



IPCR(Call Recording)

Administrator Guide

iPECS is an Ericsson-LG Brand

Please read this manual carefully before
operating your set. Retain it for future reference.



[illegible]

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Before Starting

About This Guide

This iPECS IPCR(Call Recording) Administrator Guide is intended to provide you with the information needed to System Configuration, Installation, Administration and Using iPECS Call Recording Server.

The screen might look a little different depending on which version of the OS (Operating System) and Installation Program you're using, all information in this guide is subject to change without prior notice.

Organization of the Document

This guide consists of seven Chapters, as well as the Before Starting section.

- Before Starting
- **Chapter 1:** Introduction
- **Chapter 2:** Installation Overview
- **Chapter 3:** iPECS System Configuration
- **Chapter 4:** iPCR Installation
- **Chapter 5:** iPCR Administration
- **Chapter 6:** Using iPECS Call Recording Server
- **Chapter 7:** Useful Information

The following icons and notices are used in this guide to convey important cautions and notes.



CAUTION

A caution statement alerts you to situations that may cause damage to hardware, software, or data.

NOTE

A note provides additional explanations, important information, or a reference to relate information.

1. Introduction

1.1 iPECS Call Recording Server

The administrator can configure multiple User admin levels and define the features and functions available to each level. A user may be limited to recording only, search & play, call monitoring and recording, and access to various management and administrative Web pages.

The iPECS Internet Protocol Call Recording (IPCR) server application employs a Linux OS and VoIP technology to deliver advanced Call Recording capabilities to iPECS platforms. The advanced capabilities provide automatic and on-demand call recording for recording Agents linked to objects (stations numbers) registered with the iPECS platform. An IPCR server can be associated with from one (1) to ten (10)-host iPECS systems permitting the application to record calls for a network of systems. Each iPECS host can support one (1) to ten (10) IPCR servers allowing separation of Call Recording based on tenant or other iPECS system groupings.

Employing iPECS and SIP protocols, the IPCR application provides an affordable SMB solution to recording and monitoring calls. iPECS protocols are employed to register and control call recordings. The IPCR application registers with the iPECS host as any other iPECS device. The registration can be automatic “plug-and-play” or by listing the MAC address of the Call Recording server in the iPECS host database for local or remote service. The IPCR application operates as an iPECS SIP Phone to receive RTP (Real-Time Protocol) packets. When a call is received, configured objects invite the call recording Agent to join the call and deliver RTP packets to the IPCR application for storage as part of a conference call. Once the call is terminated, the recording Agent is released and a record of the call and RTP packet media (voice) are stored.

The IPCR application supports both Automatic recording of all calls (ACR) and configured users assigned a Two-way Recording button can request an active call be recorded, ODR (On-demand recording). In the later case, when the call is connected to an On-demand recording object, the recording Agent is activated and the media is sent to the Call Recording server. If during the call the user requests recording, audio for the entire call is stored from the beginning of the call. If the user does not request recording during the call, when the call is complete, the recording Agent is released and the media is not stored.

1.2 Web Server Module

IPCR includes a Web server module. The Web server module is the user-interface for administrative and user functions and features of the application. In addition to configuring the IPCR for registration with the host iPECS systems, the administrator can configure Automatic Back-up of recordings, type of recording (All calls or On-demand), security for signaling and media packets, and server usage thresholds for e-mail notification. The administrator can view and search the Web module activity and the Call Statistics log.

The administrator can configure multiple User admin levels and define the features and functions available to each level. A user may be limited to recording only, search & play, call monitoring and recording, and access to various management and administrative Web pages.

2. Installation Overview

The iPECS Call Recording application has been optimized to run under the Fedora 16 i386 Linux environment from Red Hat and others. The host iPECS platform should be configured for the Call Recording Server as discussed in Chapter 3. The installation follows the steps below:

- Prepare the iPECS host for registration and login of the IPCR application, see *sections 3.1.1 to 3.1.3*
- Install the Fedora-19 Linux OS, see *section 7.1*.
- Install the IPCR application, see *Chapter 4*.
- Prepare the IPPCR application for registration and login with the iPECS host, see *sections 5.2.3 PBX Registration and 5.2.5 IPCR Server Registration*.
- Complete configuration of the iPECS host, see *sections 3.1.4 to 3.1.7*.
- Complete configuration of the IPCR application, see *Chapter 5*.

Once configured for registration and login, the IPCR server registers with the iPECS host using automatic or MAC address registration. The IPCR application then will login to the system employing the SIP Id and password, which must match the User Id and password assigned, if any, in the Device User Login program (PGM 443) where the desired station number can be defined. Once login is complete, the remaining characteristics of the iPECS host and the IPCR application can be configured and calls recorded.

Chapter 6 provides information on using the IPCR Web application to search, play and copy recordings as well as real-time call monitoring and recording.

2.1 IPCR Server General Requirements

Before installing the IPCR application, several items should be considered.

2.1.1 Network Addressing

The IPCR application is designed for use with Static IP addressing only.

2.1.2 Network

The IPCR application is intended for connection to a wired network and must have sufficient bandwidth to handle the expect call traffic. The iPECS object will send RTP traffic to the IPCR application. Depending on the codec and configuration, each recorded call will send 50 packets/second (20-msec. sampling) at about 125 Kbps (G.711).

2.2 OS & Server Requirements

The server as recommended below is capable of handling a maximum of 250 simultaneous calls (Agents). However, it is recommended that the number of agents not exceed 150. Note even though a user does not activate on-demand call recording, RTP traffic is still sent to the IPCR application should the user determine the need to activate recording during the call.

- **Operating System:** Fedora 16 i386 version
- **Server CPU:** Intel Pentium Core 2 Duo 1.8 GHz or higher, AMD Athlon X2-64 2.4 GHz or higher
- **Server RAM:** Minimum 2 GByte
- **Server HDD:** 1-TByte
- **External HDD:** Optional for back up

2.3 Server Environment

During installation, the Fedora OS must be configured to support the IPCR application as discussed in the Appendix A. This includes:

- Create the partition (“/var/REC”) for the application and storage of recording “
- Install the “Web Server” task
- Install the “PostgreSQL” database
- Disable the Fedora Firewall
- Configure the IPCR Sever network parameters
- Establish the “ntsysv” for automatic restart of the Web and database processes.
- Create a back-up directory.

2.4 iPECS Host Platform

The IPCR application has been designed to work with the iPECS family of systems. Specifically, the following platforms are compatible:

- iPECS LIK/UCP version 5.5 or higher, one or more MCIMs are required to record conference calls.
- MCIM is related to 3 more conference and SIP phone two way record. And VOIM is related to relay between local and Remote and Codec conversion.

3. iPECS System Configuration

Prior to starting the IPCR server application, it is recommended that the iPECS host platform be configured. This section provides details to configure the iPECS host for operation with IPCR.

3.1 iPECS LIK/UCP

3.1.1 Unlock up to number of IPCR server and Agent ID

Unlock (license) codes for the iPECS LIK/UCP permit operation with up to ten (10) Call recording servers simultaneously. In addition, the codes define the number of IPCR servers, recording Agents available and SIP Phone. IPCR server needs at least 1 copy. SIP phone unlock key needs only 1 copy for an IPCR.

In the iPECS LIK/UCP Web Admin,

- Select the System Management tab,
- Select Appliance Control,
- Select 'Lock Key Install',
- Enter the Key code provided from your local LG-Ericsson Enterprise representative, and
- Select 'Save'.

The screenshot shows the iPECS System Management interface. The left sidebar contains a menu with options like Database, SMDR, File System, Trace, Gain&Cadence Control, **Appliances Control**, Station Param Set, LGCM Param Set(P429), **Lock Key Install**, DECT Statistics Feature, Device Delete Feature, Voice Mail Delete, and Voice Mail Backup. The main area is titled '[Lock Key Install]' and shows a table of system components and their states. The 'IPCR' row is highlighted in red.

Index	Value	State
Network		Installed
EZ ATTD		Installed
CTI(TAPI)		Installed/Disconnect
Soft Phone		Soft Phone : 50 Copy Video Phone : 50 Copy (2 copies free)
UCS Client		DeskTop : 50 Copy Mobile : 100 Copy
Web Phone		50 Copy
Click To Call		0 Copy
TNET(LOCAL-SURVIVAL)		Installed
NMS		Installed
SIP Phone		50 Copy
FIAS(Fidelio)		Installed
IPCR		(Server Number) : 50 Copy (Agent ID Number) : 50 Copy (Trunk Number) : 0 Copy (Server Number) : 50 Copy (Agent Number) : 50 Copy
SIP VM		100 Copy
IP Communicator		Office: 5 Copy Hotel: 5 Copy
IP Attendant		Server : Activated (Key: 203B005F8D2E)
Contact Center		CCS SIP: 4 free

3.1.2 IPCR Server MAC Address

The IPCR server can be registered with the iPECS host either employing the automatic registration method (Dipswitch 3 set to 'On') or using the MAC address registration. For MAC address registration, assign the MAC address and number of Agents for the IPCR server in the Registration Table (PGM 235).

In the iPECS LIK/UCP Web Admin,

- Select the Administration tab,
- Select Registration Table, PGM 235,
- Enter the MAC address of the IPCR Server and the number of Agents for the server,
- Select 'Save'.

The screenshot displays the iPECS Administration web interface. The 'Administration' tab is selected at the top. In the left sidebar, the 'Tables Data' section is expanded, and 'Registration Table(235) [N]' is highlighted. The main content area shows the 'Registration Table' configuration. It contains a table with 5 rows and 4 columns: Index, MAC Address, Maximum Port, and Device ID for NIPP G/W. The first row is pre-filled with '00405a112233' in the MAC Address field. A red box highlights the 'Administration' tab, the 'Registration Table' title, and the 'Registration Table(235) [N]' menu item. A red arrow points from the 'Save' button to the MAC Address field of the first row. The 'Save' button is located below the table.

Index	MAC Address	Maximum Port	Device ID for NIPP G/W
1	00405a112233	0	N/A
2	000000000000	0	N/A
3	000000000000	0	N/A
4	000000000000	0	N/A
5	000000000000	0	N/A

Save

3.1.3 Station User Login

After the IPCR server registers with the iPECS host using either the MAC or automatic registration method, the IPCR application will login for service. The IPCR application will send the SIP Id and password to the host system. The host will then populate the Station User Login (PGM 443) with the received credentials and assign the next available station number to the IPCR application. In normal case, the Station User Login (PGM 443) procedure doesn't need. It's automatically assigned by register of IPCR.

3.1.4 IPCR Agent ID Table

Prior to programming the Agent Table, the IPCR server must be registered with the iPECS LIK/UCP and the call recording application must be logged into the iPECS LIK/UCP. In addition, the IPCR Channel registration may be configured to assign agents to channels in the IPCR application. Each Agent is linked to an iPECS LIK/UCP object (a Station) in the IPCR Agent Table (PGM 237). The Agent table indicates the number of agents associated with a specific IPCR server, the Agent Id, and the linked object information.

In the iPECS LIK/UCP Web Admin,

- Select the Administration tab,
- Select IPCR Agent Table, PGM 237,
- Select the IPCR Server number,
- Enter the number of Agents for the sever,
- For each Agent Id select an Object Type and the specific object number (Station number or Co) and
- Select 'Save'.
- Note the IPCR server number, 1 – 10, is the order of registration of the IPCR server with the iPECS LIK/UCP.

The screenshot displays the iPECS Administration web interface. The left sidebar contains a navigation menu with categories like Station Group Data, ISDN Line Data, SIP Data, Tables Data, and Networking Data. The 'Tables Data' section is expanded, showing various tables such as LCR Control Attribute, LCR LDT, LCR DMT, LCR Table Initialization, Toll Exception Table, Emergency Code Table, Authorization Code Table, CCR Table, Executive/Secretary, Flexible DID Conversion, System Speed Zone, Auto Ring Mode Table, Voice Mail Dialing Table, Registration Table, and Mobile Extension Table. The 'IPCR Agent Table (237)' is selected.

The main content area is titled 'IPCR Agent Table'. It includes a 'Select the number of IPCR Server(1 - 10):' field with a 'Load' button and a 'Save' button. Below this, the 'IPCR Number' is set to 1. The 'IPCR Agent Lock Key: 0 / Total(50)' is also shown. A table titled 'Agent Order: [1-50] [51-70]' displays the configuration for 10 agents. The table has four columns: Index, Agent ID, Object Type, and Linked Object.

Index	Agent ID	Object Type	Linked Object
1	(ACR)	STATION	1001
2	(ACR)	CO	1
3	(ACR)	STATION	
4	(ACR)	CO	
5	(ACR)	NIA	
6	(ACR)	NIA	
7	(ACR)	NIA	
8	(ACR)	NIA	
9	(ACR)	NIA	
10	(ACR)	NIA	

3.1.5 IPCR SIP Station Registration

The IPCR application interfaces to the iPECS LIK/UCP as a single SIP Phone. Registration between the IPCR server and LIK is automatic once both are configured. Under the SIP Phone Attributes, the Registration Mode must be set to Manual and the SRTP Usage, and 1st and 2nd encryption mode can be configured. The encryption algorithm can be selected as AES or, for Korea, ARIA. The remaining SIP Phone Attributes are not used for the IPCR application.

Prior to programming the Agent Table, the IPCR server must be registered with the iPECS LIK/UCP and the IPCR application must be logged into the iPECS LIK/UCP, see *section 5.2.3*. The station number of the IPCR application can be verified in Station User Login (PGM 443) after registration and login.

In the iPECS LIK/UCP Web Admin,

- Select the Administration tab,
- Select SIP Data menu,
- Select SIP Phone Attributes,
- Enter the Station number associated with the IPCR server and select Load,
- Select 'Manual' for the Registration Mode,
- Select the desired configuration for SRTP Usage, 1st and 2nd Crypto, and
- Select 'Save'.
- 407 will support after A.0Ak version of IPCR.

Order	Check All	Attribute	Value	Range
1	<input checked="" type="checkbox"/>	Registering Mode	Manual	
2		Registration Status	Not Registered	
3		IP Address	10.181.123.13	
4		IP Port	5588	
5		TRANSPORT	UDP	
6	<input type="checkbox"/>	SIP Phone Type	IPCR	
7	<input checked="" type="checkbox"/>	Device NET Mode	AUTO	PGM102-NET mode
8	<input type="checkbox"/>	Registration Timer Usage	OFF	
9	<input type="checkbox"/>	Registration Timer	3600	30-3600 sec
10	<input type="checkbox"/>	Keep Alive Usage	OFF	PGM210 Check Message Send Timer
11	<input type="checkbox"/>	Retry Count	3	3-10
12	<input checked="" type="checkbox"/>	407 Authentication	ON	
13	<input type="checkbox"/>	181 Being Forwarded	OFF	
14	<input type="checkbox"/>	100rel Support	OFF	
15	<input type="checkbox"/>	Session Timer Support	OFF	
16	<input type="checkbox"/>	Max Session Timer	1800	180-3600 sec
17	<input type="checkbox"/>	Min Session Timer	90	60-150 sec
18	<input type="checkbox"/>	Within Same Firewall with MFIM	ON	Firewall Circumstance
19	<input checked="" type="checkbox"/>	SRTP Usage	OFF	
20	<input checked="" type="checkbox"/>	1ST CRYPTO	NONE	
21	<input checked="" type="checkbox"/>	2ND CRYPTO	NONE	
22	<input type="checkbox"/>	DTMF TYPE	INFO(DTMF RELAY)	
23	<input type="checkbox"/>	SMS TYPE	AUTO	
24	<input type="checkbox"/>	CO DIAL TONE	OFF	
25	<input type="checkbox"/>	MWI NOTIFY	OFF	3rd SIP Phone
26	<input type="checkbox"/>	Request URI Type	Normal	KT FMC

3.1.6 VM Group Configuration for IPCR Server

The Station associated with each IPCR server must be assigned to an External Voice Mail Group. The station number of the IPCR server is determined by the order of registration with the host system and the desired station number if requested in the Station User Login (PGM 443) and available. However, verify the station number assigned in PGM 443 before configuring the VM Group.

In the iPECS LIK/UCP Web Admin,

- Select the Administration tab,
- Select Station Group Data,
- Select Station Group Assignment,
- Enter the desired Station Group number and select Load,
- For Group Type, select Voice Mail,
- Enter the IPCR server Station number as the sole member of the group, and
- Select 'Save.

iPECS Administration

MFIM/VD93M-E.58e SEP/10
Boot Version-I.08g MAY/10
H/W Issue-I

Find PGM

Hide Menu

- System ID & Numbering Plans
- Station Data
- Board Based Data
- CO Line Data
- System Data
- Station Group Data**
 - Station Group Overview
 - Station Group Assignment(190)**
 - Station Group Attributes(191)
 - Pick Up Group Overview
 - Pick Up Group(192)
- ISDN Line Data
- SIP Data
- Tables Data

[Station Group Assignment]

Group Number : Load Group Overview

Group Number is 622

Group Type : Voice Mail

Pick-up Attribute : OFF

SAVE GRP TYPE

Add Group Member

-

ADD STA RANGE

ADD/DEL STA NUM

Index	Member
1	5814
2	<input type="text"/>
3	<input type="text"/>
4	<input type="text"/>
5	<input type="text"/>

If it's not assigned well, you can set IPCR type and SIP for member in ADM 191.

iPECS Administration

Group Number : Load Group Overview

Group Number is 622

Group Type : Voice Mail Group

Pick-up Attribute : OFF

Attribute	Value	Range
Wrap-Up Timer	2	000 - 999 (sec)
Put Mail Index	1	
Get Mail Index	2	
Hunt Type	Terminal	
Overflow Timer	100	000 - 600 (sec)
Overflow Destination	STANET or Hunt	Station or Group Number
Forced Forward Destination	VSF Announce	System Speed Dial
Forced Forward Dest Usage	STANET or Hunt	Station or Group Number
Group Name	VSF Announce	System Speed Dial
Server Type	SYS SPD	System Speed Dial
Server Number	OFF	Max 12 Characters
Member Type	IPCR TYPE	01 - 70
	SIP TYPE	01 - 10
	Capacity	0 - 70

3.1.7 Automatic Station Recording & Destination

The Auto Recording Option and Destination must be defined for Stations linked to an Agent in the IPCR Agent Table. The Auto Record Option enables recording and the Destination defines the Voice Mail Group of the associated Call Recording server. The station number assigned Agent ID is automatically ON 58th item (Automatic Talk Recording Option : ON).

In the iPECS LIK/UCP Web Admin,

- Select the Administration tab,
- Select Station Data,
- Select Station Attributes,
- Enter the desired Station number and select Load,
- Enable the Auto Record Option,
- Enter the destination IPCR server Voice Mail Group number, and
- Select 'Save'.

1. If linked object is station, it should be set as below.

Item	Check	Attribute Name	Value
28	<input checked="" type="checkbox"/>	Two Way Record	ON
29	<input type="checkbox"/>	Message Scroll Speed	3
30	<input type="checkbox"/>	Hot DesK Station	OFF
31	<input type="checkbox"/>	Prefer CD or Group	White
32	<input type="checkbox"/>	Send SLT CLI Info	OFF
33	<input type="checkbox"/>	UCD Login Priority	checked
34	<input type="checkbox"/>	EZ PWD Login	Enable
35	<input type="checkbox"/>	ADMIN	Enable
36	<input type="checkbox"/>	VSF Access	Disable
37	<input type="checkbox"/>	Group Listening	Disable
38	<input type="checkbox"/>	Override Privilege	Disable
39	<input type="checkbox"/>	SMDR Hidden Dialed Digits	Disable
40	<input type="checkbox"/>	Voice Over	Enable
41	<input type="checkbox"/>	Prime Line	WARM
42	<input type="checkbox"/>	Alarm / Door Bell	Disable
43	<input type="checkbox"/>	DID DISA Wait/Show 2'nd PSTN CLI	OFF
44	<input type="checkbox"/>	Left Msg Exec	ON
45	<input type="checkbox"/>	E&MIC Headset	OFF
46	<input type="checkbox"/>	Enblock Mode	OFF
47	<input type="checkbox"/>	VMID Number	1001
48	<input type="checkbox"/>	Retrieve MSG Method	LIFO
49	<input type="checkbox"/>	Auto ACD DND	NONE
50	<input type="checkbox"/>	FWD if DOS	OFF
51	<input type="checkbox"/>	Back Light M Sage	BUSY ONLY
52	<input type="checkbox"/>	Emergency CD or Group	White
53	<input type="checkbox"/>	Station Account	ON
56	<input type="checkbox"/>	SIP USER TABLE INDEX	White
57	<input type="checkbox"/>	VSF/VMIM GW Slot Seq.	White
58	<input checked="" type="checkbox"/>	Automatic Talk Recording Option	ALL
59	<input checked="" type="checkbox"/>	Automatic Talk Recording Dest.	620

2. If linked object is co, it should be set as below.

The screenshot shows the iPECS Administration interface. On the left, a sidebar lists various configuration categories. The 'CO Line Data' category is selected, and the 'CO/IP Attributes(140-142) [N]' sub-category is highlighted. The main area displays a list of configuration items for CO Line Data. The 'Automatic Talk Recording Dest.' is set to 620, and the 'Max 8 Characters' label is visible. Other items include 'CO Line Signal' (DTMF), 'Flash Type' (LOOP), 'Universal Answer' (OFF), 'CO/IP Group Authorization' (OFF), 'Data(Fax) Station Number', 'CO Tenancy Group' (0), 'CO/IP Name Display' (OFF), 'CO Name Assign' (Max 12 Characters), 'SMDR Metering Unit' (NONE), 'Line Drop (CPT)' (OFF), 'Maintain CPT on Talking (Answered by User)' (OFF), 'DISA Account Code' (ON), 'CO Line MOH' (Int:Ext1), 'CO Dial Tone' (ON), and 'CO Ring Back Tone' (OFF). A 'Save' button is located in the top right corner.

