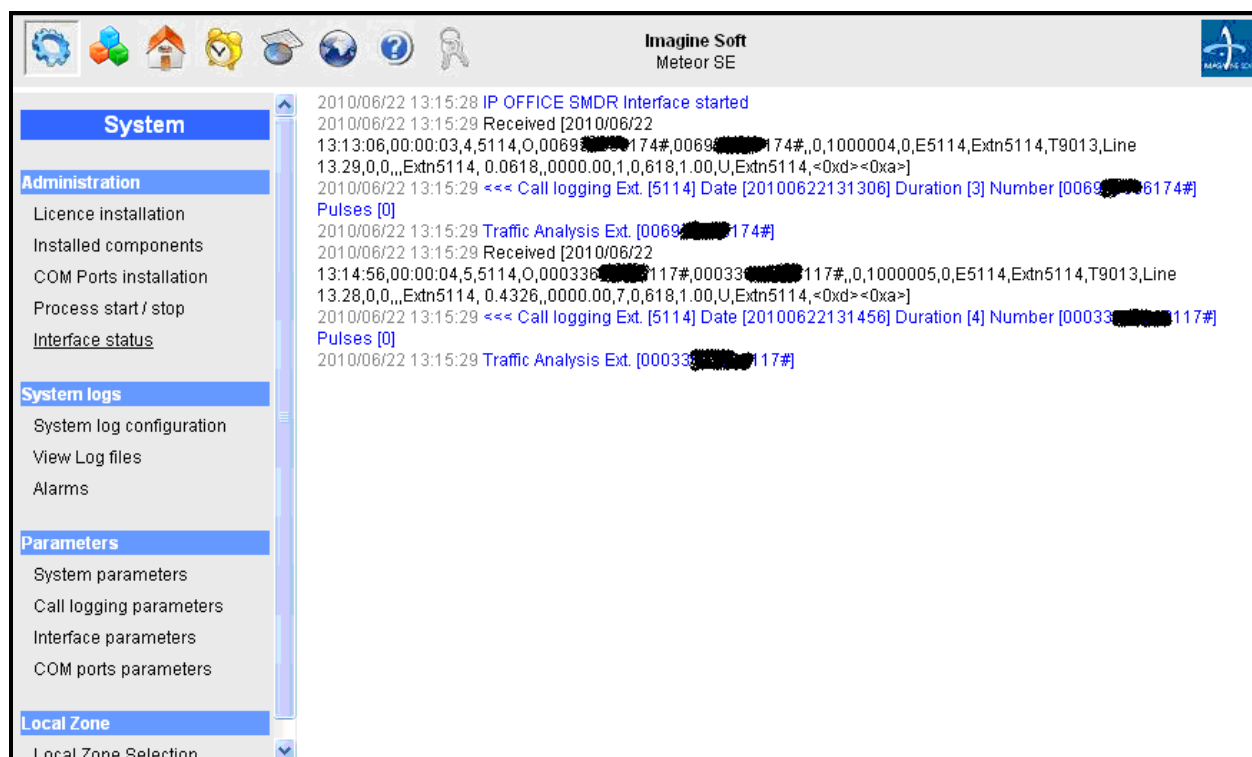


Figure 63: Meteor SE Confirmation of IP Office Logon

- Verify the ability of PSTN telephones and local stations to call each other.
- Verify the ability to perform a guest checkin/checkout.
- Verify the ability to leave voicemail messages for unanswered guest calls.
- Verify the ability for guests to playback and erase voicemail messages.
- Verify that external calls billed to guests upon checkout.
- Verify the ability to change a room status from the room’s telephone.

IP Office System Status							
Control Unit Audit							
Date and Time	Event Type	Item Changed	Outcome	IP Office Account	PC IP Address	PC MAC Address	PC Login Username
6/22/2010 1:00:49 PM	Warm Start		Success	System Reboot			
6/22/2010 1:09:59 PM	Write with Merge	User Extn5113 License	Success	Administrator	192.168.150.2	00-12-3F-66-D7-A8	SYSTEM
6/22/2010 1:37:11 PM	Write with Merge	User Extn5113 License	Success	Administrator	192.168.150.2	00-12-3F-66-D7-A8	SYSTEM

Figure 64: IP Office Status Screen

8. Conclusion

These Application Notes describe the compliance testing of the Imagine Soft Meteor Server with Avaya IP Office. The various features of the Meteor Server which involve interaction with telephony were tested. A detailed description of the configuration required for both the Avaya and the Imagine Soft equipment is documented within these Application Notes.

9. Additional References

The Meteor SE documentation is contained in the following directory after the product has been installed: C:\Meteor SE\tomcat\webapps\ROOT\help. This documentation is also available on the installation medium prior to installation or via the following icon from the Meteor SE console:



- [1] *Avaya Office 6.0 Manager 8.0*, May 2010, Document Number 15-601011
- [2] *D/4PCI Installation Guide*, 05-1341-002, 1999
- [3] *Manuel de Pre-Installation Meteor SE*, Man 0038-5 (French)
- [4] *Manuel de Configuration et d'Utilisation de Meteor SE*, Man 0036-10 (French)
- [5] *Manuel de configuration IP Office*, Man 0081-6 (French)

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