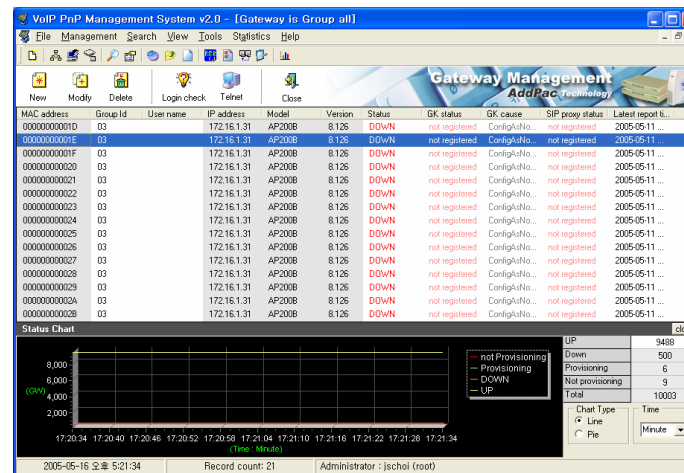




AP-VPMS

VoIP Plug & Play Management System
Next Generation Large Scale VoIP Equipment
Management Solution



AddPac

AddPac Technology

Sales and Marketing

AP-VPMS

VoIP Plug & Play Management System

- **Product Overview**
- **Network Diagram**
- **Hardware Specification**
- **Software Requirement**
- **AP-VPMS GUI (Example)**
- **System Performance Evaluation**
- **Ordering Information**