3.1.8 Trace and Monitoring

1. If there are some problems, you can trace it as below in MFIM.

```
mon> t s call
mon> t s rawdata
mon> t s debug(there is no agent Id in ADM 237)
mon> t b 5 ( if 5 is slot of IPCR server, server cannot register system)
mon> t s fsipm ( if SIP phone of IPCR cannot register to System LIK)
mon> t v
..
mon> x
..
```

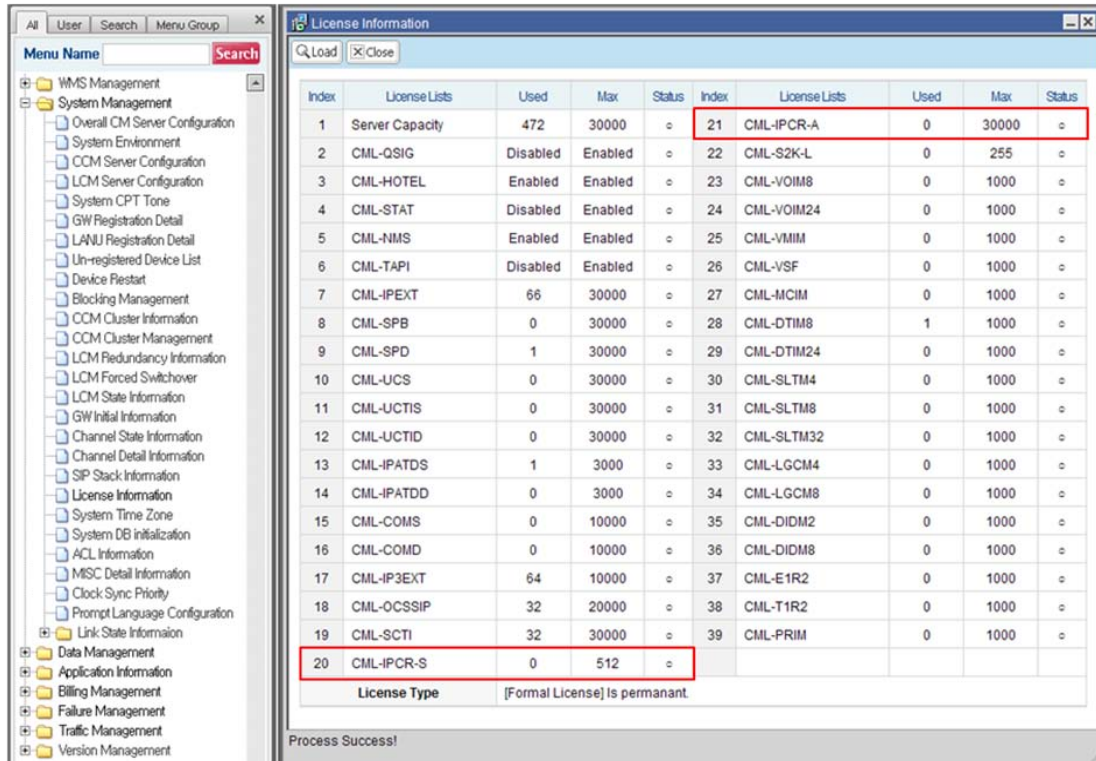
2. You can capture ethereal packets between IPCR and LIK system if there is no recorded files in IPCR.

3.2 iPECS CM

3.2.1 Unlock up to number of IPCR server and Agent ID

Lock key of IPCR should be unlock up to number of server and Agent ID. Server can be register up to 512. And so the servers can unlock up to 30000.

Agent can be register up to System station number, it's depend on system capacity.



The screenshot displays the 'License Information' window in the iPECS CM software. On the left is a 'Menu Name' search bar and a tree view of system management options. The main area contains a table with license details. Two rows are highlighted with red boxes: row 21 (CML-IPCR-A) and row 20 (CML-IPCR-S). The table has columns for Index, License Lists, Used, Max, and Status. Below the table, it indicates the license type is '[Formal License] Is permanent.' and shows a 'Process Success!' message at the bottom.

Index	License Lists	Used	Max	Status	Index	License Lists	Used	Max	Status
1	Server Capacity	472	30000	○	21	CML-IPCR-A	0	30000	○
2	CML-QSIG	Disabled	Enabled	○	22	CML-S2K-L	0	255	○
3	CML-HOTEL	Enabled	Enabled	○	23	CML-VOIM8	0	1000	○
4	CML-STAT	Disabled	Enabled	○	24	CML-VOIM24	0	1000	○
5	CML-NMS	Enabled	Enabled	○	25	CML-VMM	0	1000	○
6	CML-TAPI	Disabled	Enabled	○	26	CML-VSF	0	1000	○
7	CML-IPEXT	66	30000	○	27	CML-MCIM	0	1000	○
8	CML-SPB	0	30000	○	28	CML-DTIM8	1	1000	○
9	CML-SPD	1	30000	○	29	CML-DTIM24	0	1000	○
10	CML-UCS	0	30000	○	30	CML-SLTM4	0	1000	○
11	CML-UCTIS	0	30000	○	31	CML-SLTM8	0	1000	○
12	CML-UCTID	0	30000	○	32	CML-SLTM32	0	1000	○
13	CML-IPATDS	1	3000	○	33	CML-LGCM4	0	1000	○
14	CML-IPATDD	0	3000	○	34	CML-LGCM8	0	1000	○
15	CML-COMS	0	10000	○	35	CML-DIDM2	0	1000	○
16	CML-COMD	0	10000	○	36	CML-DIDM8	0	1000	○
17	CML-IP3EXT	64	10000	○	37	CML-E1R2	0	1000	○
18	CML-OCSSIP	32	20000	○	38	CML-T1R2	0	1000	○
19	CML-SCTI	32	30000	○	39	CML-PRIM	0	1000	○
20	CML-IPCR-S	0	512	○					

License Type [Formal License] Is permanent.

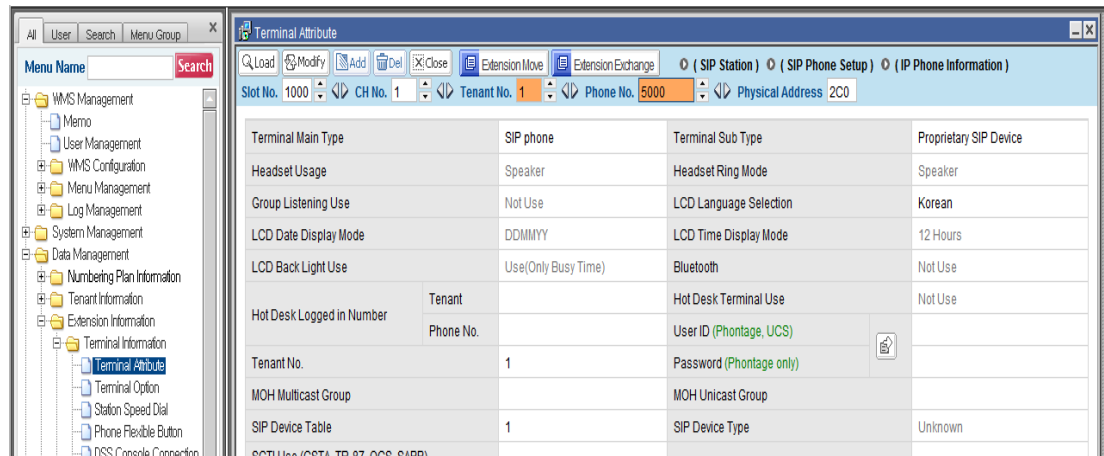
Process Success!

3.2.2 IPCR Agent ID

Agent ID should be matched with a station number that wants to be recorded.

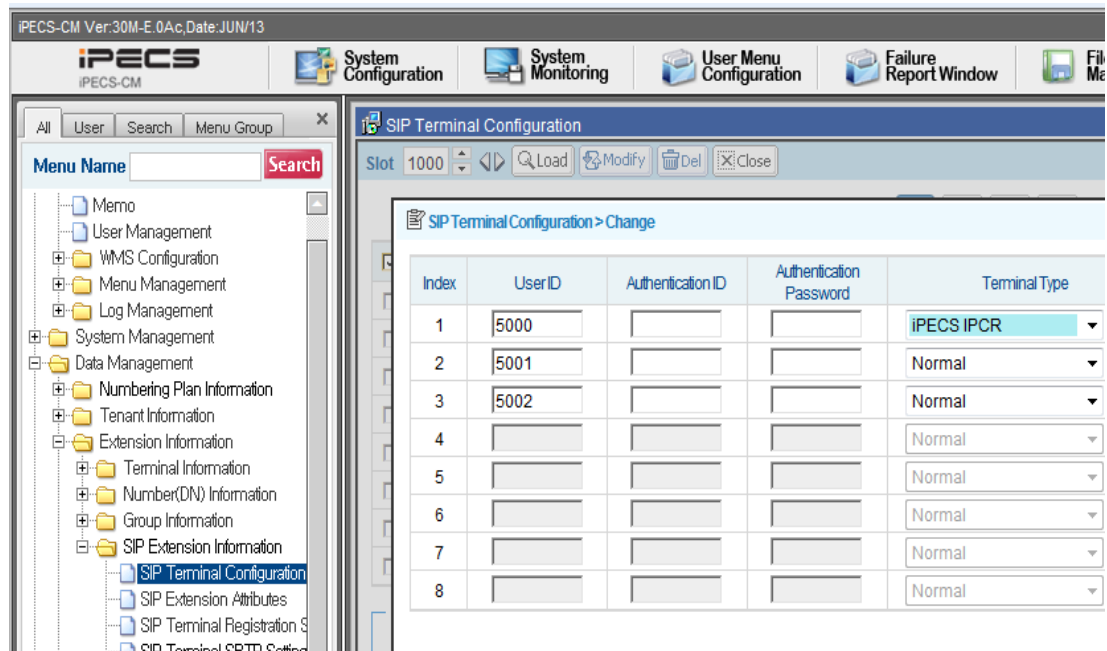
3.2.3 IPCR SIP Station Registration

IPCR's sip station should be register through IPCR server process of registration.



Attribute	Value
Terminal Main Type	SIP phone
Headset Usage	Speaker
Group Listening Use	Not Use
LCD Date Display Mode	DDMMYY
LCD Back Light Use	Use(Only Busy Time)
Hot Desk Logged in Number	Tenant Phone No.
Tenant No.	1
MOH Multicast Group	
SIP Device Table	1
Terminal Sub Type	Proprietary SIP Device
Headset Ring Mode	Speaker
LCD Language Selection	Korean
LCD Time Display Mode	12 Hours
Bluetooth	Not Use
Hot Desk Terminal Use	Not Use
User ID (Phonage, UCS)	
Password (Phonage only)	
MOH Unicast Group	
SIP Device Type	Unknown

And set SIP user ID with tenant prefix number and make empty auth ID and password.



Index	UserID	Authentication ID	Authentication Password	Terminal Type
1	5000			iPECS IPCR
2	5001			Normal
3	5002			Normal
4				Normal
5				Normal
6				Normal
7				Normal
8				Normal

If a SIP is assigned to “Proprietary SIP Device”, then you can see the IPCR Device Information.

IPCS-CM Ver:30M-E.0Ac,Date:JUN/13

iPECS

System Configuration System Monitoring User Menu Configuration Failure Report Window

All User Search Menu Group

Menu Name Search

- WMS Management
 - Memo
 - User Management
 - WMS Configuration
 - Menu Management
 - Log Management
- System Management
- Data Management
- Application Information
 - SNMP Service Information
 - CTI Information
 - WMS Information
 - TAPI Information
 - DB Sync Server Information
 - UCS Server Information
 - LDAP Server Information
 - Fidello Server Information
 - VCS Table Information
 - IPCR Device Information**
 - Cloud Server Information

IPCR Device Information

Tenant Phone No. Load Modify Close

Total Count 3

Tenant	Phone No.	IP Address	Physical Address	Agent Count
1	5000	192.168.122.187	02C0	1000
1	5001	0.0.0.0	02C1	
1	5002	0.0.0.0	02C2	

| 01 |

Process Success!

You should set IP address of IPCR and the number of agent count. Agent count is restricted in license. Also, if the IPCR is completely registered to iPECS-CM, you can verify that the Terminal Type of the SIP Station is set to “IPCR”.

IPCS-CM Ver:30M-E.0Ac,Date:JUN/13

iPECS

System Configuration System Monitoring User Menu Configuration Failure Report Window File Management

All User Search Menu Group

Menu Name Search

- WMS Management
 - Memo
 - User Management
 - WMS Configuration
 - Menu Management
 - Log Management
- System Management
- Data Management
 - Numbering Plan Information
 - Tenant Information
 - Extension Information
 - Terminal Information
 - Number(DN) Information
 - Group Information
 - SIP Extension Information
 - SIP Terminal Configuration**
 - SIP Extension Attributes
 - SIP Terminal Registration S
 - SIP Terminal SRTP Setting
 - SIP Terminal Authentication

SIP Terminal Configuration

Slot 1000 Load Modify Del Close

Index	Extension Phone No.	SIP Extension Attributes
<input checked="" type="checkbox"/> 1	5000	<input checked="" type="checkbox"/>
<input type="checkbox"/> 2	5001	<input type="checkbox"/>
<input type="checkbox"/> 3	5002	<input type="checkbox"/>
<input type="checkbox"/> 4		<input type="checkbox"/>
<input type="checkbox"/> 5		<input type="checkbox"/>
<input type="checkbox"/> 6		<input type="checkbox"/>
<input type="checkbox"/> 7		<input type="checkbox"/>
<input type="checkbox"/> 8		<input type="checkbox"/>

Menu Link

☒ SIP Extension Attributes

SIP Terminal Configuration > Display

Index	1
Authentication ID	
Authentication Password	*****
Connection Type (NAT)	Normal
Terminal Type	IPCS IPCR
LCM Local SIP Term IP	
SRTP Use	No
First / Second Key	ARIA_CM_192_HMAC_SHA1_80
Call Recording Supported	No
Tone Play Supported	No
Use transparent SDP for SIP call	Not Use

Apply Close

3.2.4 VM Group Configuration for IPCR Server

You don't need to program about this. iPECS CM uses a different mechanism.

3.2.5 Automatic Station Recording & Destination

An agent ID in IPCR means a station number which has to be programmed to record its voice. So, If Agent ID information is sent to iPECS-CM from IPCR, the Two-way record Device information is automatically set with IPCR SIP number on the agent ID number's DN Voice Mail Information Attribute in WMS and also the Two-way record start mode is automatically set according to the Agent ID recording type of IPCR.

Voice Mail Information	
Tenant	1
Phone No.	4000
VM Access	Use
Internal VM Check	from latest MSG
Number of Message (New / Saved / Urgent)	0 / 0 / 0
Voice Mail Device	Tenant
	Feature Code / Phone No.
Two-way Record Device	Tenant
	Feature Code / Phone No.
Two-way Record Start Mode	Start with button on conversation(ODR)
ODR Record Type for IPCR Device	Partial

3.3 iPECS MG

3.3.1 IPCR server and Agent Unlock Codes

Lock key of IPCR should be unlock up to number of server and Agent ID. Only one server can be registered. Agent can be register up to System station number, it's depend on system capacity.

Agent ID should be matched with a station number that wants to be recorded. You don't need to unlock programming

3.3.2 IPCR Agent ID

An agent ID in IPCR means a station number which has to be programmed to record its voice. So, If Agent ID information is sent to iPECS-MG from IPCR, the Two-way recording destination(PGM145-Index5) is automatically set with IPCR SIP number and also the Auto-Record Service mode(PGM145-Index 3) is automatically set according to the Agent ID recording type of IPCR.

iPECS-MG/GS55M-B.0Ab AUG/11
Boot Version-1.1Ab AUG/11
OS Version-1.1Ab AUG/11

Find PGM

Hide Menu

- Pre-Programmed Data
- Numbering Plan
- Station Port Data
- Station Number Data**
 - Station DN Assignment(130)[N]
 - Station DN Attribute(131~135)[N]
 - Private CO Attribute(136)[N]
 - COS Assignment(137)[N]
 - Auto Dial Attribute(138)[N]
 - Preset Call Forward(142)[N]
 - Call Forward(143)[N]
 - VMIB Attribute(145,147)[N]**
 - Mobile Extension Attribute(146)[N]
 - CO/IP Group Access(150)[N]
 - Page Group Access(151)[N]
 - Command Group Access(152)[N]
 - Station Name Display[N]

[Station VMIB Attribute]

Enter Station Range : - Load Overview

Station Range From 1000 to 1000

Order	Attribute	Value
PGM 145		
1	VMIB Access	ENABLE
2	Prompt Language Index	FIRST
3	Auto-Record Service	ON (NO-USB)
4	Two-Way Record Access	DISABLE
5	Two-Way Recording Destination (if not assigned : Destination is Internal VMIB)	1032
6	VM MSG Backup Phontage Number	
7	VM MSG Backup Delete Option	DISABLE
8	VMIB Message Retrieve Type	LIFO
9	VMIB Urgent Message No	000
10	VMIB New Message No	000
11	VMIB Saved Message No	000
12	DND Forward to VMIB	DISABLE
13	Company Directory - First Name	
14	Company Directory - Last Name	

3.3.3 IPCR SIP Station Registration

IP address and SIP station number for IPCR server should be programmed in advance.

System Attributes configuration screen. The left sidebar shows a tree view with 'System Attribute(223)[N]' selected. The main area displays a table of system attributes. Attributes 21 and 22 are highlighted with red boxes.

Order	Attribute	Value	Range
1	Web Admin Password Encryption	OFF	
2	Pulse Dial Break/Make Ratio	66/33	
3	Voice Mail SMDI Interface	OFF	
4	VMIB SMTP Port	25	0000-9999
5	Network Time/Date	Disable	
6	CLI Print	OFF	
7	TLS for Web	OFF	
8	Web Server Port	80	00001-65535
9	Database Auto USB download	OFF	
10	Database Auto Download Hour	0	00-23
11	UCS Server IP Address	0.0.0.0	IP address
12	CTI Server IP Address	0.0.0.0	IP address
13	MODEM Associated CO Line	0	
14	IP Phone Registration by STA Number	ON	
15	Analog Line BUSY Tone Detection Times	3	
16	Analog Line ERROR Tone Detection Times	4	
17	PSU FAN Alarm	ON	
18	Line Fault Alarm	ON	
19	Traffic Operation	OFF	
20	Enhanced VM Features	OFF	New Prompts Needed
21	IPCR Server IP Address	192.168.122.94	IP address
22	SIP EXT Number for IPCR	1032	Station number

And set SIP user ID and make empty auth ID and password.

SIP Station Basic Registration Table configuration screen. The left sidebar shows a tree view with 'SIP STA Basic Registration(300)[N]' selected. The main area displays a table with columns for Index, Station Number, User ID, Authentication ID, and Password. The first row is highlighted with a red box.

Index	Station Number	User ID (Max 32)	Authentication ID (Max 64)	Password (Max 32)
1	1032	1032		
2	1033	1033	1033	1033
3	1034	1034	1034	1034
4	1035	1035	1035	1035
5	1036			
6	1037			
7	1038			
8	1039			
9	1040			
10	1041			
11	1042			
12	1043			
13	1044			
14	1045			
15	1046			
16	1047			
17	1048			
18	1049			
19	1050			
20	1051			

Also, if the IPCR is completely registered to iPECS-MG, you can verify that the Terminal Type of the SIP Station is set to "IPCR".

[SIP Station Additional Registration Attributes]

Enter Station Range : -

Station Range From 1032 to 1032

Uncheck All	Attribute	Value	Remark
<input type="checkbox"/>	Station Number	1032	
<input checked="" type="checkbox"/>	Registering Mode	Manual	
<input checked="" type="checkbox"/>	Registration Status	Registered	
<input checked="" type="checkbox"/>	IP Address	192.168.122.94	(only for first station)
<input checked="" type="checkbox"/>	IP Port	5060	
<input checked="" type="checkbox"/>	Device NAT Usage	NO NAT	
<input checked="" type="checkbox"/>	Transfer Mode	UDP	
<input checked="" type="checkbox"/>	SIP Phone Type	iPECS IPCR	
<input checked="" type="checkbox"/>	Registration Timer	3600	
<input checked="" type="checkbox"/>	Keep Alive Usage	OFF	

VM Group Configuration for IPCR Server

You don't need to program about this. iPECS-MG uses a different mechanism.

3.3.4 Automatic Station Recording & Destination

An agent ID in IPCR means a station number which has to be programmed to record its voice. So, If Agent ID information is sent to iPECS-MG from IPCR, the Two-way recording destination(PGM145-Index5) is automatically set with IPCR SIP number and also the Auto-Record Service mode(PGM145-Index 3) is automatically set according to the Agent ID recording type of IPCR.

[Station VMIB Attribute]

Enter Station Range : -

Station Range From 1000 to 1000

Order	Uncheck All	Attribute	Value
PGM 145			
1	<input checked="" type="checkbox"/>	VMIB Access	ENABLE
2	<input checked="" type="checkbox"/>	Prompt Language Index	FIRST
3	<input checked="" type="checkbox"/>	Auto-Record Service	ON (NO-USB)
4	<input checked="" type="checkbox"/>	Two-Way Record Access	DISABLE
5	<input checked="" type="checkbox"/>	Two-Way Recording Destination (If not assigned : Destination is Internal VMIB)	1032
6	<input checked="" type="checkbox"/>	VM MSG Backup Phontage Number	
7	<input checked="" type="checkbox"/>	VM MSG Backup Delete Option	DISABLE
8	<input checked="" type="checkbox"/>	VMIB Message Retrieve Type	LIFO
9	<input checked="" type="checkbox"/>	VMIB Urgent Message No	000
10	<input checked="" type="checkbox"/>	VMIB New Message No	000
11	<input checked="" type="checkbox"/>	VMIB Saved Message No	000
12	<input checked="" type="checkbox"/>	DND Forward to VMIB	DISABLE
13	<input checked="" type="checkbox"/>	Company Directory - First Name	
14	<input checked="" type="checkbox"/>	Company Directory - Last Name	

4. IPCR Installation

4.1 IPCR Installation

Follow the process below to install the IPCR application.

1. Login to terminal with the root Identification.

```
# su root
Password
```

- # su root – Change to root identification
- Password – Input the password

2. Download the Install file (install_ipcr.tar.gz) to the /root folder in the server. Locate the folder with the file and copy to the /root folder.

```
# cd 'located folder'
# cp install_ipcr.tar.gz /root
```

- # cd 'located folder' – Change directory to the folder with the file
- # cp install_ipcr.tar.gz /root – Copy the *install_ipcr.tar.gz* file to /root

3. In the /root folder, extract the file.

```
# tar xvfzp install_ipcr.tar.gz -C /
```

4. Check the install.sh permission.

```
# ls -al install.sh
```

The server response should appear similar to below indicating the insall.sh is available.

```
-rwxrwxrwx 1 root root 1388 2010-07-21 09:01 install.sh
```

5. Install the IPCR application with the “install.sh” command.

```
# ./install.sh
...
```

Error Case: If it's failed and cannot create directory error,

You can delete */usr/furence* as following

```
# rm -rf /usr/furence
```

And retry to install again.

```
# tar xvfzp install_ipcr.tar.gz -C /
```

Check the install.sh permission.

```
# ls -al install.sh
```

6. After Installation is complete, the server will reboot.

The system is going down for reboot NOW!

7. After the reboot, the server *fcmanager* will start the IPCR application process.

8. Check the IPCR application status with the below command.

```
# ps -ef | grep IPCR
```

The server should return the message with the PID

```
root      9522      1  0 13:48 ?        00:00:00 ./IPCR
root     10154   9756  0 13:48 pts/2    00:00:00 grep IPCR
```

Note a single line response as below is abnormal.

```
root      9519   9484  0 13:48 pts/1    00:00:00 grep IPCR
```

If the IPCR application is not running, execute the *fcmanager* status command to determine the *fcdaemon* status.

```
# cd /usr/furence/bin
# ./fcmanager status
```

- # cd /usr/furence/bin – Change directory to the folder with the *fcdaemon* executable file.
- # ./fcmanager status – Command to determine the *fcdaemon* status.

If *fcdaemon* is running, the server should return the PID messages

```
[pid] = 25626, [ppid] = 1, [name] = fcdaemon
[pid] = 25627, [ppid] = 25626, [name] = SCHEDULER
[pid] = 25628, [ppid] = 25626, [name] = EXECUTER
[pid] = 25629, [ppid] = 25626, [name] = MONITOR
```

If the above command does not produce any information, restart as below.

```
# ./fcmanager start
```

- # ./fcmanager start – Command to restart *fcmanager* and *fcdaemon*, the IPCR application will restart automatically.

If *fcdaemon* is running but the IPCR application is not properly executed, verify the permission to run the IPCR application.

```
# ls -al IPCR
```

- # ls -al IPCR – Command to determine the IPCR application status.

The server response should appear indicating the IPCR application is available.

```
-rwxr-xr-x 1 root root 3184807 2010-09-08 17:17 IPCR
```

If different from the above, run the following command to change the permission.

```
# chmod 755 IPCR
```

- # chmod 755 IPCR – Change the permission to execute IPCR application.

4.2 Executing IPCR

The IPCR application can be started either directly or automatically.

To directly start the application: Login to the server root directory.

```
# cd /usr/furence/bin
# ./IPCR
```

- # cd /usr/furence/bin – Move to locate fcmanager file
- # ./IPCR – Execute IPCR

To execute automatically: Login to the server using root Identification.

```
# cd /usr/furence/bin
# ./fcmanager start
```

- # cd /usr/furence/bin – Move to the folder containing the fcmanager file.
- # ./fcmanager start – Execute fcmanager and start the IPCR application.

4.3 Terminate IPCR

Login to the server by root Identification though Terminal.

```
# cd /usr/furence/bin
# ps -ef | grep IPCR
# kill -9 xxxx
# ./fcmanager stop
```

- # cd /usr/furence/bin – Change directory to locate the fcmanager file
- # ps -ef | grep IPCR – Check Pid of IPCR
- # kill -9 xxxx – When you get the PID from grep command, terminate the process
- # ./fcmanager stop – Quit the fcmanager. If the IPCR application was initiate directly, there is no need to quit the fcmanager.

5. IPCR Administration

The IPCR application includes an integrated Web server that is employed for access to Administrative and User functions.

5.1 Access and login to Home Page

To access the Administrative and User functions:

1. Open a Web Browser, IE 8 or later is recommended.
2. Input IPCR Server IP address in the browser address box (Ex. <http://150.150.150.56>) and select Go.



- The IPCR Login screen will appear.

To login,

1. Select English or Local LANGUAGE, see Appendix B.
2. Input ID and PASSWORD, default ID and password are 'admin'.
3. If desired, check the 'Remember ID' box.
4. After login, you can configure Login ids and passwords for each User, see *section 5.2.1.2*.

5.2 Configuring IPCR

The IPCR Administration menu includes tabs at the top of the page for User registration, User admin level, PBX Registration, Channel registration, and Setting menus. Each tab displays the Web page associated with the menu and may include several lower level tabs.

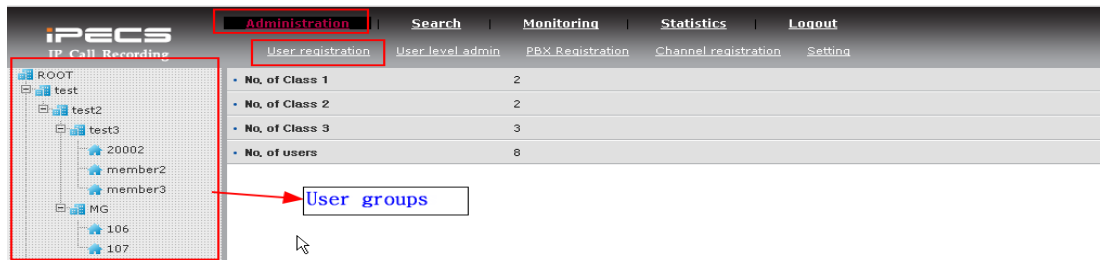
Prior to configuring the User, Channel, and Settings menus, the IPCR server and application must be registered with and logged into the iPECS host. The host should be configured for registration and login, see *sections 3.1.1 to 3.1.3*, and the IPCR Server Registration, *section 5.2.5.1*, and the iPECS PBX Registration, *section 5.2.3*, should be configured in IPCR prior to registration and login.

5.2.1 Registering a User

User Registration establishes User Groups and details for each user. Each user is registered with the IPCR application at one of three class or group levels, establishing a hierarchy. This function is often used to separate departments and groups for easier user and administration access. The initial Web page indicates the number of Users for each Class level in the main window and a tree display of user groups in the left window.

To access the User Registration page,

- Select the Administration tab from the Home page,
- Select the User Registration tab

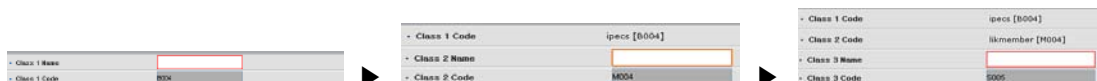


After selecting a Class (User Group) in the left window, the User details are defined under the User Registration menu, *section 5.3.1.2*.

5.2.1.1 User Group Registration

To add or modify a Class (User group),

- Select (click) a Class,
- Select the Add button,
- Enter a Class Name up to 40 characters,
- Select Save.



The Class code is automatically assigned and cannot be changed. A Group can be deleted using the delete button at the bottom of the page.

5.2.1.2 User Registration

Each user is identified and a Name assigned. The User Id and password are the credentials employed by the user for login to the IPCR Web functions. The User Level is the User Admin Level that determines the functions and features available to the user as configured in *section 5.2.2*. Note the Agent Ids are available only after registration and login to an iPECS host with licensed Agents. If enabled, the user activity in the IPCR Web application is logged.

To add a user,

- Select a Class,
- Select Add,
- Enter the required User details, in red boxes,
- Enter any optional information as desired,
- Select Save.

The screenshot shows the iPECS IP Call Recording Administration interface. The left sidebar displays a tree structure with nodes like ROOT, test, test2, test3, 20002, member2, member3, MG, 106, 107, q1, q2, q3, 7008, 7028, eeeee1, and Admin. The main area shows the 'User registration' form. The form includes the following fields and annotations:

- Class 1 Code:** test [B002]
- Class 2 Code:** test2 [M002]
- Class 3 Code:** test3 [S002]
- User ID:** 20002 (Red box) → Login ID, up to 12 Characters
- User Name:** 20002 (Red box) → up to 40 Characters
- Password:** **** (Red box) → Login password : up to 24 Characters
- Password verification:** **** (Red box) → Login password : up to 24 Characters
- Agent ID:** 20002 [20002] (Red box) → Select Agent ID
- Recording activation:** Yes (dropdown) All Call Recording (dropdown) → Choice ACR or ODR
- Employee ID:** (empty field)
- User level:** member (dropdown) → User's Admin Level
- Log activation:** Yes (dropdown) → Use Log or Not
- Registration date:** 20120312

To modify user information or delete a User,

- Select the User Name,
- Modify the data and select Save or,
- Select Delete.

5.2.2 User Admin level

Based on the User Admin Level, a user is allowed access to specified features and functions of the IPCR Web Server. A maximum of 10 User Admin levels can be configured.

To access the User Admin Level settings,

- Select the Administration tab from the Home page,
- Select the User level admin tab,
- Input a Level, up to 15 characters
- Check appropriate 'Activation' boxes for the User Level Admin
- Select Save.

The screenshot displays the iPECS IP Call Recording User Admin Level settings page. The page is divided into a sidebar on the left and a main content area on the right. The sidebar contains a 'Levels' section with a list of user levels: 'member', 'agent', and 'user'. The 'member' level is currently selected. The main content area shows a table of features and their activation status for each level. The features listed are: User registration, Auto Backup Setting, Call statistics, Channel registration, Fault Management, IPCR Server Log View, IPCR Server Registration, License information, PBX Registration, Real time call monitoring, Search & Play, Setting, Storage monitoring, and User level admin. The 'Real time call monitoring' and 'Search & Play' features are highlighted with red boxes. The 'Real time call monitoring' feature has a checked checkbox and radio buttons for 'ALL', 'Class 1', 'Class 2', 'Class 3', and 'Agent'. The 'Search & Play' feature has a checked checkbox and radio buttons for 'ALL', 'Class 1', 'Class 2', 'Class 3', and 'Agent'. A blue box labeled 'User Admin Level selection box' points to the 'member' level in the sidebar. A blue box labeled 'Check boxes to permit for activate' points to the activation options for 'Real time call monitoring'.

Feature	member	agent	user
User registration	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Auto Backup Setting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Call statistics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Channel registration	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Fault Management	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
IPCR Server Log View	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
IPCR Server Registration	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
License information	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PBX Registration	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Real time call monitoring	<input checked="" type="checkbox"/> <input type="radio"/> ALL <input type="radio"/> Class 1 <input type="radio"/> Class 2 <input type="radio"/> Class 3 <input type="radio"/> Agent	<input checked="" type="checkbox"/> <input type="radio"/> ALL <input type="radio"/> Class 1 <input type="radio"/> Class 2 <input type="radio"/> Class 3 <input type="radio"/> Agent	<input checked="" type="checkbox"/> <input type="radio"/> ALL <input type="radio"/> Class 1 <input type="radio"/> Class 2 <input type="radio"/> Class 3 <input type="radio"/> Agent
Search & Play	<input checked="" type="checkbox"/> <input type="radio"/> ALL <input type="radio"/> Class 1 <input type="radio"/> Class 2 <input type="radio"/> Class 3 <input type="radio"/> Agent	<input checked="" type="checkbox"/> <input type="radio"/> ALL <input type="radio"/> Class 1 <input type="radio"/> Class 2 <input type="radio"/> Class 3 <input type="radio"/> Agent	<input checked="" type="checkbox"/> <input type="radio"/> ALL <input type="radio"/> Class 1 <input type="radio"/> Class 2 <input type="radio"/> Class 3 <input type="radio"/> Agent
Setting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Storage monitoring	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
User level admin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

A User admin level can be deleted using the Delete button.

5.2.3 iPECS PBX registration

IPCR can be configured to work with ten (10) iPECS systems simultaneously. Each iPECS system is defined under the PBX Registration tab. The SIP Id and password, the iPECS system Id and IP address are required. The Keep Alive timer is not used. The SIP Id and password are sent to the iPECS host during login. If assigned in the host, must match the Station User Id parameters in the iPECS host. Once the IPCR application is configured for PBX Registration and the iPECS host is configured for registration and login, the IPCR sever should be registered with the host.

Note a value must be entered for the Keep-alive timer however, the timer is not used.

To configure the iPECS host information for IPCR,

- Select the Administration tab from the Home page,
- Select the PBX Registration tab,
- Input the required iPECS host (PBX) information.
- Input optional information as desired.
- Select Save.

The screenshot shows the iPECS Administration interface with the PBX Registration tab selected. The form contains the following fields:

- PBX ID: 100
- PBX IP: 192.168.123.59
- SIP ID: 5899
- Location:
- Keep alive check interval: 3600 (Sec)
- PBX Name: Test50b
- Site name: lab
- SIP Password: 58**
- Remarks:

Buttons: Delete, Save, Clear

PBX ID	PBX Name	PBX IP	Site name	SIP ID	SIP Password	Location	Remarks	Keep alive check interval
100	Test50b	192.168.123.59	lab	5899	58**			3600

PBx ID : up to 5 Characters

PBx Name : up to 99 Characters

PBx IP : IP v4

Site Name : up to 99 Characters

SIP ID : up to 20 Characters

SIP Password : up to 20 Characters

Location : up to 99 Characters

Remark : up to 99 Characters

To delete a PBX ID,

- Select the PBX Id from the lower chart,
- Select Delete.

5.2.4 Channel registration

The IPCR will allocate channels based on the number of licenses defined for the server. Each channel is assigned an Agent ID, which is assigned a User name and is further associated with an object in the host iPECS database (PGM 237). The channel is configured to activate recording for all calls or on-demand, and log activation. One PBx needs at least one more channel. If there is no channel for one PBx, SIP of IPCR cannot work. Channel cannot erase it after register.

To configure IPCR channels,

- Select the Administration tab from the Home page,
- Select the Channel Registration tab,
- Input the channel characteristics including the Agent ID (up to 6-characters).
- Select Save.

Channel No.	PBX ID	Agent ID	User name	Recording activation	Recording type	Log activation
15	16120	1023	1023	Yes	ACR	Yes
4	600	106	106	Yes	ACR	No
5	600	107		Yes	ACR	No
6	600	20002	20002	Yes	ACR	Yes
1	600	3292	107	Yes	ACR	No
8	600	3203		No		No
2	LK50	4171	member2	Yes	ACR	No
3	LK50	4172	member3	Yes	ACR	No
7	600	5801	eeee1	Yes	ACR	No
9	600	7008	7008	Yes	ACR	Yes

5.2.5 Setting

5.2.5.1 IPCR Server Registration

IPCR Server Registration defines the IPCR server information for the application including IP address and path for Back-up services. At least one back-up path must be assigned. When assigning a back-up path, first define the path then click the 'Path Test' button to verify the path exists then 'Save' to store the path information. Server IP and ID should be assigned for IPCR's operations.

To configure the IPCR server information,

- Select the Administration tab from the Home page,
- Select the Setting tab,
- Select IPCR Server Registration,
- Input information as desired.
 - **ID:** up to 5 character,
 - **Server name:** up to 20 characters.
- Select Save.

5.2.5.2 Set Multi IPCR Master IP

Multi IPCR Master IP: If this is inserted, it will work as Multi. If it's not, it will work as single.

In case of Multi, user should set Master IP. If the IP is same as mine, I am Master. If it's not, I am Slave.

The screenshot shows the 'Multi IPCR Master IP' configuration page in the iPECS Administration interface. The page has a sidebar with navigation options like 'IPCR Server Registration', 'Fault Management', 'License Information', 'Auto Backup Setting', 'IPCR Server Log View', 'FTP Backup Setting', 'General', and 'Version'. The main content area contains several input fields: 'Multi IPCR Master IP' (highlighted with a red box), 'IPCR Server ID' (CR092), 'IPCR Server Name' (IPCR Test Server), 'IPCR Server IP' (150.150.150.41), 'Original path' (/var/REC/RecSee_Data), and three 'Backup path' fields (Backup path 1: /var/REC/RecSee_Backup, Backup path 2, and Backup path 3). Each backup path has a 'Path Test' button. At the bottom, there is a table with the following data:

IPCR Server ID	IPCR Server Name	IPCR Server IP	IPCR Server Type	Backup path 1
CR092	IPCR Test Server	150.150.150.41	Master	/var/REC/RecSee_Backup

IPCR Server ID is shown after multi IPCR Master IP set.

The screenshot shows the same 'Multi IPCR Master IP' configuration page, but now the 'IPCR Server ID' field is a dropdown menu showing 'CR092' (highlighted with a red box). The other fields and the table at the bottom remain the same as in the previous screenshot.

5.2.5.3 Delete Multi IPCR Master IP

1. Click Delete Button
2. It's work as single. All information related to Multi functions will be deleted.

5.2.5.4 Fault Management

Fault management establishes CPU, Memory, and disk usage thresholds for notification to an assigned e-mail. The maximum notification settings should be limited to twenty (20).

To configure Fault thresholds and notification,

- Select the Administration tab from the Home page,
- Select the Setting tab,
- Select Fault Management in the left window,

The screenshot displays the iPECS IP Call Recording Administration interface. The top navigation bar includes tabs for Administration, Search, Monitoring, Statistics, and Logout. Under the Administration tab, there are sub-tabs for User registration, User level admin, PBX Registration, Channel registration, and Setting. The left sidebar shows a tree view with 'IPCR TYPE : MASTER' at the top, followed by 'IPCR Server Registration', 'Fault Management' (which is selected), 'License information', 'Auto Backup Setting', 'IPCR Server Log View', 'FTP Backup Setting', 'General', and 'Version'. The main content area is titled 'IPCR Server ID: CR092'. It contains a 'Threshold' section with three dropdown menus for CPU, MEMORY, and Disk, each set to 0%. Below this is an 'E mail notification' section with two input fields for 'Name' and 'E mail'. At the bottom of this section are 'Delete', 'SAVE', and 'Clear' buttons. Below the input fields is a table with three columns: 'No', 'Name', and 'E mail'. The table is currently empty.

- Input the CPU, Memory, and Disk usage fault threshold levels.
- Input the Name and E-mail address to notify.
- Select Save.

To delete a notification,

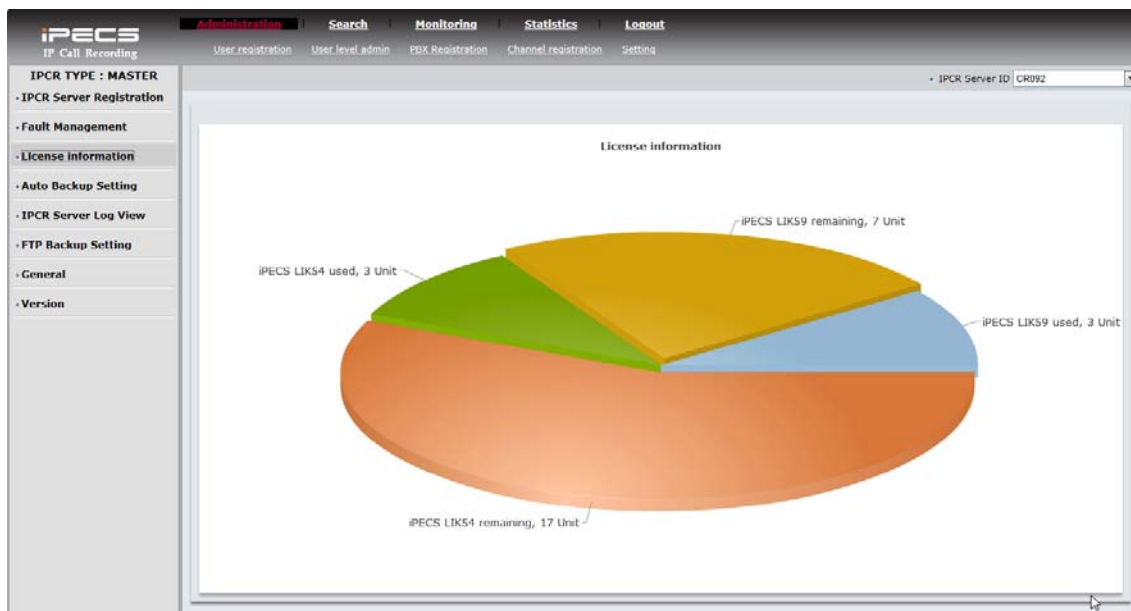
- Select a notification number from the chart in the lower portion of the main window,
- Select Delete.

5.2.5.5 License Information

Selecting License Information displays the total available agents, assigned agents and available agents for each host iPECS platform.

To view the license information,

- Select the Administration tab from the Home page,
- Select the Setting tab,
- Select License Information.



5.2.5.6 Auto Backup Setting

The IPCR application will perform a periodic backup of recordings. Automatic Backup defines the interval between backups, the source and destination paths, and copy or move. When the backup is copied, the original recording is maintained on the IPCR server and copied to the back-up path. When 'Move' is selected, the recording files are moved to the back-up path and deleted from the IPCR server. A log of back-up activity is maintained.

To set-up Automatic Backup,

- Select the Administration tab from the Home page,
- Select the Setting tab,
- Select Auto Backup Setting
- Select the Add button
- Configure the desired Automatic Back-up parameters,
- Press the Save button

The screenshot displays the 'Auto Backup Setting' configuration page in the iPECS Administration interface. The page is titled 'IPCR TYPE : MASTER' and includes a sidebar with navigation options like 'IPCR Server Registration', 'Fault Management', 'License information', 'Auto Backup Setting', 'IPCR Server Log View', 'FTP Backup Setting', 'General', and 'Version'. The main content area shows the 'Auto Backup Setting' form. The 'Back up schedule' section has dropdowns for Month (01), Day (01), Hour (01), and Minute (01). The 'Back up path' section has a 'Source' field with the value '/var/REC/RecSee_Data' and a 'Target' dropdown with the value '/var/REC/RecSee_Backup'. The 'Back up ahead of' section has a radio button for 'Month' and a dropdown for '01'. A 'Copy/Move' dropdown menu is highlighted with a red box, showing 'Copy' and 'Move' options. Below the form is a table with columns: Month, Day, Hour, Minute, Source, Target, Copy/Move, and Back up ahead of.. The table is currently empty. Buttons for 'Delete', 'SAVE', and 'Clear' are visible on the right side of the form.

Copy: Data saved and move

Move: Data deleted and move

Ex) Back up before 1 month ago

Ex) January 1st 01:01 Backup

To delete an Automatic Backup setting,

- Select the setting in the lower chart,
- Select the Delete button

5.2.5.7 IPCR Sever Log view

The Log view displays a log of various events and errors that occurred on the selected date, time, and type of log.

To view the IPCR Server log,

- Select the Administration tab from the Home page,
- Select the Setting tab,
- Select IPCR Log View from the left pane,

- Select the Log Date, Time, and/or Type,
- Select View.

Log Date	Log Time	Server	Log Type	ExtNo	Log Contents
2014-05-09	10:01:08	CR092	7320		[MONITOR] total Memory = 8232216 kb, Free Memory = 193116 kb, Used Memory Percentage = 2.35
2014-05-09	10:01:08	CR092	7310		[MONITOR] CPU usage : user = 0.12%, system = 0.16%, waiting = 0.41%
2014-05-09	10:01:08	CR092	7330		[MONITOR] disk usage percent = 1% at [/var/REC/RecSee_Data] mount position. total space = 423199192 kb, available space = 400879988 kb
2014-05-09	10:01:05	CR092	7320		[MONITOR] total Memory = 8232216 kb, Free Memory = 192992 kb, Used Memory Percentage = 2.34
2014-05-09	10:01:05	CR092	7310		[MONITOR] CPU usage : user = 0.19%, system = 0.18%, waiting = 0.19%
2014-05-09	10:01:05	CR092	7330		[MONITOR] disk usage percent = 1% at [/var/REC/RecSee_Data] mount position. total space = 423199192 kb, available space = 400890004 kb
2014-05-09	10:01:02	CR092	7500		[SCHEDULER] Enrolled Processes = 0
2014-05-09	10:00:55	CR092	7320		[MONITOR] total Memory = 8232216 kb, Free Memory = 191588 kb, Used Memory Percentage = 2.33
2014-05-09	10:00:55	CR092	7310		[MONITOR] CPU usage : user = 0.08%, system = 0.12%, waiting = 0.33%
2014-05-09	10:00:55	CR092	7330		[MONITOR] disk usage percent = 1% at [/var/REC/RecSee_Data] mount position. total space = 423199192 kb, available space = 400880004 kb

5.2.5.8 FTP Backup Setting

This is setting for backup using FTP. It can be backup automatically monthly, weekly and daily.