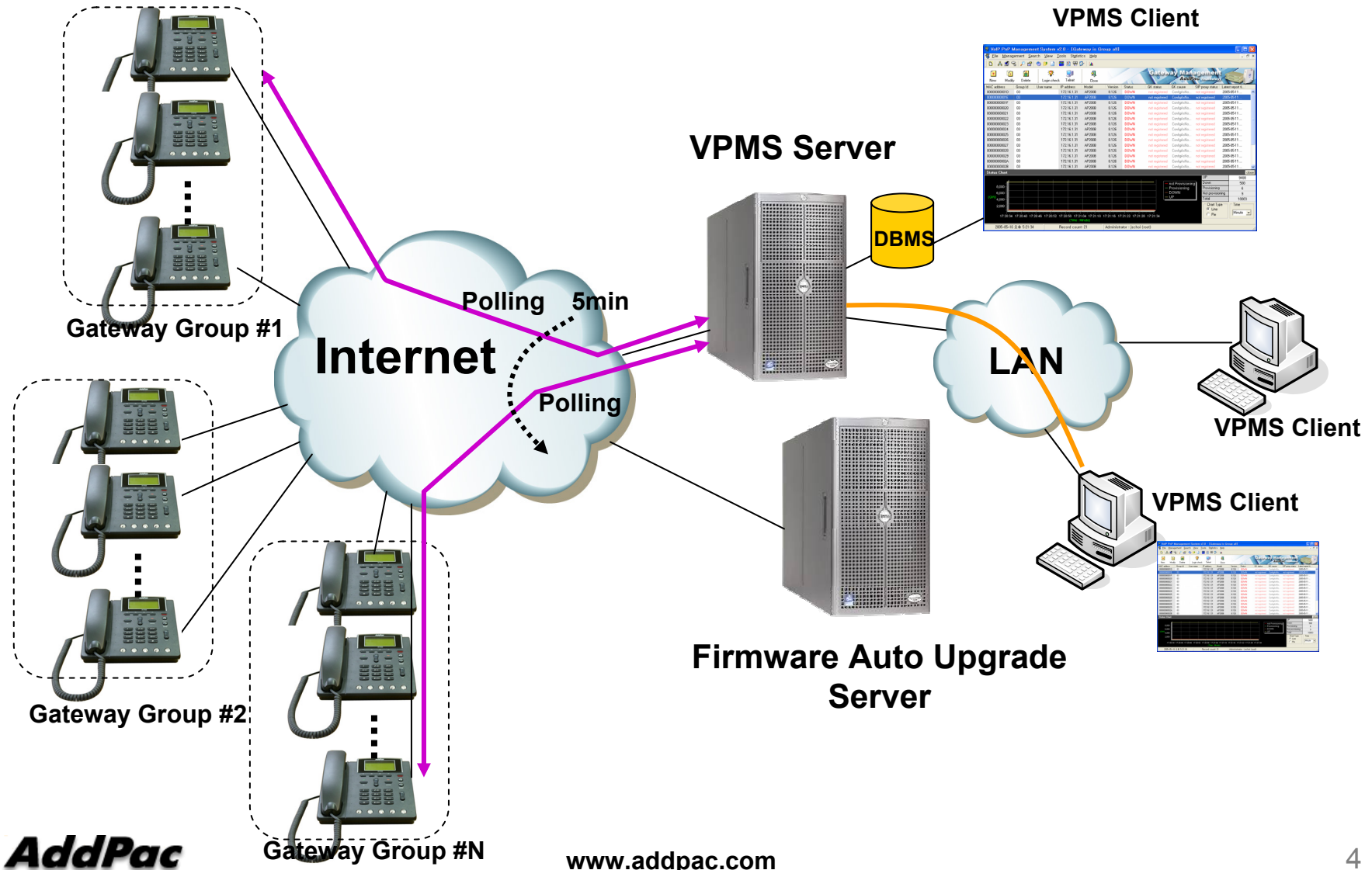
Product Overview

AP-VPMS VoIP Plug & Play Management System

- Powerful Management and User Friendly Features
- Graphical VoIP Gateway Plug & Play Manager
- Stability and Reliability Management System
- CLI Interface for Detailed Control
- VPMS Function List
 - Auto Initial Config and Installation
 - Gateway Status Monitoring & Analysis
 - Auto Firmware Upgrade
 - Gateway Management
(Registration, Modification, Search, Delete, Filtering, etc)
 - Account Management
 - Group Management
 - Event Log View
 - Gateway Status Report

Network Diagram

AP-VPMS VoIP Plug & Play Management System



Product Highlights

AP-VPMS VoIP Plug & Play Management System

VoIP Plug & Play Management

Window 2000 Server Platform
(VPMS Server)

Commercial H/W Platform
(PC, Server Platform)

JAVA & MS-SQL
Server (DBMS)

Server-Client
Architecture

Gateway
Status Report

Gateway Management
(Registration, etc)

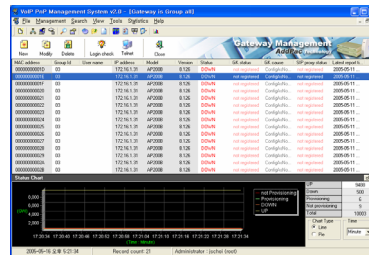
Gateway
Status Monitoring

Gateway
Auto Firmware Upgrade

Gateway Event Log

Account Management

Gateway
Group Management



Hardware Specification

AP-VPMS VoIP Plug & Play Management System

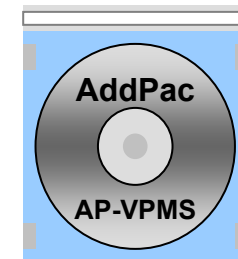
A square logo with a dark blue background and a light blue border. The text "RISC" is positioned above "CPU" in white, sans-serif font.

- **Commercial H/W Platform**
(Dell Server, Desktop PC, etc)
- **AP-VPMS Server H/W Requirement(1,000Ea)**
 - CPU : Intel Pentium 4 1GHz (minimum)
 - MEMORY : 1GByte(minimum)
 - HDD : 40GB
 - OS : Window 2000 Server
- **AP-VPMS Client H/W Requirement**
 - CPU : Intel Pentium Series
 - MEMORY : 256Mbyte, 128Mbyte (minimum)
 - OS : Window XP, Window 2000, Window 9x,etc

Software Requirement

AP-VPMS VoIP Plug & Play Management System

- **DataBase : MS-SQL server 2000 (standard)**
- **Auto-upgrade server :Windows2000 server (IIS, FTP)**
- **VPMS Server :Java JRE 1.4.1(download), VPMS server**
- **VPMS Client :VPMS client**
- **Others : TeraTerm Pro 2.3 (freeware download)**