IPCR Server Registration	IP	ID	Password	Port	Protocol	FTP Backup Type	Mon Date	Mon Time	Day Of The Week	Weekly Time	daily Time	Check Term
CR092	192.168.123.123	Rp	*****	21	Rp	Daily	-	-	-	-	1	1

1. **Setting:** Administration > Setting > FTP Backup Setting, Check term can be used for interval of checking ftp backup. It can be saved using **SAVE** button.

- **Data Setting:** monthly, weekly, and daily
- **Daily:** It will work daily on the time
- **Monthly:** It will work monthly on the day and time as below.

• Date Settings **monthly** • Day **1** • Time **00**

- **Weekly:** It will work weekly on the day and time as below.

• Date Settings **weekly** • Week **Sunday** • Time **00**

2. **Delete:** Press **Delete** button.
3. **Initialize:** If you press **Clear** button, you can set an initial format.

5.2.5.9 General (Etc.) Setting

The general Settings encompass e-mail settings, notification interval, and a Keep Alive timer. The e-Mail System Info defines the e-mail account the IPCR application will use to send e-mail fault notifications. The notification will be sent at intervals defined by the Fault notification period until the fault is cleared. It is recommended this be a sufficiently long period, greater than 3600-seconds, to allow correction of the fault. The Keep Alive check establishes the update timer for agent status on the Real Time monitor page.

This Web page also includes a Restart button. After changing information on a Web page, the button can be used to restart the IPCR application.

To modify the general settings,

- Select the Administration tab from the Home page,
- Select the Setting tab,
- Select Etc. Setting from the left pane,
- Input the desired settings,
- Select Save.

1. Mail Server Address, Second Address are up to 50 characters.
 - This Mail Server is used for testing.
2. IPKTS Alive Check is used for polling with LIK or UCP.
3. Voice file upload is used for announce of call recording. This wave file should be G.711 u-law.
4. You can upgrade it using *upgrade.tar.gz* file. You should not upgrade it using *install_ipcr.tar.gz*. *install_ipcr.tar.gz* should install only first time after install Fedora 16.

5.3 Server and Call Statistics

In addition to logs, the Administrator and allowed Users can view the status of the Server and the Call Statistics report.

5.3.1 Server Status Report

The Storage Monitor graphically displays the current CPU, memory and backup memory usage as well as a graph of memory use over time.

To view the Server status report,

- Select the Monitoring tab from the Home page,
- Select the Storage Monitoring tab,
- The Server Status report displays.



5.4 Call Statistics

The Call Statistics Web page delivers a graphical and tabular view of call traffic to the IPCR application. The type of call (incoming or outgoing), number of each call type and duration of the calls is provided. In addition, the Call Statistics report can be downloaded as a worksheet file for further analysis. The drop-down at the bottom left of the page can be used to select the number of records displayed on the page in multiples of ten (10).

To view the Call Statistics report,

- Select the Statistics tab from the Home page,
- Select the Call Statistics tab,
- Enter search criteria (Start date, End date, and Type),
- Select Search

To download the Call Statistics report

- Select Excel Download while viewing the desired report
- Follow the instructions to save the file locally.



6. Using iPECS Call Recording Server

Each Agent is assigned a User Id that is assigned with a User Admin level. The User Admin levels are configured to allow the user access to the various IPCR functions and features. In addition to access to the administrative and statistics, the User Admin Level can be configured to allow the user to search and play recordings, and monitor, in real-time, other users.

6.1 Search (Search & Play)

When a user is assigned a User Admin Level permitted access to Search and Play, the user may access the Search page. In the Search page, the user can input search criteria to locate specific call recordings. The user can listen to recordings, add a text memo to the recording log, and download the recording or log. In the upper left pane, the user can enter search criteria. Below the search entry area is the tree of users. At the top of the right pane are the typical playback controls (play, pause mute, volume, playback speed, etc.). Below the playback controls is a chart that will display a log of recordings matching the entered search criteria.

6.1.1 Search the Recording Log


The user can input various search criteria and display logs for recordings matching the search criteria. The Search page will display a list of recordings that match the search criteria. The number of records displayed on the page can be adjusted using the drop-down at the lower left of the main screen. Each record displays the Date, Time, CID, Agent and Call type as well as icons for listen, add a memo, or download the recording or log.

To search the recording log,

- Select the Search tab from the Home page,
- In the left pane, enter search criteria (Agent Id, User Id, CID, Type, Time and date),
- Select Search.


6.1.2 Listening to a Recording

To listen to a recording,

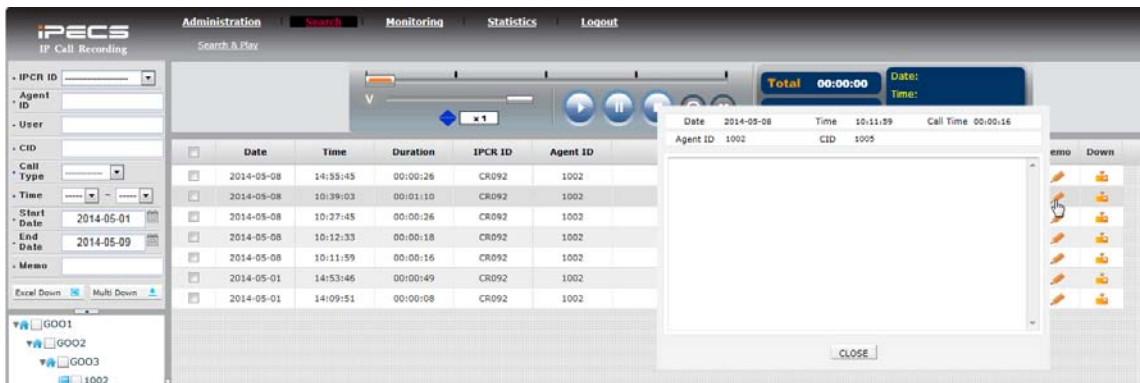
- Select the Listen icon, , to the right of the desired recording,
- Use the controls at the top of the window to control playback of the recording.

6.1.3 Add a Memo to a Recording

To add or display a memo,


- Select the Memo icon, , to the right of the desired recording
- In the pop-up screen enter the desired memo,
- Select 'Save' to store the memo and 'Close' to close the memo pop-up screen.

If a memo has been entered for a recording, additional memos can be added. In this case, the additional memos will display in different colors.

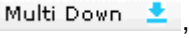


6.1.4 Download Logs or Recordings

To download the recording logs,


- Check the box to the left of the desired records,
- Select the Excel download button, ,
- Follow the on-screen instructions to name and save the log file.

To download a call recording,

- Check the box to the left of the desired recordings log,
- Select the Multi download button, ,
- Follow the on-screen instructions to name and save the log file.

6.2 Real Time Call Monitoring

The Real-time Call Monitoring page presents the status of the recording Agents and permits monitoring in-process call recordings. Agents are displayed as an icon, see *section 6.2.1*, or a tabular entry (Grid), see *section 6.2.2*. The user may select the view using the 'Icon View' or 'Grid View' buttons at the top of the left pane.





Users can monitor an active recording by selecting the listen icon, , for the agent. For On-demand recording Agents, a user can activate on-demand recording and listen to the live call. If desired the user can deactivate the on-demand recording. Note to monitor a call the user must have the 'RecSeeRM.ocx' component installed on their PC. When attempting to access an active Recording Agent without the component installed, the user will be asked to install the component.

6.2.1 Icon view

Selecting the Icon View button in the upper area of the left pane displays the recording Agent Icon View page below. Each Agent is represented by an icon with the User Id and name.




The icon indicates the Agent status as:

-  : Agent not active, logged out
-  : Agent logged in and idle
-  : ACR Agent busy and recording in process
-  : ODR Agent busy, the call recording button will flash to indicate recording in process

To monitor the call of an Agent that is in the recording state,


- Click the yellow headset in the Agent icon, the headset will flash and audio for the call is presented to the PC. The ActiveX 'RecSeeRM.ocx' component is required for monitoring an Agent.
- This real time monitoring use port 5800 and 5801. If your Client wants to monitor it in NAT surroundings, you need port forwarding 5800 and 5801.

To activate call recording for an On-demand recording Agent,

- Select the record button, , in the Agent icon, the button will flash and the Agent can be monitored as described above.
- To cancel the recording, press the record button again prior to completion of the call.










6.2.2 Grid view

Selecting the Grid View button in the upper area of the left pane displays the recording Agent Grid View page below. Each Agent is represented by an entry in the listing with the User Id name, Class (user group), Agent Id, and status icons.



User ID	User Name	No. of Class 1	No. of Class 2	No. of Class 3	Agent ID	Status
1002	1002	8002	M002	S002	1002	Login
1003	1003	8002	M002	S002	1003	Login
1004	1004	8002	M002	S002	1004	Login
2001	2001	8002	M002	S003	2001	Login
2002	2002	8002	M002	S003	2002	Login
2003	2003	8002	M002	S003	2003	Login


The Agent status is indicated by the icons as below:

-  Logout  : Agent not active, logged out
-  Login  : Agent logged in and idle
-  Busy  : ACR Agent busy and recording in process
-  Busy   : ODR Agent busy, the call recording button will flash to indicate recording in process

To monitor the call of an Agent that is in the recording state,

- Click the yellow headset in the Agent icon, the headset will flash and audio for the call is presented to the PC. The ActiveX 'RecSeeRM.ocx' component is required for monitoring an Agent.

To activate call recording for an On-demand recording Agent,

- Select the record button, , for the Agent, the button will flash and the Agent can be monitored as described above.
- To cancel the recording, press the record button again prior to completion of the call.

6.3 Logout

When completed with an IPCR Web session, the user should log-out of the application.

To Log-out,

- Select the Logout tab from the Home page,



6.4 Change Language

IPCR Web Application can change a local language for your country as below. You can download language pack from ftp Client.

1. Connect IPCR server with general FTP Client Program.
2. Enter /var/www/html/work/lang/kr
3. Copy all files to your directory from the directory(/var/www/html/work/lang/kr).
4. You can change the red refer to the blue character.

- **Example:** This is Korean.

```
<?xml version='1.0' encoding='EUC-KR'?>
<Request>
<data>
<list>
    <FRC_HeadTitle Stitle='====Setting====' Ttitle='====Setting====' />
    <FRC_BTN_save Stitle='저장' Ttitle='SAVE' />
    <FRC_BTN_modify Stitle='수정' Ttitle='Modify' />
    <FRC_BTN_del Stitle='삭제' Ttitle='Delete' />
    <FRC_BTN_clear Stitle='초기화' Ttitle='Clear' />
    <FRC_ProName Stitle='프로그램 이름' Ttitle='Program Name' />
    <FRC_GroupAuthority Stitle='계정 권한' Ttitle='Group Authority' />
    <FRC_Read Stitle='사용' Ttitle='Read' />
    <FRC_Write Stitle='쓰기' Ttitle='Write' />
</list>
</data>
</Request>
```

5. You should upload all files to the directory of IPCR server after modifying.

- **Object file list:**

- ProcSendControl.xml
- a_user_regist.xml
- agent_monitoring.xml
- clNavigation.xml
- detail.xml
- Ignortel_top.xml
- login.xml
- mainframe.xml
- permission.xml
- r_channel.xml
- r_logcheck.xml
- r_user_regist.xml
- report.xml
- search_listen.xml
- setting.xml
- system_monitoring.xml
- system_regist.xml
- system_regist_ipcr.xml

7. Useful Information

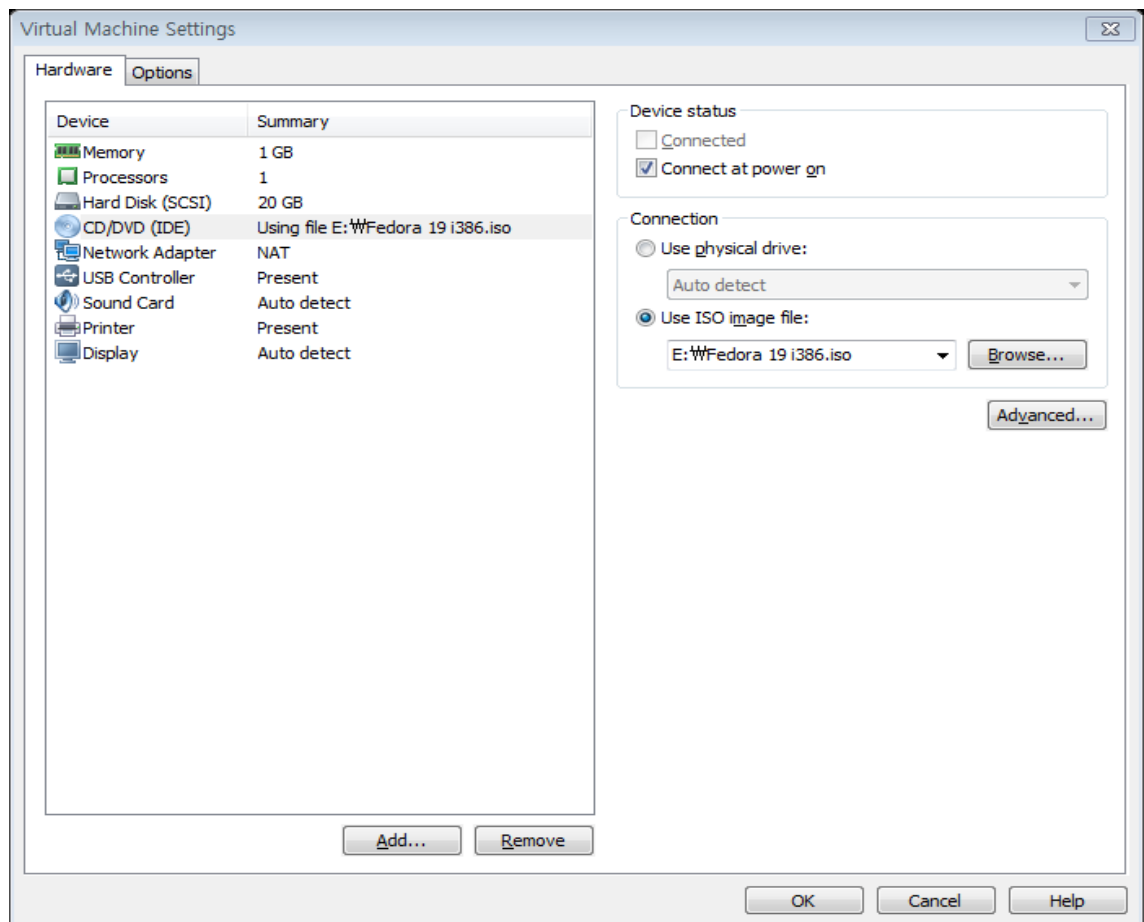
7.1 Fedora-19-i386 Install Guide

7.1.1 Download path for installation file

IPCR employs Fedora-19 Linux provided by Red Hat and others. A copy of the Linux OS can be obtained from the below link.

<http://ftp.neowiz.com/fedora/releases/19/Fedora/i386/iso/Fedora-19-i386-DVD.iso>

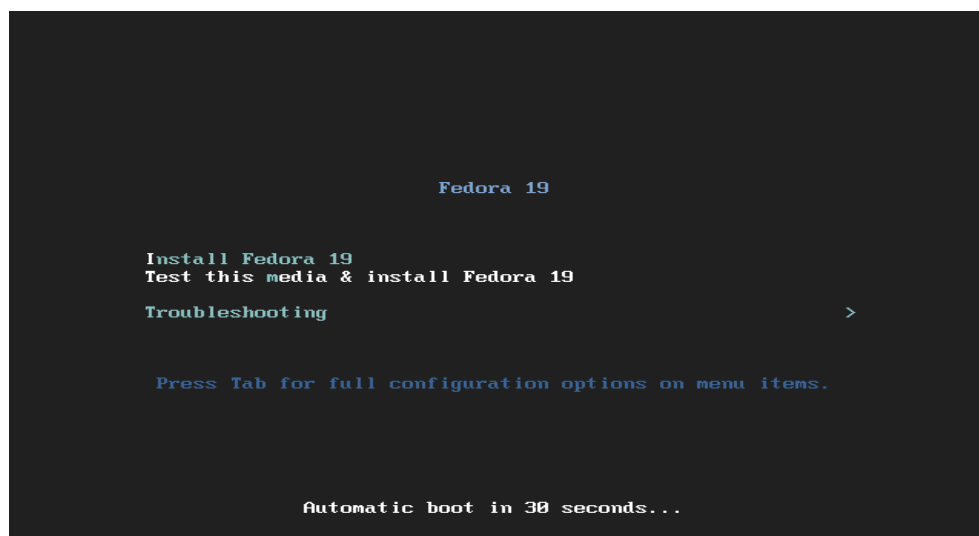
This is the installation guide in VM-ware using Fedora-19. You can set as following using Fedora-19-i386-DVD.iso. It's the same as installation in your real PC.



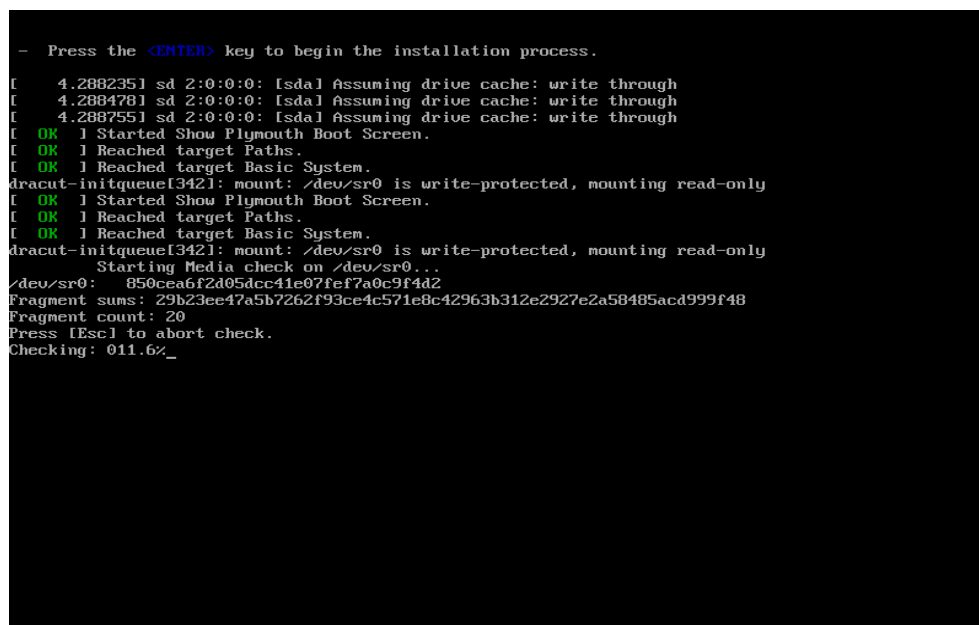
Or you can install Fedora-19 using DVD as following after making Fedora-19-i386-DVD.iso DVD.

7.1.2 Install Fedora-19-i386

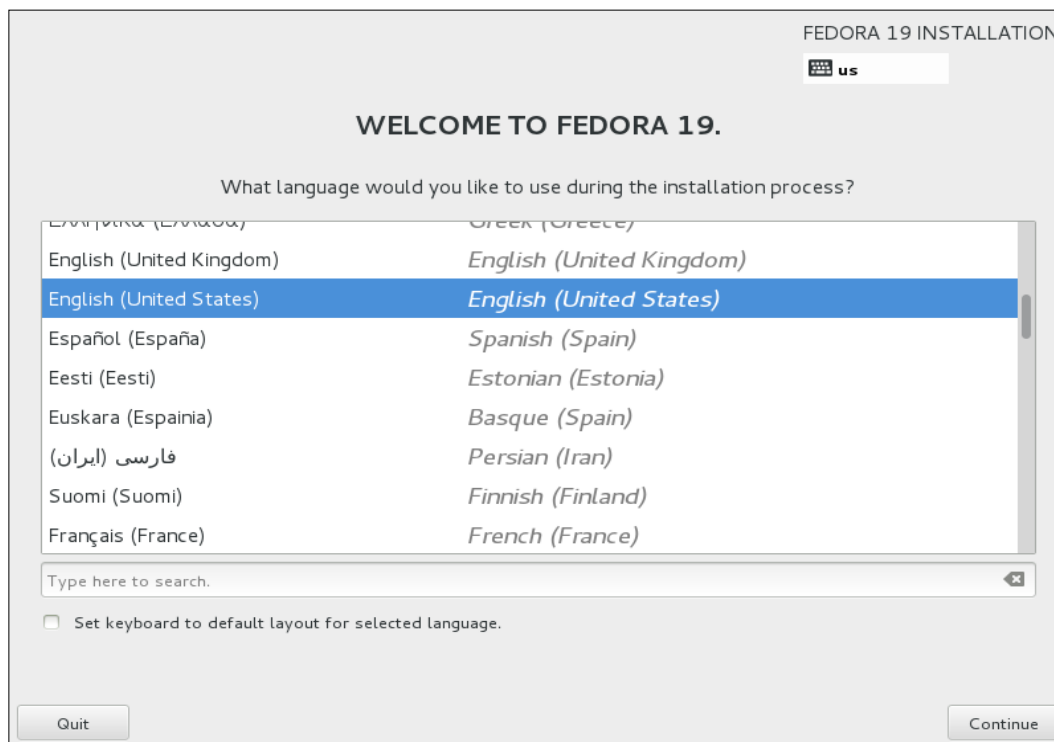
- Select the “Install system with basic video driver” Option > Enter.