AP-VPMS GUI Example

Model Management (Example)

AP-VPMS VoIP Plug & Play Management System

The screenshot displays the 'VoIP PnP Management System v2.0 - [Group Summary]' window. The main interface includes a menu bar (File, Management, Search, View, Tools, Statistics, Help) and a toolbar. The main content area is divided into several sections:

- Gateway Model Management Dialog:** A modal window with a list of gateway models (AP1100_S404, AP200B, AP200C) and input fields for 'Model name', 'Slot count', and 'Slot / Port count'. It features 'New', 'Delete', 'Ok', and 'Close' buttons.
- Group Summary Table:** A table with columns: No, Group Id, Group name, GW UP. It lists five groups: Sungnam (11), Seoul (6694), Kangnam (0), Seocho (1782), and kwanak (1001).
- Statistics Table:** A table with columns: SIP Register, SIP not Register, Group all. It shows counts for each group, with 'SIP not Register' values in red.
- Search and Filter Section:** Includes a 'Search Define' list (MAC address), a 'Select management' dropdown (Gateway), and a search input field.
- Status Bar:** Shows the date and time (2005-05-17 오후 1:46:11), record count (5), and administrator (jschoi (root)).

Equipment Filter Search (Example)

AP-VPMS VoIP Plug & Play Management System

The screenshot displays the 'VoIP PnP Management System v2.0 - [Group Summary]' window. The main table lists five groups with their respective statistics:

| No | Group Id | Group name | GW UP | GW Down | GW Provisioning | GW Not provision | GK Register | GK not Register | SIP Register | SIP not Register | Group all |
|----|----------|------------|-------|---------|-----------------|------------------|-------------|-----------------|--------------|------------------|-----------|
| 1 | 01 | Sungnam | 11 | 3 | 0 | 2 | 1 | 15 | 0 | 16 | 16 |
| 2 | 02 | Seoul | 6694 | 474 | 0 | 0 | 6688 | 480 | 0 | 7168 | 7168 |
| 3 | 03 | Kangnam | 0 | 21 | 0 | 0 | 0 | 21 | 0 | 21 | 21 |
| 4 | 04 | Seocho | 1782 | 2 | 6 | 7 | 1797 | 0 | 0 | 1797 | 1797 |
| 5 | 05 | kwanak | 1001 | 0 | 0 | 0 | 1001 | 0 | 0 | 1001 | 1001 |

Below the table, the 'Select management' dropdown is set to 'Gateway'. The 'Search Define' section includes five filter rows and a 'Delete' button. The 'Sort Type' section has 'Ascending' selected. A 'Search' button is located to the right of the 'Group Id' dropdown.

The 'Status Chart' section shows a line graph with the following data:

| Category | Count |
|------------------|-------|
| UP | 9488 |
| Down | 500 |
| Provisioning | 6 |
| Not provisioning | 9 |
| Total | 10003 |

The chart also includes a legend for 'not Provisioning', 'Provisioning', 'DOWN', and 'UP'. The 'Chart Type' is set to 'Line' and the 'Time' interval is 'Minute'. The status bar at the bottom shows the date '2005-05-17 오전 10:14:35', 'Record count: 5', and 'Administrator : jschoi (root)'.

Firmware Upgrade (Example)

AP-VPMS VoIP Plug & Play Management System

The screenshot shows the 'Upgrade Information' window of the VoIP PnP Management System v2.0. The window title is 'VoIP PnP Management System v2.0 - [Upgrade Information]'. The menu bar includes 'File', 'Management', 'Search', 'View', 'Tools', 'Statistics', and 'Help'. The main content area features a table with the following data:

| No | Group code | Type | Old version | New version | Operator ID | Upgrade time | Comment |
|----|------------|------|-------------|-------------|-------------|-----------------------|------------|
| 1 | kor_02 | BIN | 6.12 | 6.12 | root | 2003-06-09 오후 4:41:56 | FTP upload |
| 2 | kor_02 | INF | 20030609 | 20030609 | root | 2003-06-09 오후 4:36:23 | test |
| 3 | kor_02 | INF | 20030609 | 20030609 | root | 2003-06-09 오후 4:35:27 | z |
| 4 | kor_02 | BIN | 6.12 | 6.12 | root | 2003-06-09 오후 4:34:48 | FTP upload |
| 5 | kor_02 | BIN | 6.12 | 6.12 | root | 2003-06-09 오후 4:31:48 | FTP upload |
| 6 | kor_02 | INF | | 20030609 | root | 2003-06-09 오후 4:29:13 | dir test. |
| 7 | kor_02 | BIN | | 6.12 | root | 2003-06-09 오후 4:28:01 | FTP upload |

Below the table is a 'Status Chart' section. The chart displays a line graph with the following legend:

- not Provisioning (red line)
- Provisioning (green line)
- DOWN (orange line)
- UP (yellow line)

The chart shows a steady state with approximately 9488 UP devices, 500 Down devices, 6 Provisioning devices, and 9 Not provisioning devices. The total number of devices is 10003. The chart type is set to 'Line' and the time interval is 'Minute'.

Event Log (Example)

AP-VPMS VoIP Plug & Play Management System

| Date_Time | IP address | Category | Event |
|-----------------------|---------------|------------|------------------|
| 2005-05-12 오후 8:41:00 | 172.16.1.31 | Gatekeeper | Gateway REQUEST |
| 2005-05-12 오후 8:41:00 | 172.16.1.31 | Gateway | Gateway RESPONSE |
| 2005-05-12 오후 8:40:00 | 172.16.1.31 | Gateway | |
| 2005-05-12 오후 8:40:00 | 172.16.1.31 | Gateway | |
| 2005-05-12 오후 8:40:00 | 172.16.1.31 | Gateway | |
| 2005-05-12 오후 8:40:00 | 172.16.1.31 | Gateway | |
| 2005-05-12 오후 8:40:00 | 172.16.1.31 | Gateway | |
| 2005-05-12 오후 8:40:00 | 172.16.19.102 | Gateway | |
| 2005-05-12 오후 8:40:00 | 172.16.1.31 | Gateway | |
| 2005-05-12 오후 8:40:00 | 172.16.1.31 | Gateway | |
| 2005-05-12 오후 8:40:00 | 172.16.1.31 | Gateway | |
| 2005-05-12 오후 8:40:00 | 172.16.1.31 | Gateway | |

| Category | Count |
|------------------|-------|
| UP | 9488 |
| Down | 500 |
| Provisioning | 6 |
| Not provisioning | 9 |
| Total | 10003 |

Chart Type: Line Pie
Time: Minute

2005-05-17 오후 2:54:07 Record count: 0 Administrator : administrator (root)

Report Preview (Example)