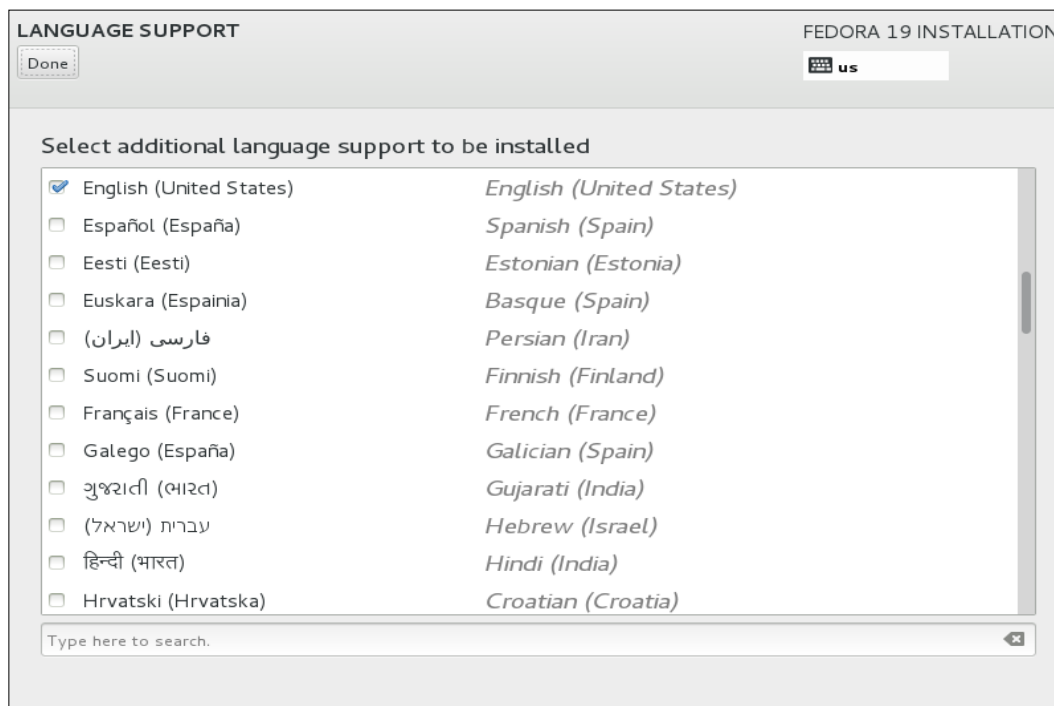
- The media test is not required. Select “Skip” or practice as below.



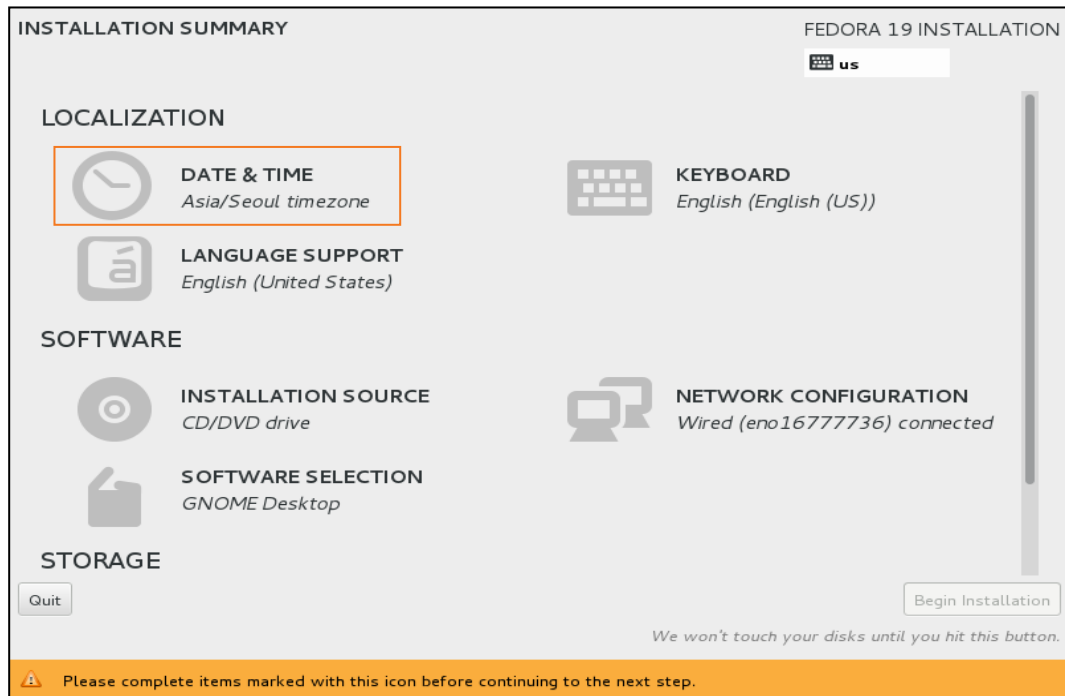
1. Install language and Next.



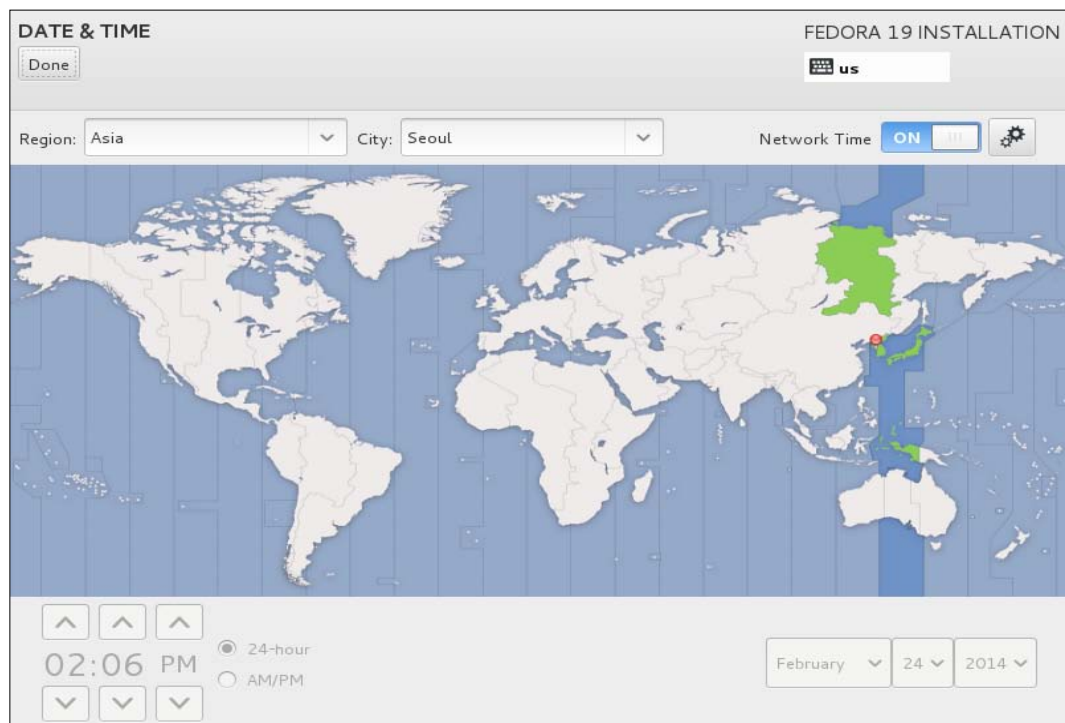
2. This is optional by language.



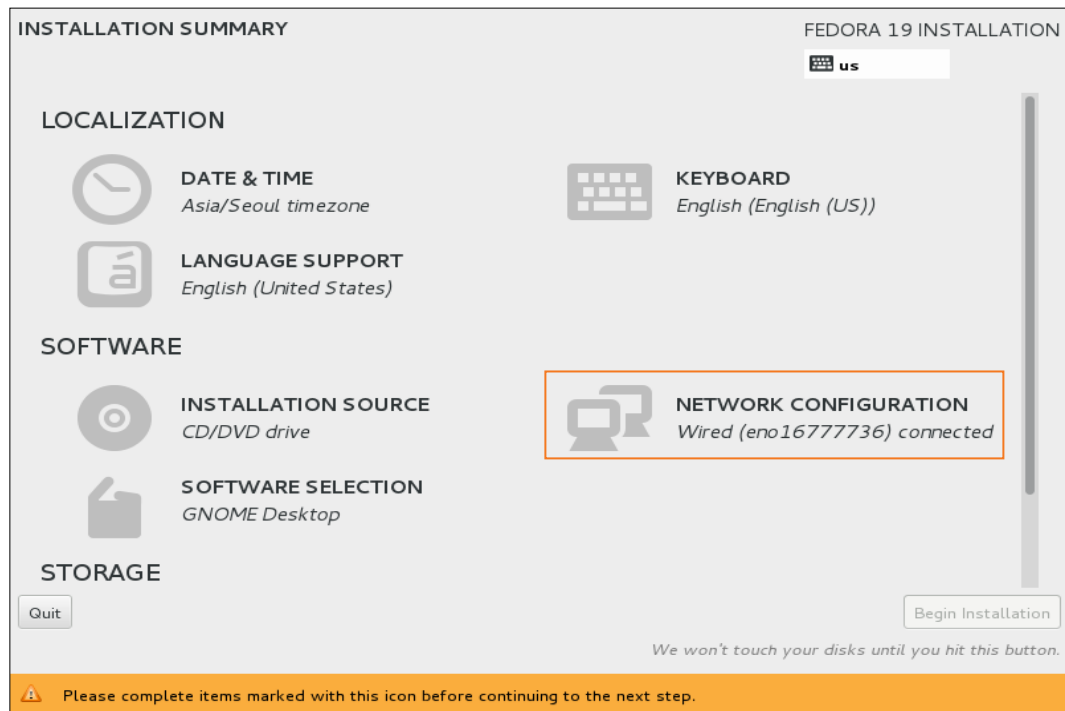
3. DATE & TIME click.



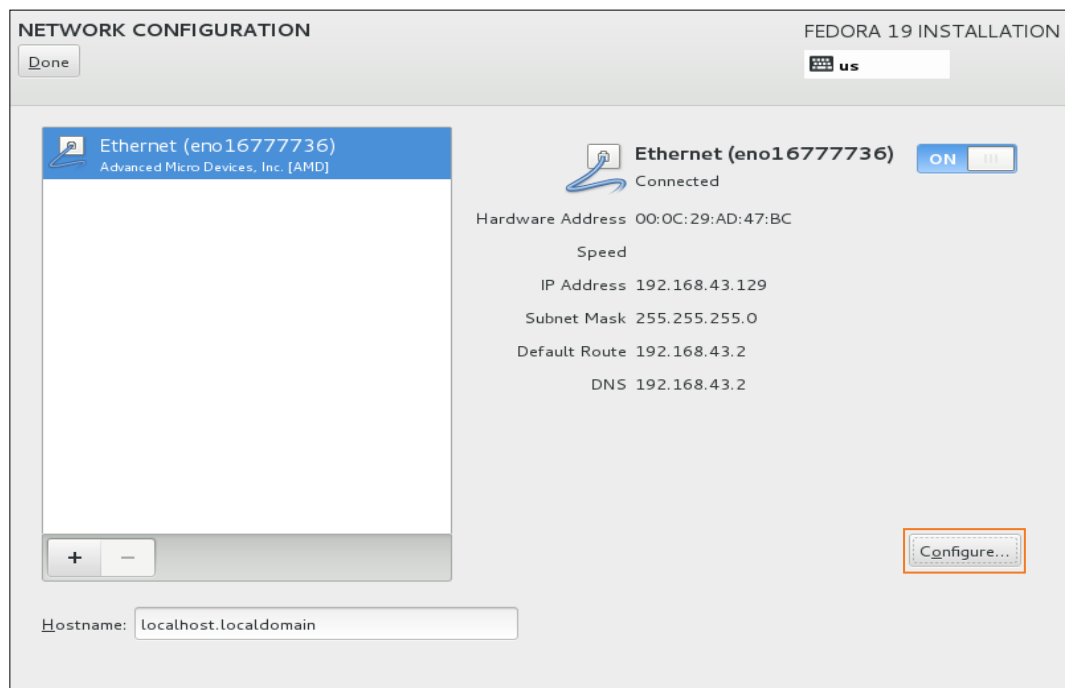
4. TIME Select and click Done.



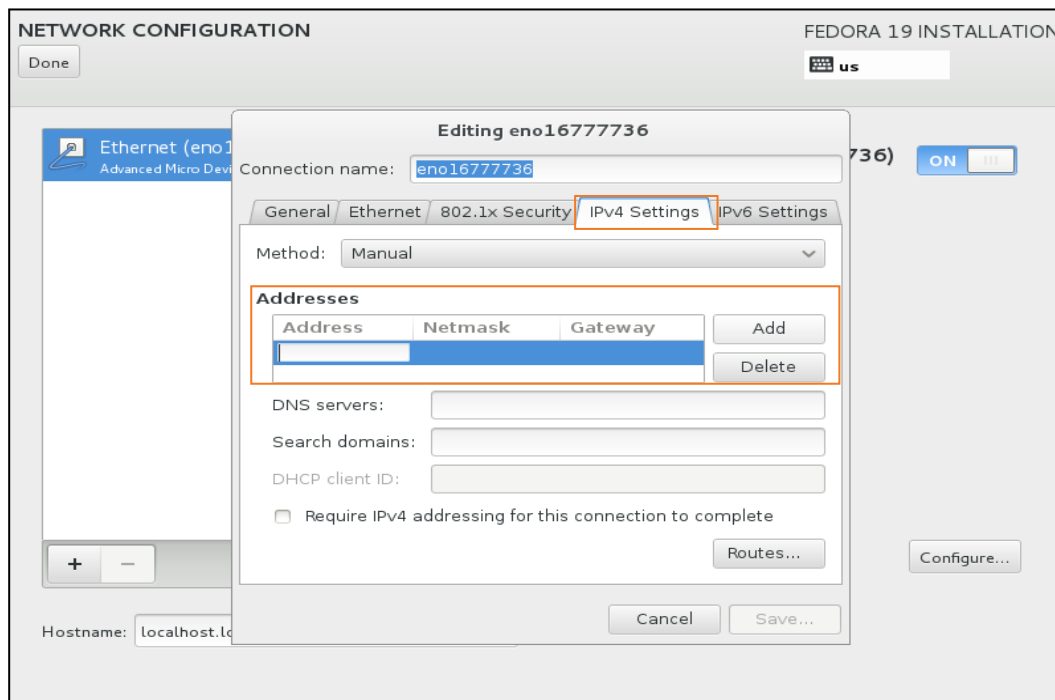
5. NETWORK CONFIGURATION Click.



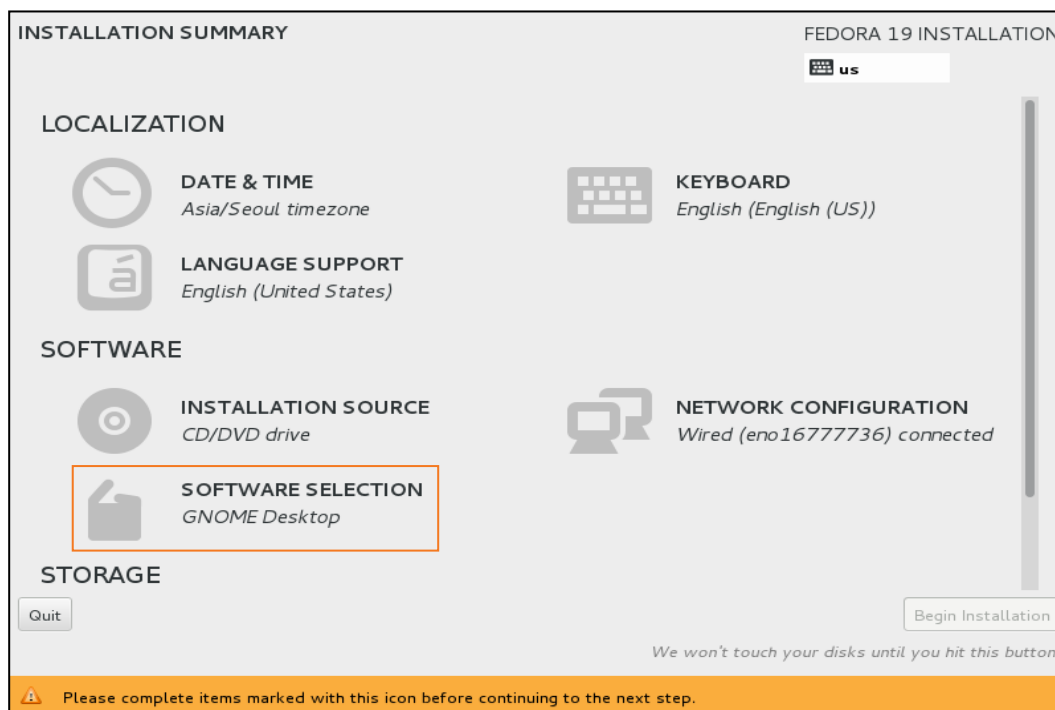
6. Configuration Click and Set IP.



7. IPv4 Settings > Manual > Add > Set IP and Save – Done.



8. Set Server and SOFTWARE SELECTION Click.



9. Set Web Server and PHP in right Add-Ons, and choice Perl for Web, PostgreSQL Database, Administratoin Tools, C Development Tools and Libraries, Development Tools & Done.

SOFTWARE SELECTION

FEDORA 19 INSTALLATION

Done

us

Base Environment

☐ **MATE Desktop**
MATE Desktop is based on GNOME 2 and provides a powerful graphical user interface for users who seek a simple easy to use traditional desktop interface.

☐ **Sugar Desktop Environment**
A software playground for learning about learning.

☐ **Development and Creative Workstation**
Workstation for software, hardware, graphics, or content development.

☒ **Web Server**
Server for serving static and dynamic internet content.

☐ **Infrastructure Server**
Server for operating network infrastructure services.

☐ **Basic Desktop**

Add-Ons for Selected Environment

use with MariaDB (MySQL).

☐ **MongoDB**
Scalable high-performance NoSQL database.

☒ **PHP**
General-purpose web development scripting language.

☒ **Perl for Web**
Basic Perl web application support.

☒ **PostgreSQL Database**
This package group includes packages useful for use with Postgresql.

☐ **Python**
Basic Python web application support.

☐ **Ruby on Rails**
Ruby on Rails web application stack.

☒ **Administration Tools**
This group is a collection of graphical administration tools for the system, such as for managing user accounts and configuring system

SOFTWARE SELECTION

FEDORA 19 INSTALLATION

Done

us

Base Environment

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☒ **Administration Tools**
This group is a collection of graphical administration tools for the system, such as for managing user accounts and configuring system hardware.

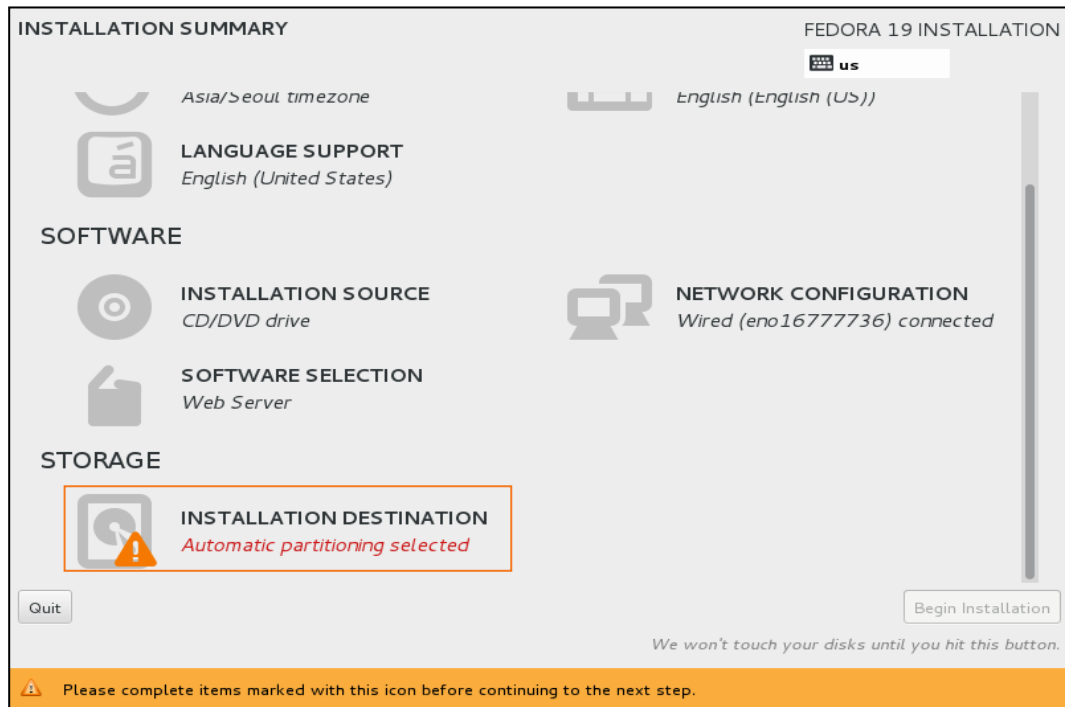
☒ **C Development Tools and Libraries**
These tools include core development tools such as automake, gcc and debuggers.

☐ **Design Suite**
These packages are targeted towards professional designers, like the Fedora Design Team.

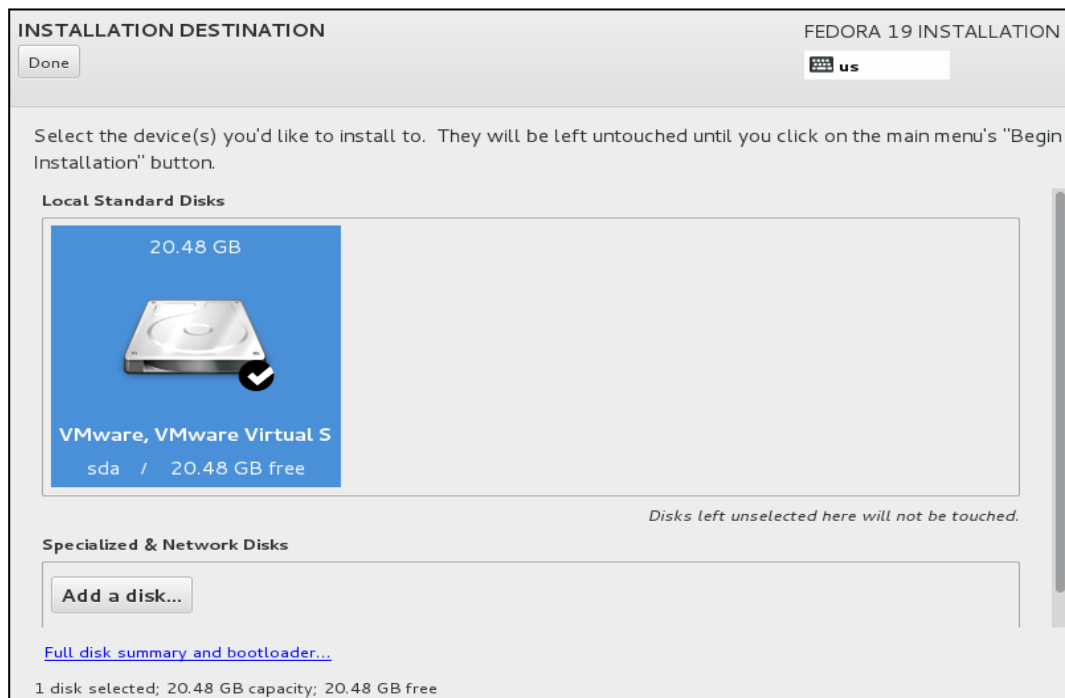
☒ **Development Tools**
These tools include general development tools such as git and cvs.