AP-VPMS VoIP Plug & Play Management System

Print Preview

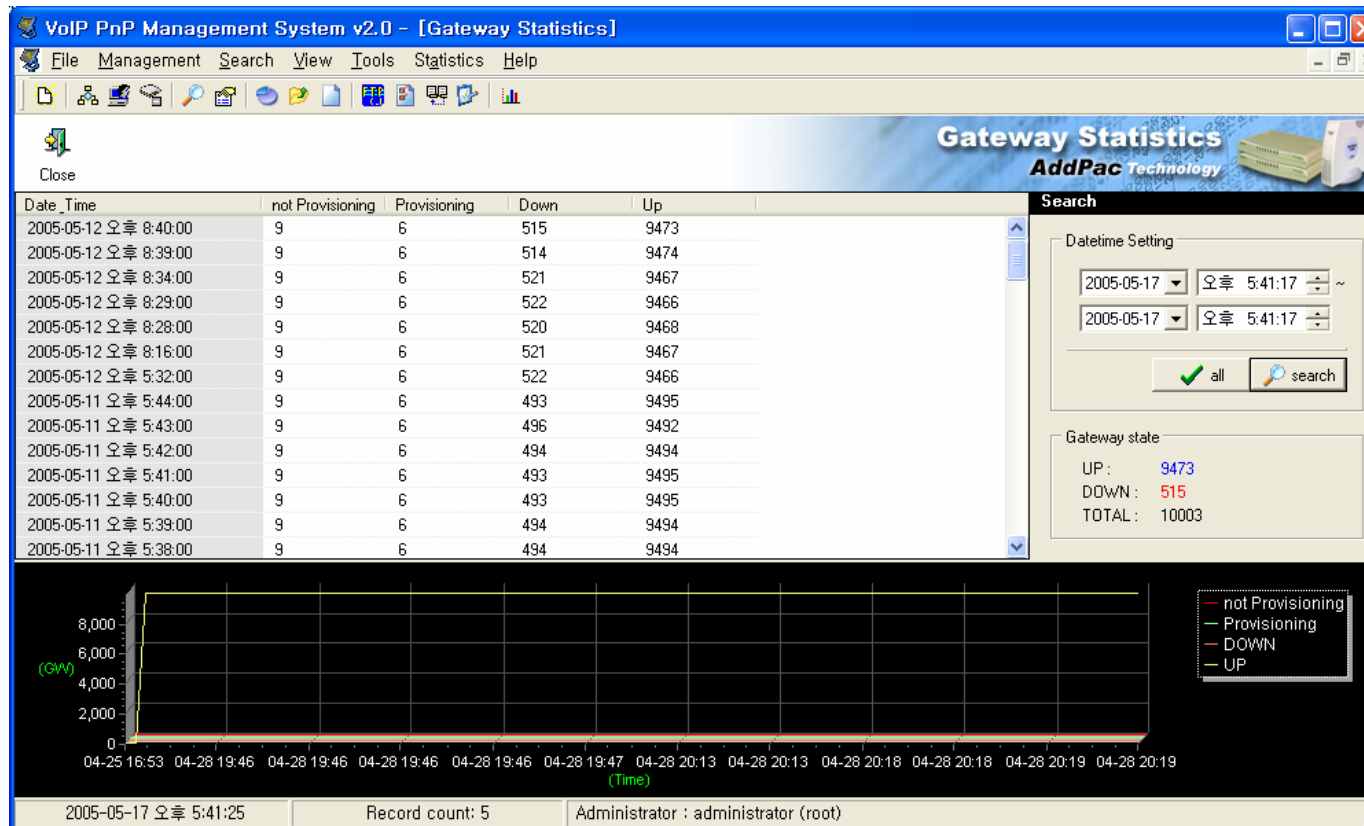
Upgrade Information Report **AddPac**

| Area code | Type | Old version | New version | Operator ID | Upgrade time | comment |
|-----------|------|-------------------|---------------------|-------------|------------------------|---------------------|
| 02 | BN | ap1100rom.bin | ap1100rom.bin | root | 2003-04-01 오전 10:12:47 | FTPupload |
| 02 | BN | 03 20 2003 2:03PM | ap1100rom.bin | root | 2003-04-01 오전 10:06:37 | FTPupload |
| 02 | BN | 03 20 2003 2:00PM | 03 20 2003 2:03PM | daw ndew | 2003-03-20 오후 2:03:26 | bin upgrade |
| area_id | part | ver_1 | ver_2 | operator_id | 2003-03-20 오후 2:03:26 | comment |
| 02 | INF | | 03 20 2003 1:12PM | root | 2003-03-20 오후 2:03:26 | rule 수정 |
| 02 | INF | | 03 20 2003 2:00PM | daw ndew | 2003-03-20 오후 2:03:26 | file upload test |
| 02 | INF | 03 20 2003 2:03PM | 03 27 2003 3:04PM | root | 2003-03-20 오후 2:03:26 | |
| 02 | BN | | ap1100rom.bin | root | 2003-03-20 오후 2:03:26 | |
| 02 | BN | ap1100rom.bin | ap3120romV6_071.bin | root | 2003-03-20 오후 2:03:26 | |
| 02 | INF | 03 27 2003 3:04PM | 03 27 2003 4:16PM | root | 2003-03-20 오후 2:03:26 | test |
| 02 | INF | 03 27 2003 4:16PM | 03 27 2003 5:53PM | root | 2003-03-20 오후 2:03:26 | |
| 02 | INF | 03 27 2003 5:53PM | 03 27 2003 5:54PM | root | 2003-03-20 오후 2:03:26 | Area code test 일니 |
| 02-01 | INF | | 03 28 2003 4:52PM | root | 2003-03-20 오후 2:03:26 | |
| 02-01 | INF | 03 28 2003 4:52PM | 03 28 2003 4:52PM | root | 2003-03-20 오후 2:03:26 | |
| 02-01 | INF | 03 28 2003 4:52PM | 03 28 2003 4:53PM | root | 2003-03-20 오후 2:03:26 | |
| 02-01 | BN | | ap1100rom.bin | root | 2003-03-20 오후 2:03:26 | |
| 02-01 | BN | ap1100rom.bin | ap1100rom.bin | root | 2003-03-20 오후 2:03:26 | |
| 02-01 | BN | ap1100rom.bin | ap1100rom.bin | root | 2003-03-20 오후 2:03:26 | |
| 02 | INF | | 03 20 2003 2:00PM | daw ndew | 2003-03-20 오후 2:00:10 | file upload test |
| 02 | INF | | 03 20 2003 1:12PM | root | 2003-03-20 오후 1:12:29 | rule 수정 |
| 02-01 | INF | 03 28 2003 4:53PM | 03 28 2003 6:02PM | root | | BMS client autoscri |
| 02-01 | INF | 03 28 2003 6:02PM | 03 28 2003 6:04PM | root | | |
| 02-01 | INF | 03 28 2003 6:04PM | 03 28 2003 6:08PM | root | | |
| 02-01 | INF | 03 28 2003 6:08PM | 03 28 2003 6:08PM | root | | |
| 02-01 | INF | 03 28 2003 6:08PM | 03 28 2003 6:09PM | root | | |
| 02-01 | INF | 03 28 2003 6:09PM | 03 28 2003 6:09PM | root | | BMS client test.. |
| 02 | INF | 03 28 2003 7:07PM | 03 28 2003 7:09PM | root | | upgrade 2 |
| 02-01 | BN | ap2520rom.bin | ap3120romV6_071 bin | root | | FTPupload |
| 02 | INF | 03 27 2003 5:54PM | 03 28 2003 7:07PM | root | | upgrade 1 |
| 02 | INF | 03 28 2003 7:09PM | 03 28 2003 7:13PM | root | | |

Page 1 of 1

Gateway Statistics (Example)