☐ **Fedora Eclipse**
Integrated Development Environment based on

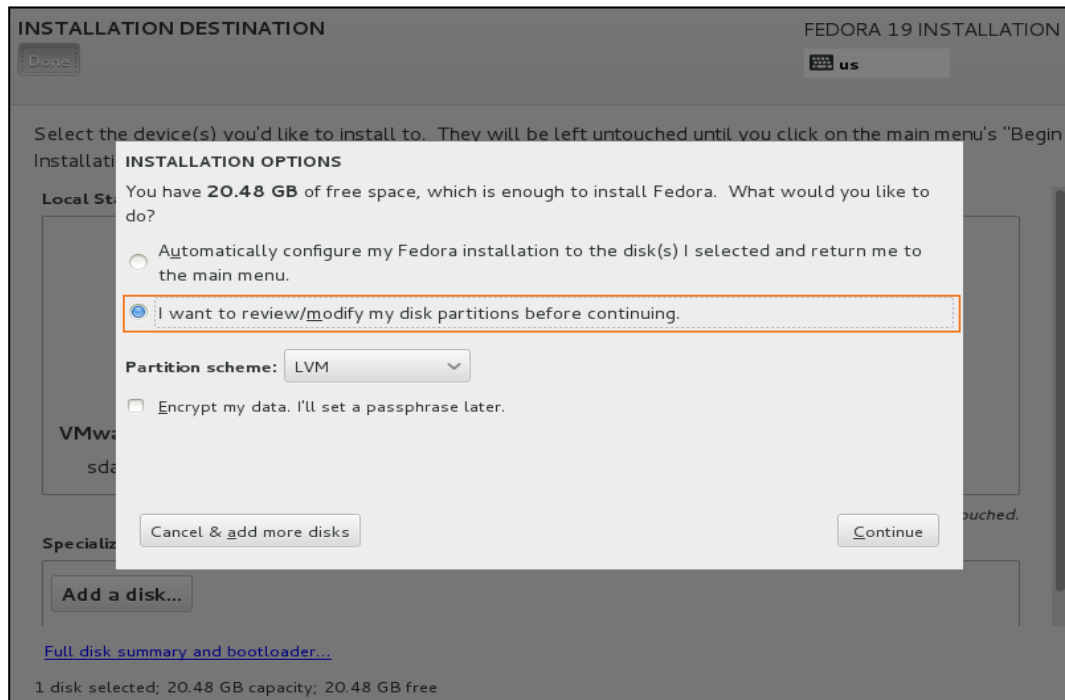
1 0 .Setting Disk& STORAGE Click.



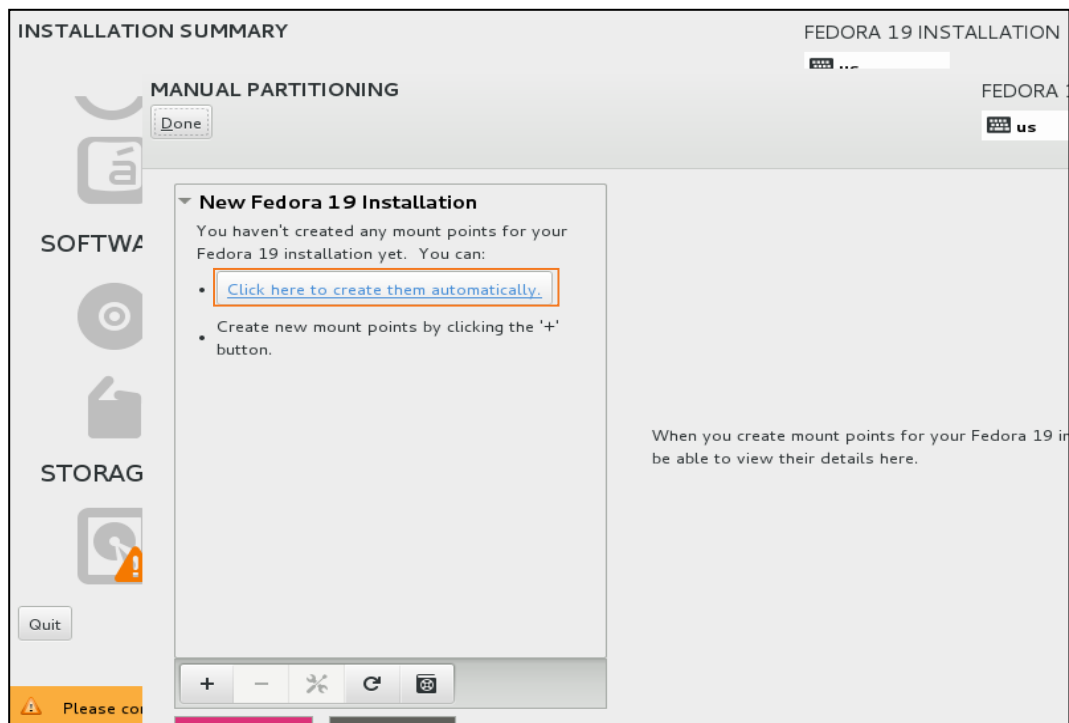
1 1 .Choice Disk for intall.



1 2 .Set partition user and Continue.



1 3 .Set Basic partition and Click.



1 4. Size of swap is twice of physical memory. “ / ” chosen and ‘—’ Click & delete.

MANUAL PARTITIONING FEDORA 19 INSTALLATION

[Done](#)

▼ New Fedora 19 Installation

DATA

swap 2.08 GB
fedora-swap

SYSTEM

/boot 500 MB >
boot

/ 17.89 GB
fedora-root

+ - ✂ ↺ 📄

AVAILABLE SPACE **969.23 kB** TOTAL SPACE **20.48 GB**

[1 storage device selected](#)

sda1

Name:

Mount Point:

Label:

Desired Capacity:

Device Type: Standard Partition ☐ Encrypt

File System: ext4 ☒ Reformat

[Update Settings](#)

Note: The settings you make on this screen will not be applied until you click on the main menu's 'Begin Installation' button.

[Reset All](#)

MANUAL PARTITIONING FEDORA 19 INSTALLATION

[Done](#)

▼ New Fedora 19 Installation

DATA

swap 2.08 GB
fedora-swap

SYSTEM

/boot 500 MB >
boot

+ - ✂ ↺ 📄

AVAILABLE SPACE **17.89 GB** TOTAL SPACE **20.48 GB**

[1 storage device selected](#)

sda1

Name:

Mount Point:

Label:

Desired Capacity:

Device Type: Standard Partition ☐ Encrypt

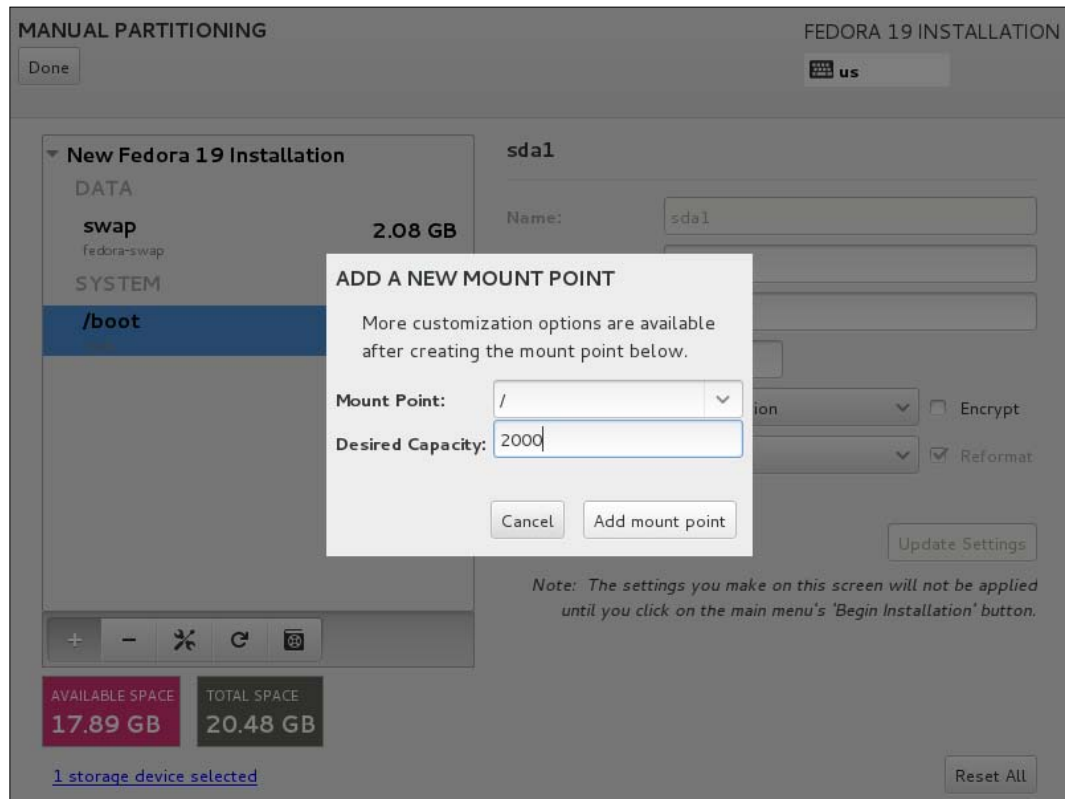
File System: ext4 ☒ Reformat

[Update Settings](#)

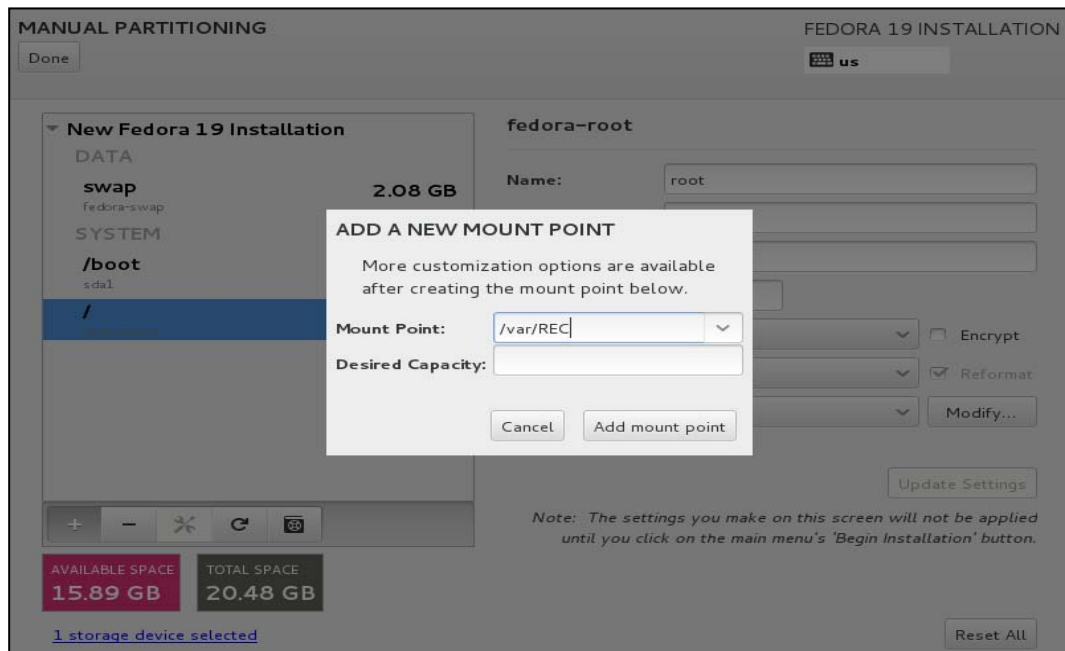
Note: The settings you make on this screen will not be applied until you click on the main menu's 'Begin Installation' button.

[Reset All](#)

1 5. Press **+** and partition **/** is amount of 10% of total space.



1 6. Press **+** partition **/var/REC** as remained total space.



1 7 .Finally set as below structure and Click Done.

MANUAL PARTITIONING FEDORA 19 INSTALLATION

[Done](#)

New Fedora 19 Installation

DATA

- /var/REC** 15.89 GB
- swap** 2.08 GB

SYSTEM

- /boot** 500 MB
- /** 2 GB

fedora-var_REC

Name: var_REC

Mount Point: /var/REC

Label:

Desired Capacity: 15.892 GB

Device Type: LVM ☐ Encrypt

File System: ext4 ☒ Reformat

Volume Group: fedora [Modify...](#)

[Update Settings](#)

Note: The settings you make on this screen will not be applied until you click on the main menu's 'Begin Installation' button.

[Reset All](#)

AVAILABLE SPACE 969.23 kB **TOTAL SPACE** 20.48 GB

[1 storage device selected](#)

1 8 .Click Accept Changes and Accept Change.

MANUAL PARTITIONING FEDORA 19 INSTALLATION

[Done](#)

New Fedora 19 Installation

DATA

- /var/REC** 15.89 GB
- swap** 2.08 GB

SYSTEM

- /boot** 500 MB
- /** 2 GB

fedora-var_REC

Name: var_REC

Mount Point: /var/REC

Label:

Desired Capacity: 15.892 GB

Device Type: LVM ☐ Encrypt

File System: ext4 ☒ Reformat

Volume Group: fedora [Modify...](#)

[Update Settings](#)

Note: The settings you make on this screen will not be applied until you click on the main menu's 'Begin Installation' button.

[Reset All](#)

AVAILABLE SPACE 969.23 kB **TOTAL SPACE** 20.48 GB

[1 storage device selected](#)

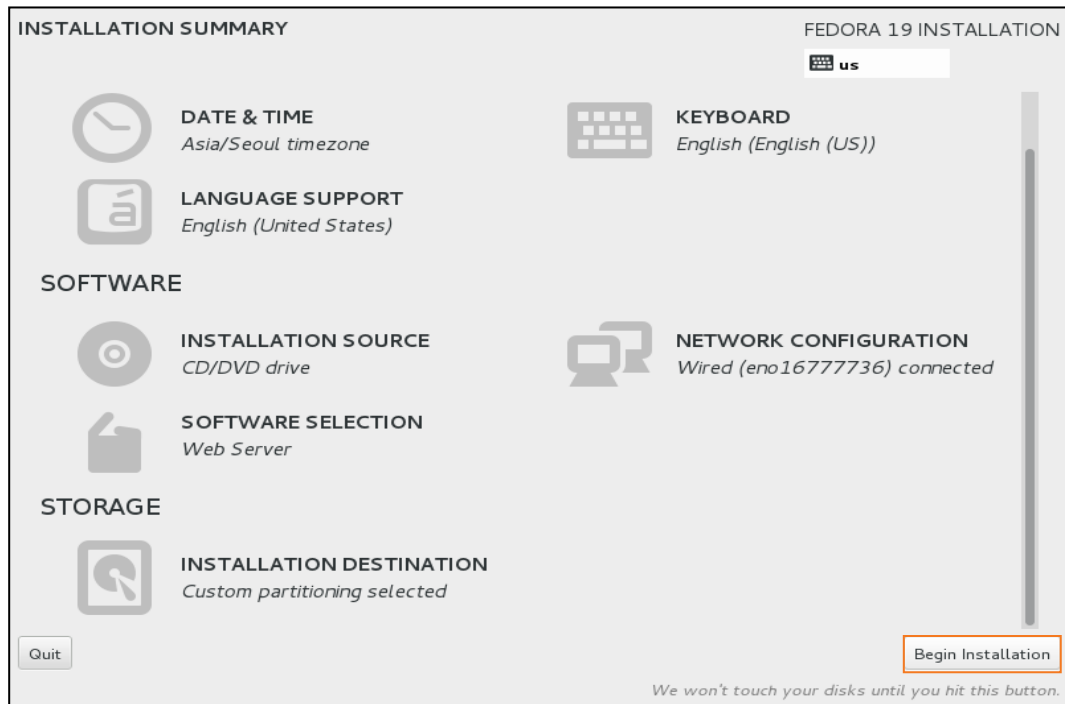
SUMMARY OF CHANGES

Your customizations will result in the following changes taking effect on the disks you've selected:

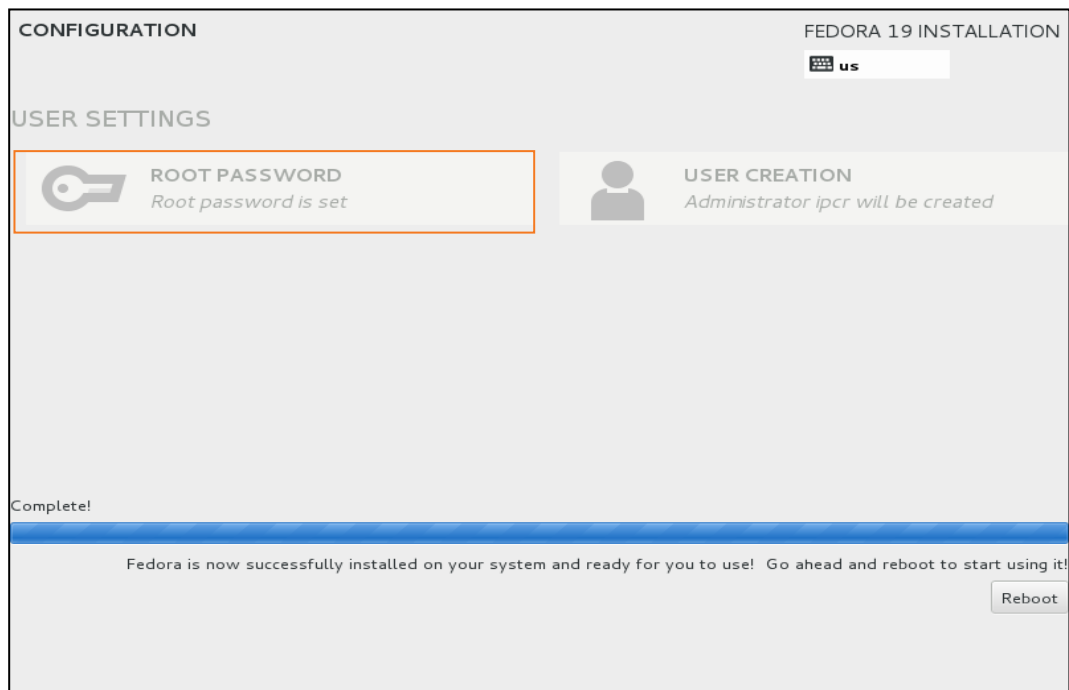
Order	Action	Type	Device Name	Mountpoint
1	Destroy Format	Unknown	sda	
2	Create Format	partition table (MSDOS)	sda	
3	Create Device	partition	sda1	
4	Create Format	ext4	sda1	/boot
5	Create Device	partition	sda2	
6	Create Format	physical volume (LVM)	sda2	
7	Create Device	lvmvg	fedora	
8	Create Device	lvmlv	fedora-var_REC	
9	Create Format	ext4	fedora-var_REC	/var/REC
10	Create Device	lvmlv	fedora-root	
11	Create Format	ext4	fedora-root	/

[Cancel & Return to Custom Partitioning](#) [Accept Changes](#)

1 9 .Click Begin Installation and start install.



2 0 .Set root password.



2 1 .If it's asked once again, click Done.

2 2 .Click USER CREATION.

2 3 .Click User Register and register IPCR user and Done.

CREATE USER FEDORA 19 INSTALLATION

Done

Full name

Username

Tip: Keep your username shorter than 32 characters and do not use spaces.

☒ Make this user administrator

☒ Require a password to use this account

Password

Confirm password

Advanced...

The password you have provided is weak: The password fails the dictionary check - it is based on a dictionary word. You will have to press Done twice to confirm it.

2 4 .Click Reboot in right below after installation.

CONFIGURATION FEDORA 19 INSTALLATION

us

USER SETTINGS

ROOT PASSWORD
Root password is set

USER CREATION
Administrator ipcr will be created

Complete!

Fedora is now successfully installed on your system and ready for you to use! Go ahead and reboot to start using it!

Reboot

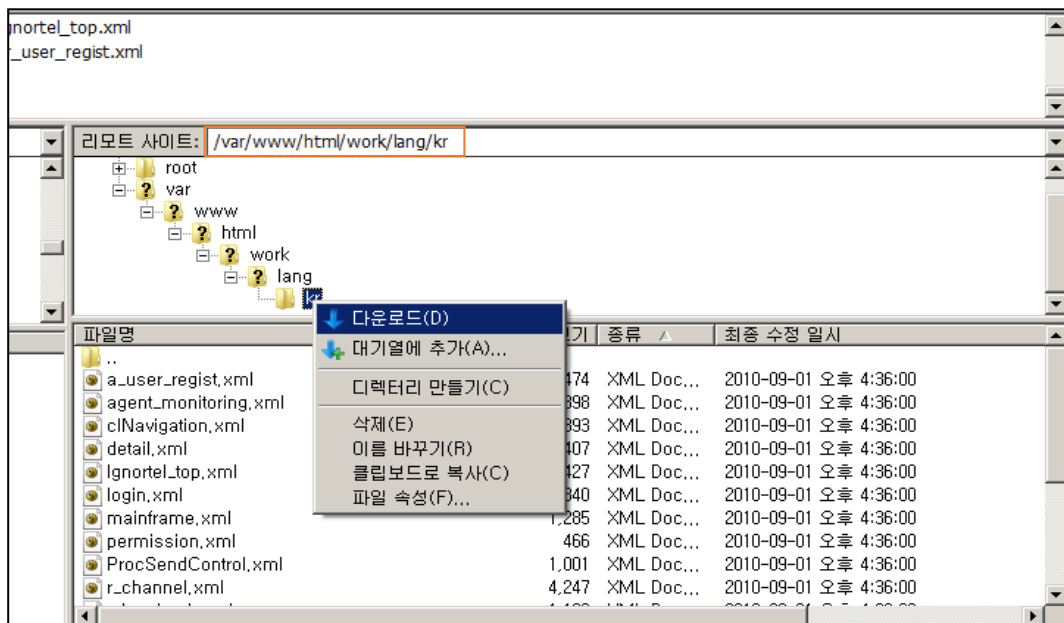
7.2 IPCR Language

7.2.1 Creating a Local Language File

The IPCR application supports two (2) languages, English and a 'Local' language. At login, the user can select the language for text displays. The text displays are contained in a number of XML files in the `/var/www/html/work/lang/kr` directory. The XML files deliver text to the application for a specific screen or sequence of displays. The XML file defines a 'Stitle' (Secondary title) for the Local language and the "Ttitle for English text. The files can be downloaded to a local computer, modified, and saved back to the `/var/www/html/work/lang/kr` directory to support a local language.