AP-VPMS VoIP Plug & Play Management System



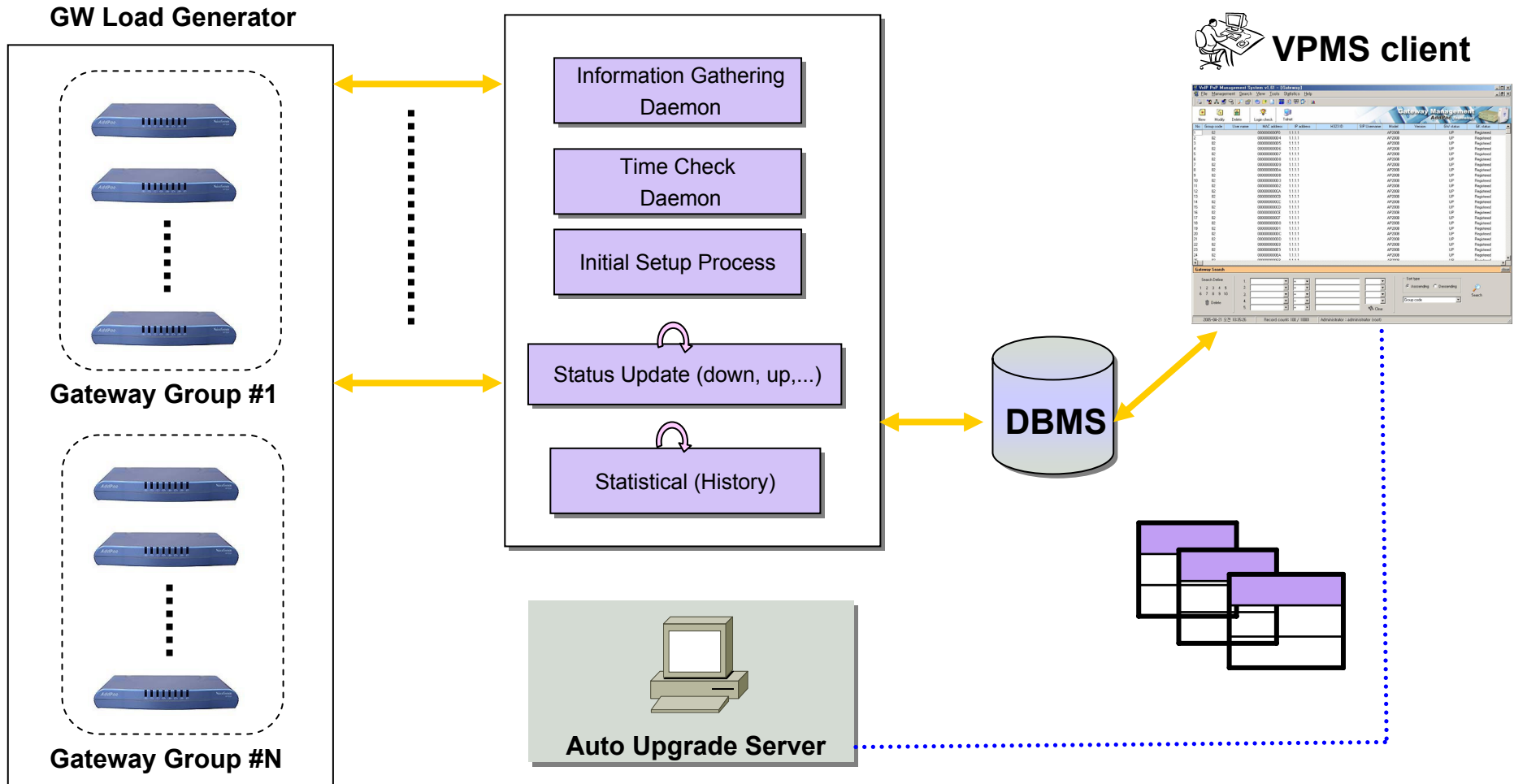


AP-VPMS Performance Analysis

System Performance Simulation Env.