To create 'Local' language files'

1. Download all xml files from the `/var/www/html/work/lang/kr` directory to the local PC,



2. Open one of the XML files,

- Example file:

```
<?xml version='1.0' encoding='EUC-KR'?>
<Request>
<data>
  <list>
    <FRC_HeadTitle Stitle='====Setting====' Ttitle='====Setting====' />
    <FRC_BTN_save Stitle='저장' Ttitle='SAVE' />
    <FRC_BTN_modify Stitle='수정' Ttitle='Modify' />
    <FRC_BTN_del Stitle='삭제' Ttitle='Delete' />
  </list>
</data>
</Request>
```



```

        <FRC_BTN_clear Stitle='초기화' Ttitle='Clear' />

        <FRC_ProName Stitle='프로그램 이름' Ttitle='Program Name' />

        <FRC_GroupAuthority Stitle='계정 권한' Ttitle='Group Authority' />

        <FRC_Read Stitle='사용' Ttitle='Read' />

        <FRC_Write Stitle='쓰기' Ttitle='Write' />

    </list>
</data>
</Request>

```

3. Modify the Stitle, using the English text as a guide to the purpose of the text. Assure the text is located between the single quotes, ' ', immediately to the right of "Stitle".

4. Repeat for each XML file.

- **XML Language File List:**

- ProcSendControl.xml
- a_user_regist.xml
- agent_monitoring.xml
- clNavigation.xml
- detail.xml
- lgericsson_top.xml
- login.xml
- mainframe.xml
- permission.xml
- r_channel.xml
- r_logcheck.xml
- r_user_regist.xml
- report.xml
- search_listen.xml
- setting.xml
- system_monitoring.xml
- system_regist.xml
- system_regist_ipcr.xml

7.3 IPCR Database Backup, Create and Restore

7.3.1 IPCR Database Backup

Follow below process for backup IPCR Database

Login to terminal by root Identification and change to Database admin identification

```
# su root
Password:
# su - postgres
```

- # su root – Change to root identification
- Password: – Input the password
- # su - postgres – Change to Database admin identification.

Change to IPCR Database path and Database backup

```
# cd /var/furence/data
# pg_dump -F c recsee > recsee.sql
Password:
```

- # cd /var/furence/data – Change to Database path
- # pg_dump -F c recsee > recsee.sql – Backup Database
- Password: – Input the password

7.3.2 PCR Database Create

Follow below process for create IPCR Database

Login to terminal by root Identification and change to Database admin identification.

```
# su root
Password:
# su - postgres
```

- # su root – Change to root identification
- Password: – Input the password
- # su - postgres – Change to Database admin identification.

Change to IPCR Database path and Database backup

```
# cd /var/furence/data
# createdb recsee
Password:
```

- # cd /var/furence/data – move to Database path
- # createdb recsee – create IPCR Database
- Password: – Input the password

7.3.3 IPCR Database Restore

Follow below process for restore IPCR Database

Login to terminal by root Identification and change to Database admin identification.

```
# su root
Password:
# su - postgres
```

- # su root – Change to root identification
- Password: – Input the password
- # su - postgres – Change to Database admin identification.

Change to IPCR Database path and Database backup

```
# cd /var/furence/data
2# pg_restore -d recsee1 recsee.sql
Password:
```

- # cd /var/furence/data – Move to Database path
- # pg_restore -d recsee1 recsee.sql – Restore IPCR Database
- Password: – Input the password

7.3.4 Another Method, using PgAdminIII application.

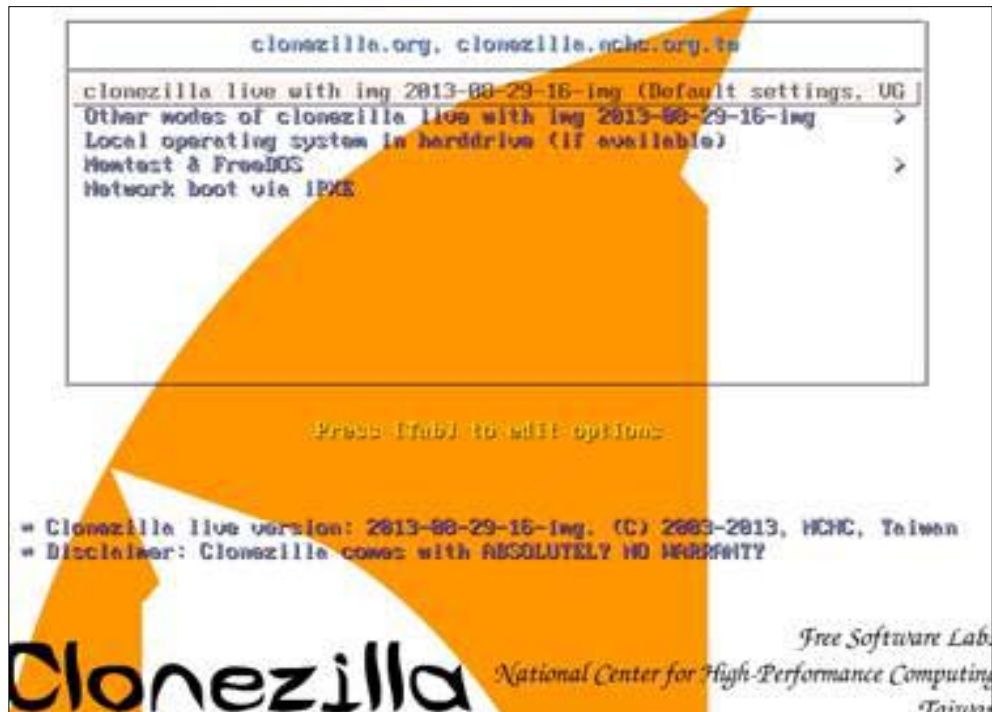
Recommend pgAdminIII. PgAdminIII are provides a GUI environment. You can download pgAdminIII from <http://www.pgadmin.org/>.

1. Connection to IPCRserver after pgAdminIII is installed.
 - **ID** : postgres
 - **Password**: postgers012
2. You can backup and restore easily using backup menu and restore menu in pgAdminIII.

7.4 Easy install with CloneZilla

Clonezilla with Fedora19 & 1.0Bh IPCR version.

1. Record the clonezilla-live-YYYY-MM-DD-19-img.iso Image to DVD. Or install it using VM ware with .iso file.
2. Insert the DVD and boot with it.
3. Upon prompting the following display, select the first menu and press **Enter** Key.



4. Upon prompting the following display after the booting procedures, select '**yes**' for the next step.

```
Shutting Down volume group: fedora
Finished Shutting down the Logical Volume Manager
*****
Activating the partition info in /proc... done!
Getting /dev/sda1 info...
Getting /dev/sda2 info...
*****
The following step is to restore an image to the hard disk/partition(s) on this machine: "/home/part
imag/2013-08-29-16-img" -> "sda sda1 sda2 sda5"
WARNING!!! WARNING!!! WARNING!!!
WARNING. THE EXISTING DATA IN THIS HARDDISK/PARTITION(S) WILL BE OVERWRITTEN! ALL EXISTING DATA WILL
BE LOST:
*****
Machine: VMware Virtual Platform
sda (483GB_VMWare_Virtual_S_No_disk_serial_no)
sda1 (500M_ext4(In_VMWare_Virtual_S)_No_disk_serial_no)
sda2 (449.5G_LVM2_member(In_VMWare_Virtual_S)_No_disk_serial_no)
*****
Are you sure you want to continue? ? (y/n)
```

5. Upon prompting the following display for the confirmation, select **'yes'** for the next step.

```
Are you sure you want to continue? ? (y/n) y
OK, let's do it!!
This program is not started by clonezilla server.
The following step is to restore an image to the hard disk/partition(s) on this machine: "/home/part
imag/2013-08-29-16-img" -> "sda (sda1 sda2 sda5)"
WARNING!!! WARNING!!! WARNING!!!
WARNING! THE EXISTING DATA IN THIS HARDDISK/PARTITION(S) WILL BE OVERWRITTEN! ALL EXISTING DATA WILL
BE LOST:
*****
Machine: VMware Virtual Platform
sda (483GB_VMWare_Virtual_S_No_disk_serial_no)
sda1 (500M_ext4(In_VMWare_Virtual_S)_No_disk_serial_no)
sda2 (449.5G_LVM2_member(In_VMWare_Virtual_S)_No_disk_serial_no)
*****
Let me ask you again. Are you sure you want to continue? ?
[y/n] _
```

6. After the automatic installation of Fedora 19 OS & IPCR S/W to each sections, remove the DVD and select (1) for reboot.

```
Ending /usr/sbin/ocs-sr at 2013-08-30 07:31:00 UTC...
"ocs-live-restore" is finished.
Now you can choose to:
(0) Poweroff
(1) Reboot
(2) Enter command line prompt
(3) Start over (image repository /home/partimag, if mounted, will be umounted)
[2]
```

- **Default password** : root / p@ssw0rd 'a' -> @ , 'o' -> number 0

7. After rebooting, configure the IP address of IPCR Server to eht0 and connect the cable for the operation with LIK.

8. If you want to change IP from DHCP to static, you can change it as below.

- You can go to network-scripts directory, and you can change the configuration in ifcfg-eth0.

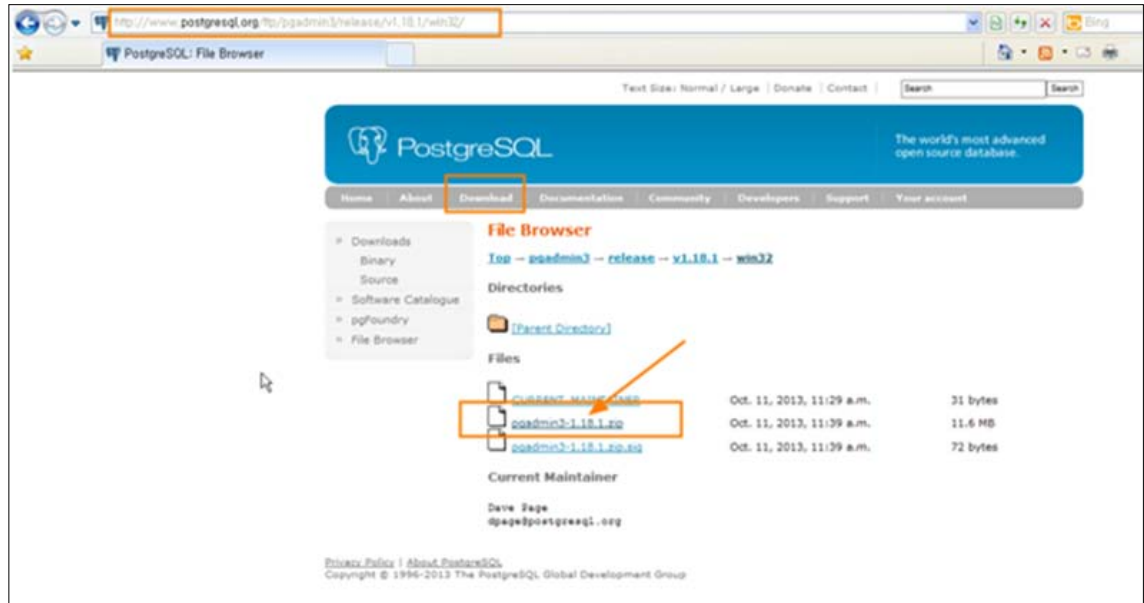
```
[root@localhost network-scripts]#
[root@localhost network-scripts]#
[root@localhost network-scripts]# cd
[root@localhost ~]# cd /etc/sysconfig/network-scripts/
[root@localhost network-scripts]# vi ifcfg-eth0
```

- [root@IPCR] date 1220123013 (MMDDHHmmYY).
- [root@IPCR] hwclock -w

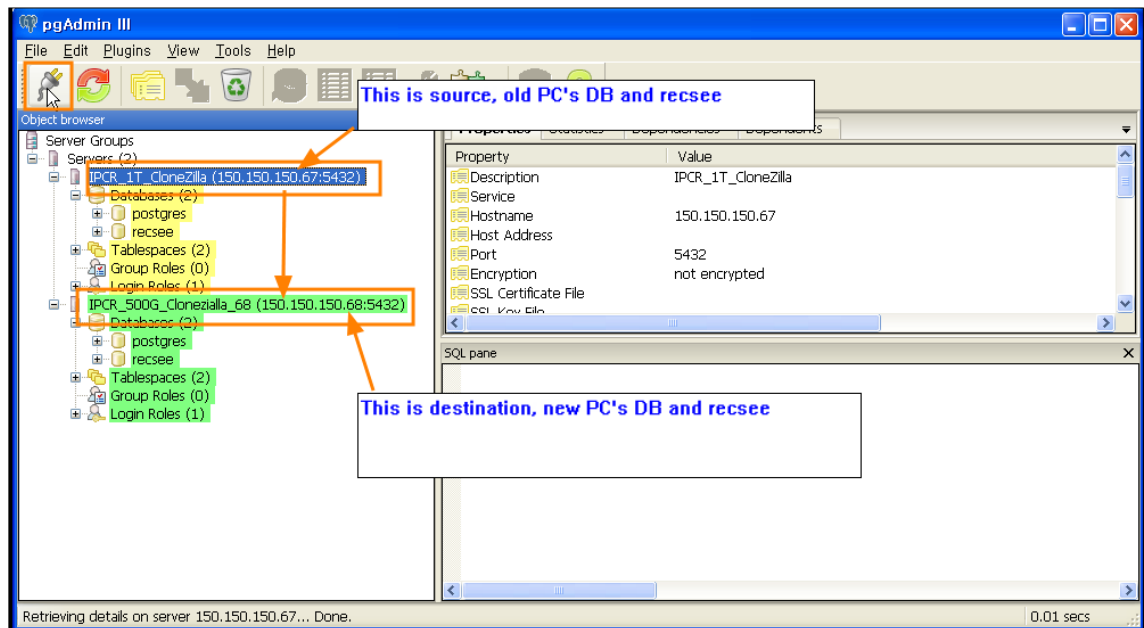
7.5 Easy DB Backup with PGAdmin

DB BackUp using PGAdmin.

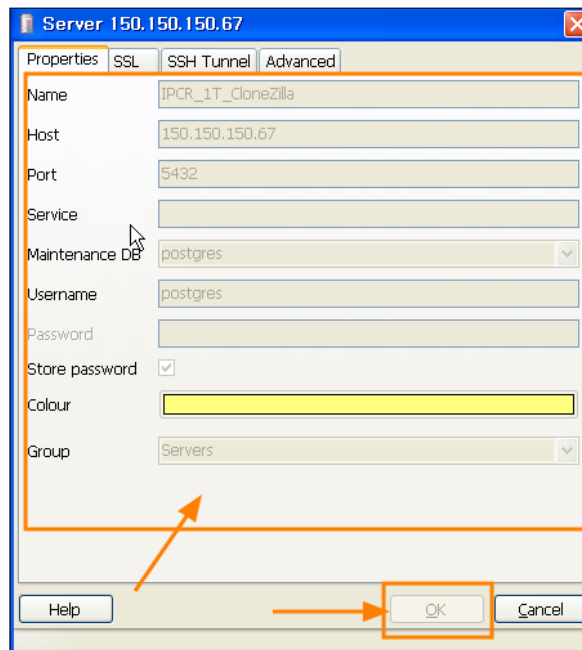
1. Download pgadmin3-1.18.1.zip.
2. You can install it after extract it.



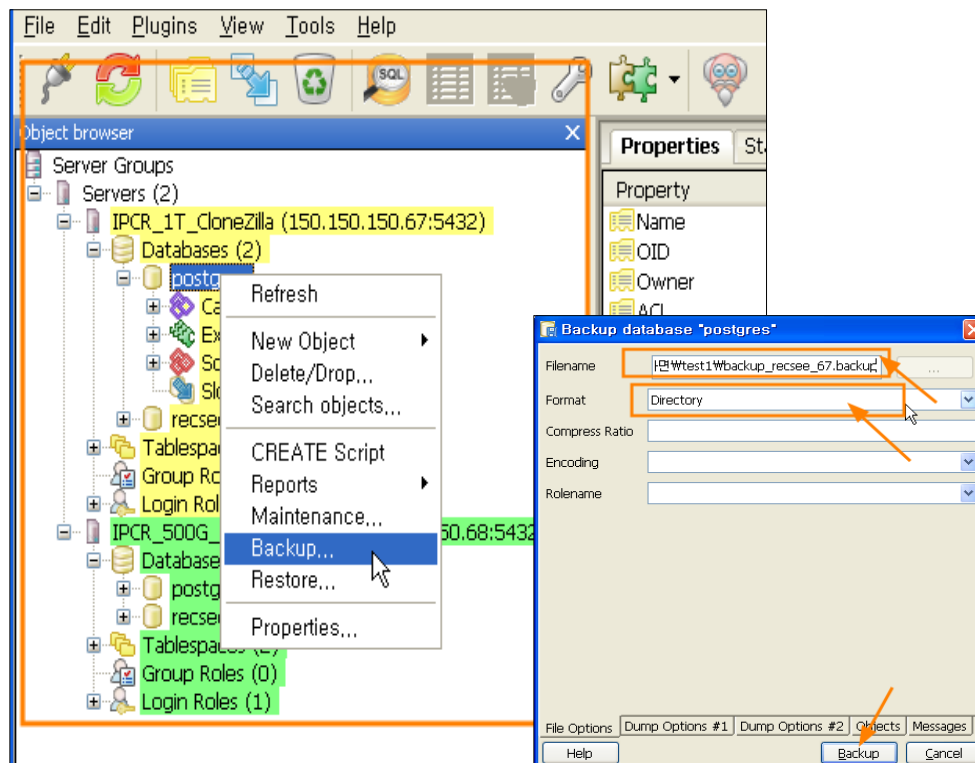
3. Let's connect old and new pc's IPCR DB.

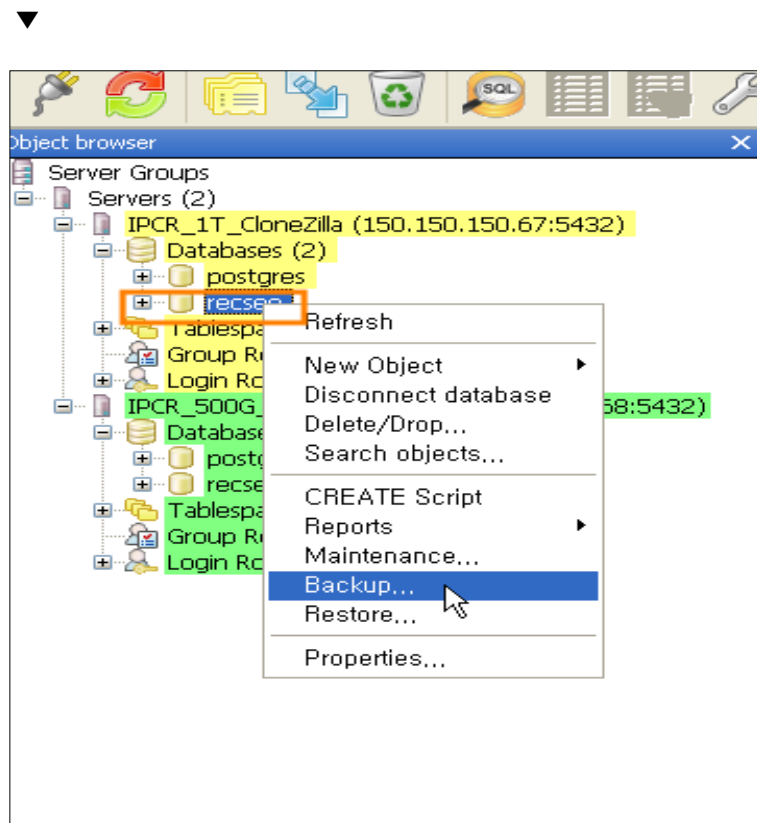
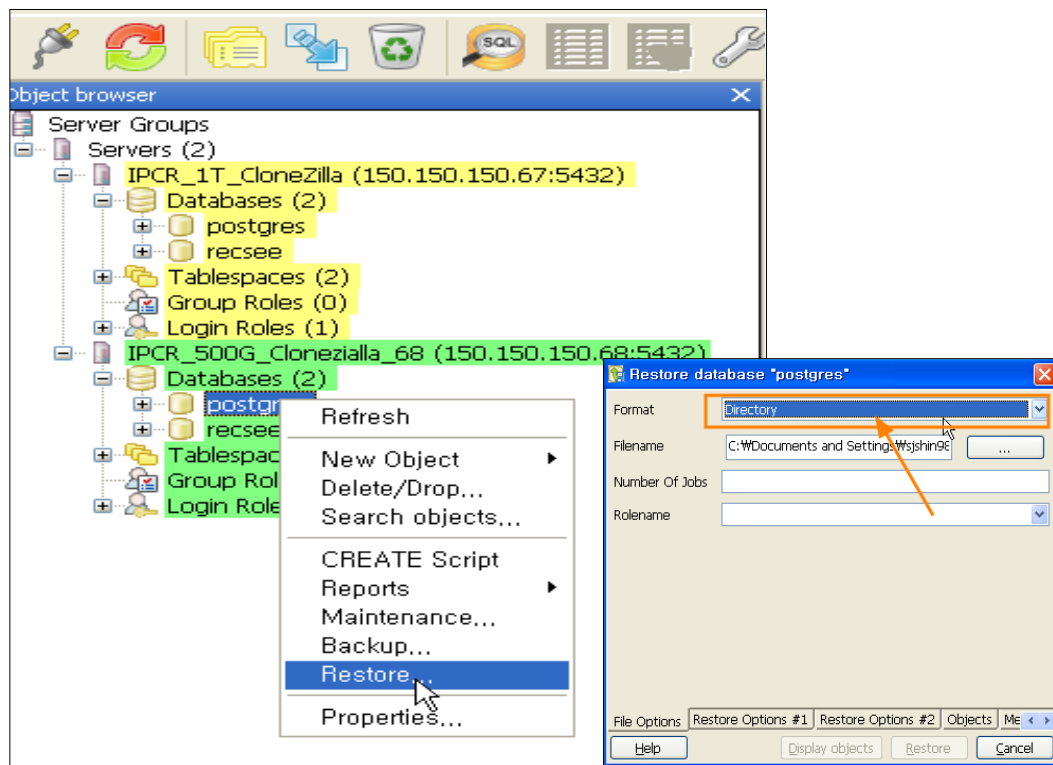


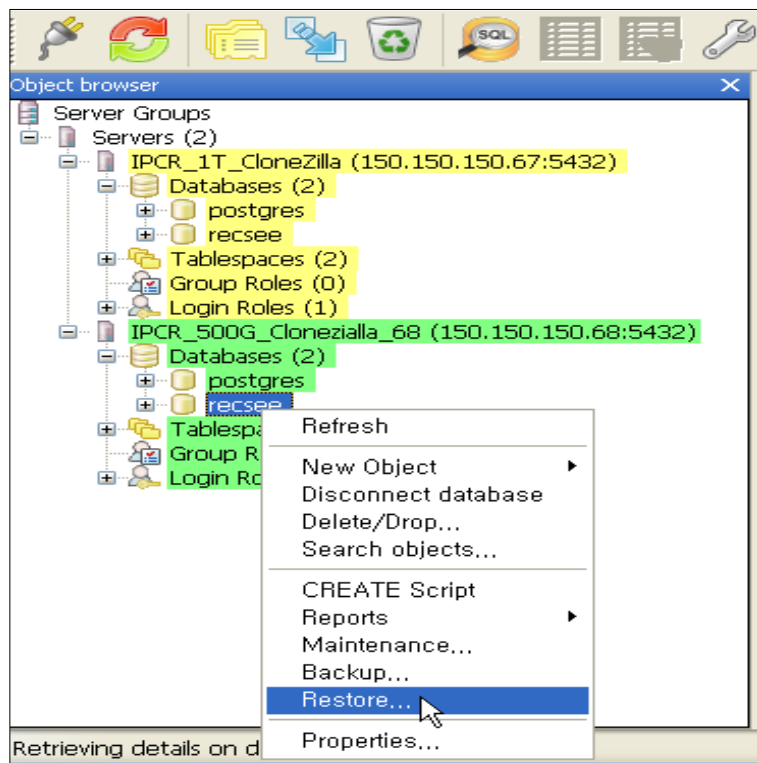
4. You can set it for connect with IPCR server.