AP-VPMS VoIP Plug & Play Management System

VPMS Server



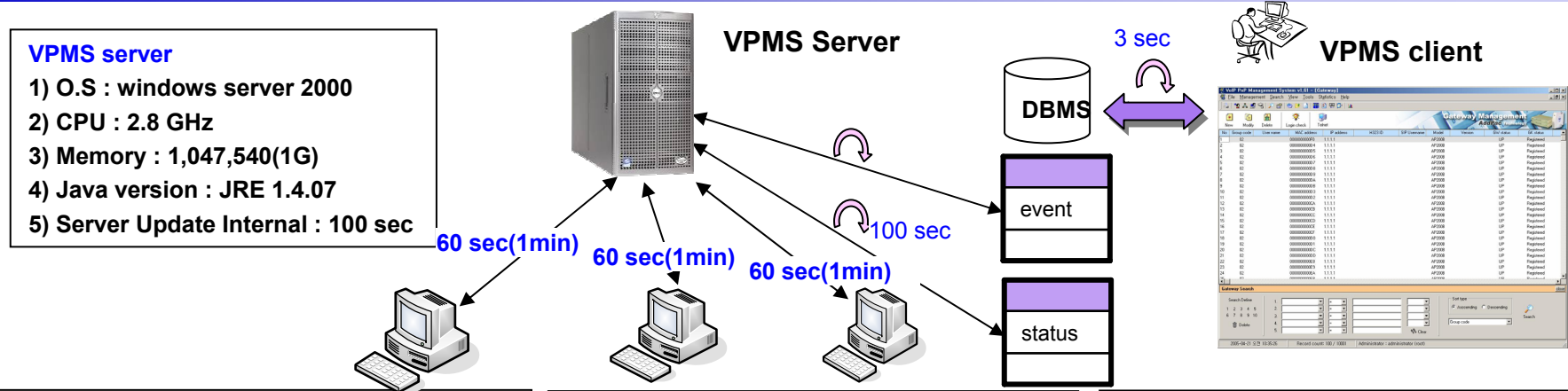
Simulation Parameters

AP-VPMS VoIP Plug & Play Management System

| Item | | Item | Contents | | Comments |
|-------------------------------|--------------------------|---|----------------------------------|---|---------------------|
| GW Simulator | Number of Gateway | machine 1 | 1000 | Total 2000 GW, 3 machine | |
| | | machine 2 | 500 | | |
| | | machine 3 | 500 | | |
| | GW->VPMS Server | Transmission Method | Socket Type | | |
| | | Packet Type | UDP | | |
| | | Transmission Interval | 60 sec | | |
| | | Packet size | 63 octet (Radius Status Report) | | |
| VPMS Server | Transmission Method | Socket Type | | | |
| | Packet Type | UDP | | | |
| | Socket Type | Non-Blocking Mode (selector) | | | |
| VPMS Client | Status Check Interval | 3 sec (default value) – adjustable | | | |
| | Group Management | Maximum Depth One(1) | | | |
| DBMS (Database Mgt System) | DBMS Type | Microsoft MS SQL Server 2000 with sp3 | | | |
| | Server-> DBMS Connection | JDBC Driver Type 4 | | | |
| | TABLE | Total 11 Table (9 Master + 2 Hisory Data) | | | |
| | TABLE INCREMENT Rate | Management GW # = 2,000, Number of Status Change is 5 time per day | | | |
| | | History Data (Table) | event | 2,000 x 5 x 27(byte per event) = 270,000 = 270k/day | Total= 300K per day |
| | status | 24 Hour / server status update Interval (ex: 60 sec) = 1,440 event per day 1,440 x 24 byte (byte per evenet) = 34,560 = 34 K/day | | | |

Simulation Result

AP-VPMS VoIP Plug & Play Management System



GW simulator #1

- 1) O.S : windows server 2003
- 2) CPU : 3.6 GHz (Xeon CPU)
- 3) Memory : 2 G
- 4) GW# : 10 Group X 100 GW# per Group = **1000**

GW simulator #2

- 1) O.S : windows XP Home Edition with sp2
- 2) CPU : 1.69 GHz
- 3) Memory : 1 G
- 4) GW# : = 10 Group X100 GW# per Group = **500**

GW simulator #3

- 1) O.S : windows server 2003 Enterprise Ed.
- 2) CPU : centrino 1.4 G
- 3) Memory : 256 M
- 4) GW# : = 10 Group X100 GW# per Group = **500**

| Item | Start | End | Comments |
|---------------------------|---|--------------------|--------------------------|
| Time | D-2 16:35 min | D+0 09:35 min | Duration = 65 hrs |
| CPU | 2% under | 2 % under | |
| Memory | 12,136 KB(12 M) | 13,368 KB (13 M) | |
| GW down (data loss) | Not Occurred | | |
| History table | Number of Event Table : 103,174, Number of GW status : 9,721 | | |
| VPMS Server Setting | 1) socket receiver buffer : 5,000,000 byte(5M), 2) socket type : Non-Blocking (Selector) | | |
| VPMS Client (Test Result) | 1) Memory : OK (No Leaked), 2) Program Termination (abnormal, normal) : OK, 3) Program Processing Speed : OK (No Delay) 4) if Polling Interval is 5 min or longer than 5min, GWs more than 10000 Ea are supported or controlled by VPMS | | |

Ordering Information

- **AP-VPMS VoIP Plug & Play Management S/W**
 - VPMS Server Program
 - VPMS Client Program
- **Including 1 Year Hardware Warranty**
- **Product Documents**
 - Install and Operation Guide (PDF)
- **Pricing**
 - AddPac Technology Regional Sales Manager
 - Authorized Sales and Marketing Representatives
 - Please Contact www.addpac.com

AP-VPMS VoIP Plug & Play Management

Thank you!

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