5. You can backup it from old IPCR's postgres server to your PC. ** Format should be Directory. Others is default. Filename is your PC's directory.

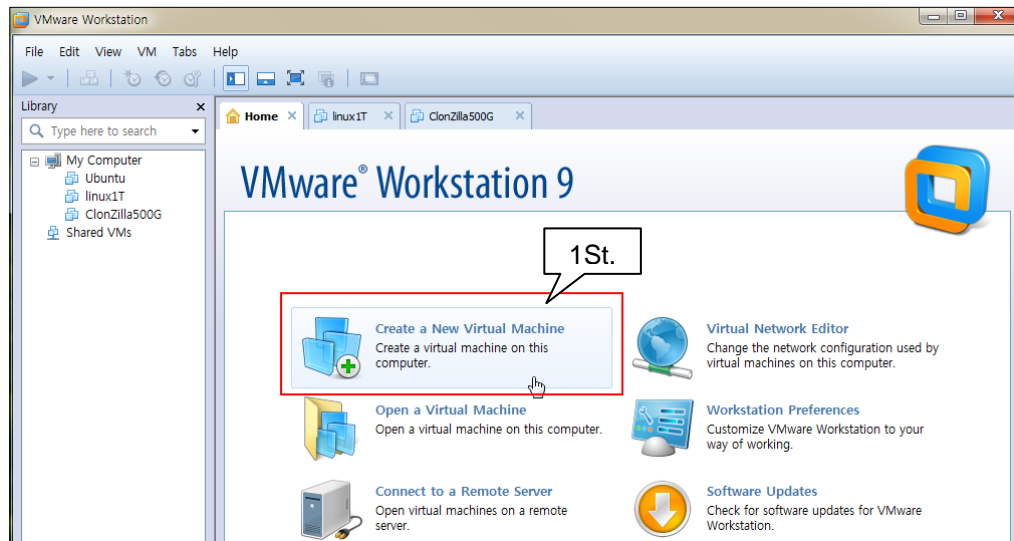




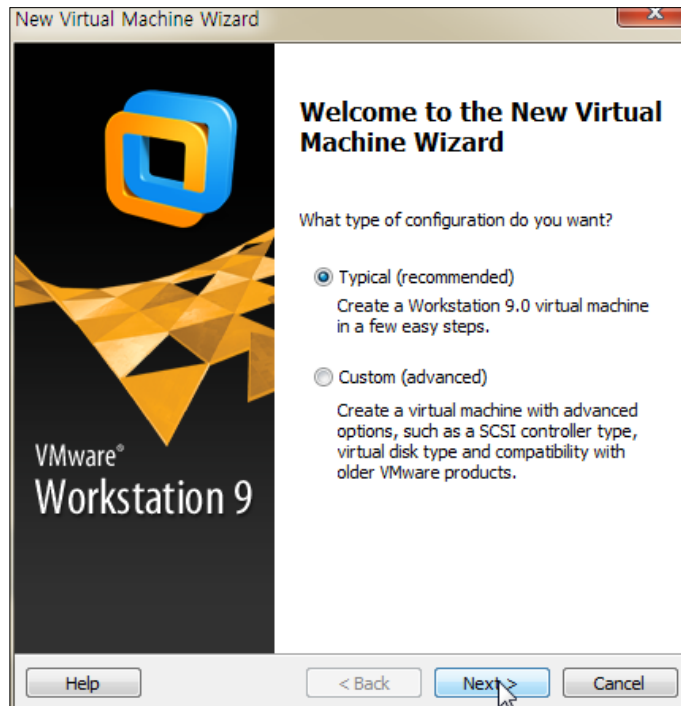


7.6 Setup in VM-ware

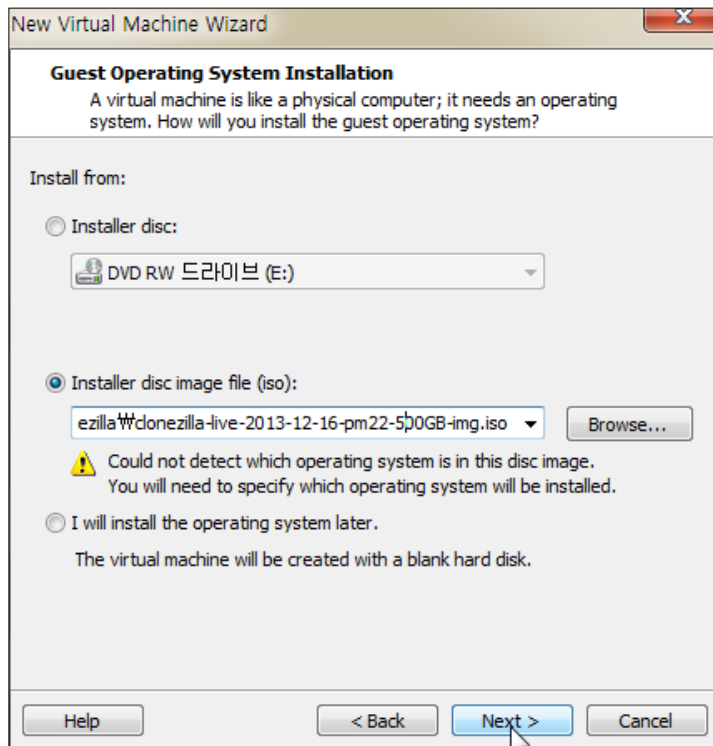
1. Create a New Virtual Machine.



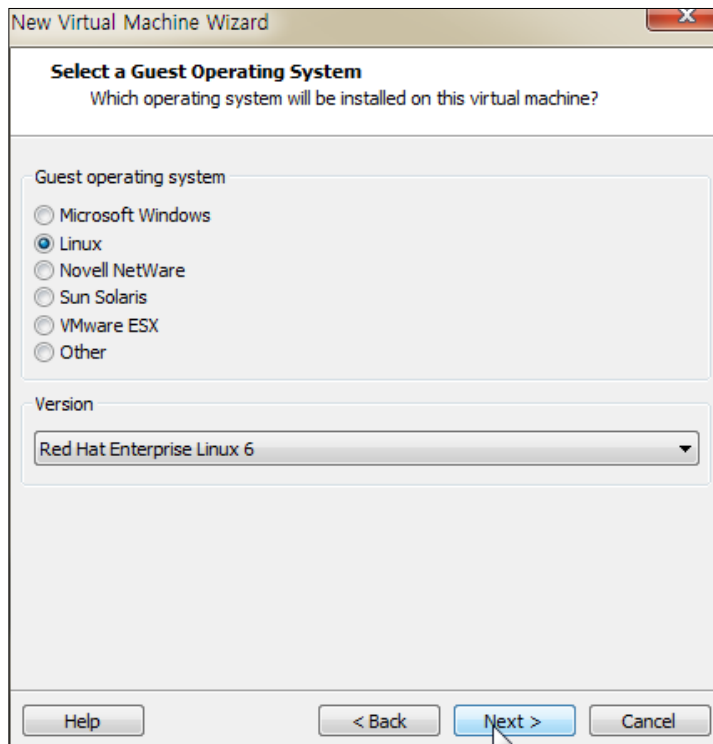
2. Select Typical (recommended).



3. Installer disc image file(iso):



4. Select Guest Operating system.



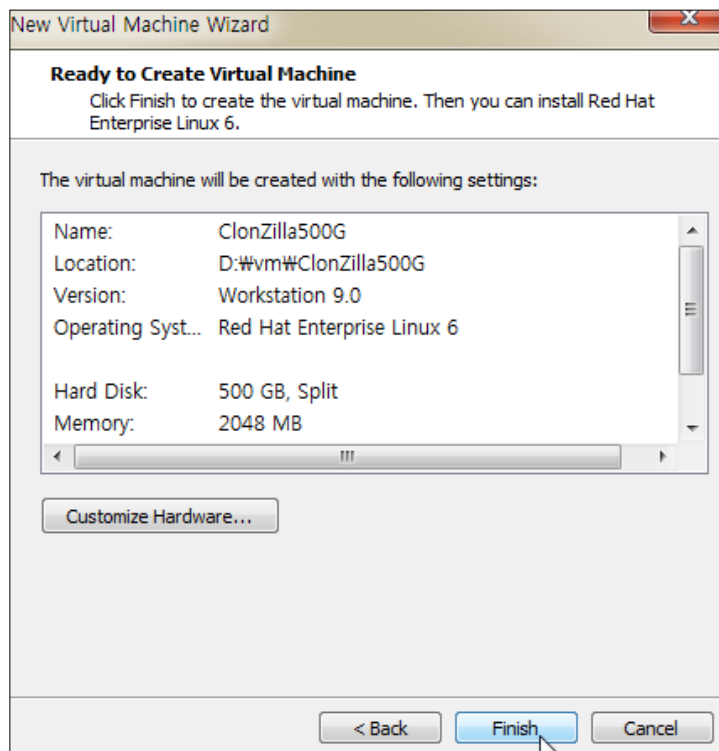
5. Name the Virtual Machine.

The screenshot shows the 'Name the Virtual Machine' step of the 'New Virtual Machine Wizard'. The title bar reads 'New Virtual Machine Wizard'. The main heading is 'Name the Virtual Machine' with the subtitle 'What name would you like to use for this virtual machine?'. There are two input fields: 'Virtual machine name:' with the text 'ClonZilla500G' and 'Location:' with the text 'D:\vm\ClonZilla500G'. A 'Browse...' button is next to the location field. Below the fields, it says 'The default location can be changed at Edit > Preferences.' At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. A mouse cursor is pointing at the 'Next >' button.

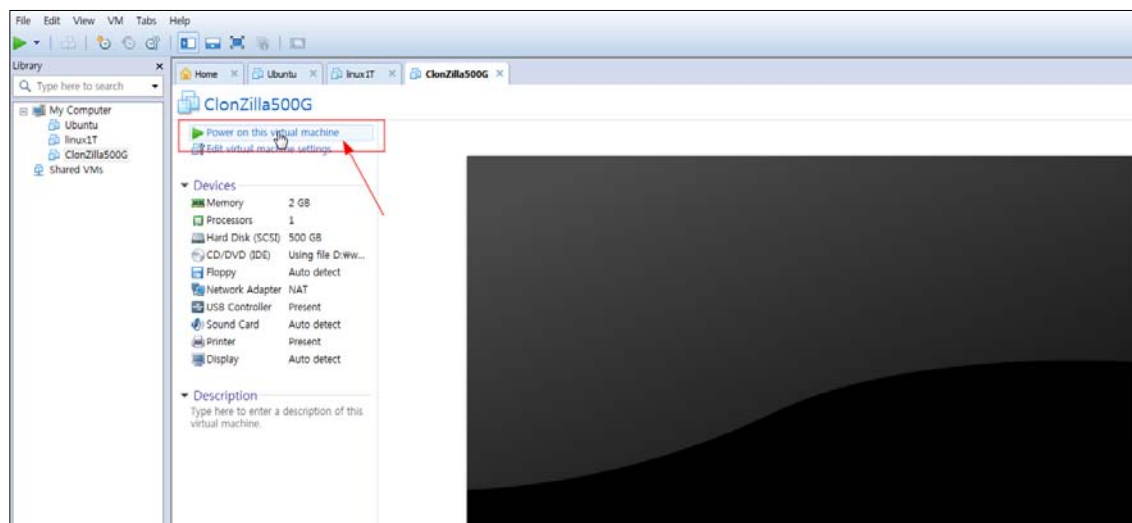
6. Specify Disk Capacity: You should set 500G for 500 Clonezilla. If it's 1T, you should set 1T. Don't worry about the size. VM-ware can use it virtually even though you got a small HDD.

The screenshot shows the 'Specify Disk Capacity' step of the 'New Virtual Machine Wizard'. The title bar reads 'New Virtual Machine Wizard'. The main heading is 'Specify Disk Capacity' with the subtitle 'How large do you want this disk to be?'. A paragraph explains: 'The virtual machine's hard disk is stored as one or more files on the host computer's physical disk. These file(s) start small and become larger as you add applications, files, and data to your virtual machine.' Below this, there is a 'Maximum disk size (GB):' label followed by a spin box set to '500'. A note says 'Recommended size for Red Hat Enterprise Linux 6: 20 GB'. There are two radio buttons: 'Store virtual disk as a single file' (unselected) and 'Split virtual disk into multiple files' (selected). A note below the radio buttons says: 'Splitting the disk makes it easier to move the virtual machine to another computer but may reduce performance with very large disks.' At the bottom, there are four buttons: 'Help', '< Back', 'Next >', and 'Cancel'. A mouse cursor is pointing at the 'Next >' button.

7. Ready to Create Virtual Machine :



8. If you press the Power on, it's started as real installation of real Server.



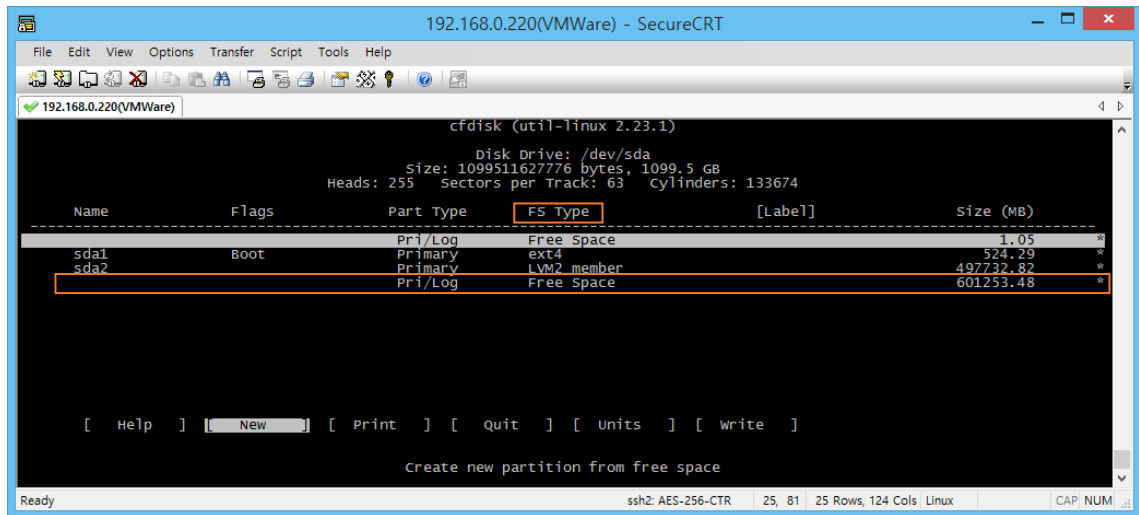
7.1 Installing HDD 1TB or more for IPCR Server

The installation of more than 1TB HDD with 500GB mounting IPCR CD. Putting together the var / REC partitions HDD capacity remaining in the IPCR server installed.

7.1.1 Combine the var / IPCR REC partitions / server capacity remaining.

1. Check the capacity that is not currently allocated.

```
root> cfdisk /dev/sda
```



2. Create a new PV (Physical Volume).

```
root> mkknod /dev/sda3 b 8 3
root> chown root:disk /dev/sda
```

3. Create a new partition from the unallocated capacity.

```
root> fdisk /dev/sda
```

```
192.168.0.220(VMWare) - SecureCRT
File Edit View Options Transfer Script Tools Help
192.168.0.220(VMWare)
[/root]#fdisk /dev/sda
welcome to fdisk (util-linux 2.23.1).

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help): p
Disk /dev/sda: 1099.5 GB, 1099511627776 bytes, 2147483648 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x000485a3

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1 *         2048        1026047       512000    83   Linux
/dev/sda2           1026048       973160447     486067200    8e   Linux LVM

Command (m for help): n
Partition type:
  p   primary (2 primary, 0 extended, 2 free)
  e   extended
Select (default p): p
Partition number (3-4, default 3):
First sector (973160448-2147483647, default 973160448):
Using default value 973160448
Last sector, +sectors or +size[K,M,G] (973160448-2147483647, default 2147483647):
Using default value 2147483647
Partition 3 of type Linux and of size 560 GiB is set

Command (m for help): p
Disk /dev/sda: 1099.5 GB, 1099511627776 bytes, 2147483648 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x000485a3

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1 *         2048        1026047       512000    83   Linux
/dev/sda2           1026048       973160447     486067200    8e   Linux LVM
/dev/sda3           973160448       2147483647     587161600    83   Linux

Command (m for help):
```

4. Type of system partition allocated /dev/sda2 LVM

```
192.168.0.220(VMWare) - SecureCRT
File Edit View Options Transfer Script Tools Help
192.168.0.220(VMWare)
[/root]#fdisk /dev/sda
welcome to fdisk (util-linux 2.23.1).

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help): p
Disk /dev/sda: 1099.5 GB, 1099511627776 bytes, 2147483648 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x000485a3

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1 *         2048        1026047       512000    83   Linux
/dev/sda2           1026048       973160447     486067200    8e   Linux LVM
/dev/sda3           973160448       2147483647     587161600    83   Linux

Command (m for help): t
Partition number (1-3, default 3):
Hex code (type L to list all codes): 8e
Changed type of partition 'Linux' to 'Linux LVM'

Command (m for help): p
Disk /dev/sda: 1099.5 GB, 1099511627776 bytes, 2147483648 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x000485a3

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1 *         2048        1026047       512000    83   Linux
/dev/sda2           1026048       973160447     486067200    8e   Linux LVM
/dev/sda3           973160448       2147483647     587161600    8e   Linux LVM

Command (m for help): w
The partition table has been altered!

Calling ioctl() to re-read partition table.

WARNING: Re-reading the partition table failed with error 16: 장치나 자원에 접근할 수 없습니다.
The kernel still uses the old table. The new table will be used at
the next reboot or after you run partprobe(8) or kpartx(8)
Syncing disks.
[/root]#
```

- Use the fdisk command t -> Hex Code 8e

5. Restart the IPCR server after the fdisk partition settings.

6. Generate PV (Physical Volume).

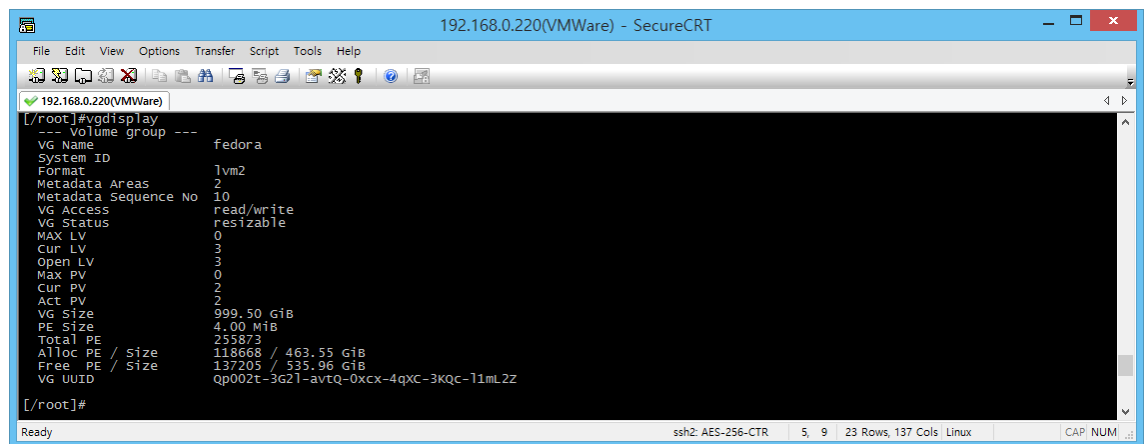
```
root> pvcreate /dev/sda3
```

7. Extend the VG (Volume Group). The Volume Group name of IPCR is fedora.

```
root> vgextend fedora /dev/sda3
```

8. Check the LV (Logical Volume) state.

```
root> lvdisplay
```



```
192.168.0.220(VMWare) - SecureCRT
File Edit View Options Transfer Script Tools Help
192.168.0.220(VMWare)
[/root]#vgdisplay
--- Volume group ---
VG Name                fedora
System ID
Format                 lvm2
Metadata Areas         2
Metadata Sequence No   10
VG Access              read/write
VG Status              resizable
MAX LV                 0
Cur LV                3
Open LV                3
Max PV                 0
Cur PV                2
Act PV                 2
VG Size                999.50 GiB
PE Size                4.00 MiB
Total PE               255873
Alloc PE / Size        118668 / 463.55 GiB
Free PE / Size         137205 / 535.96 GiB
VG UUID                Qp002t-3G2l-avtq-0xcx-4qxc-3Kqc-11mL2Z
[/root]#
Ready ssh2: AES-256-CTR 5, 9 23 Rows, 137 Cols Linux CAP: NUM...
```

9. Increase the LV (Logical Volume).

```
root> lvextend -l +137205 /dev/fedora/var_REC
```

- The Free PE / size values are identified by vgdisplay +137205 value.
- You should be aware of the case when Option settings.

10. Reflecting the file system LV (Logical Volume).

```
root> resize2fs /dev/fedora/var_REC
```


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