

IP based HD Video Multicasting Scheme



AddPac

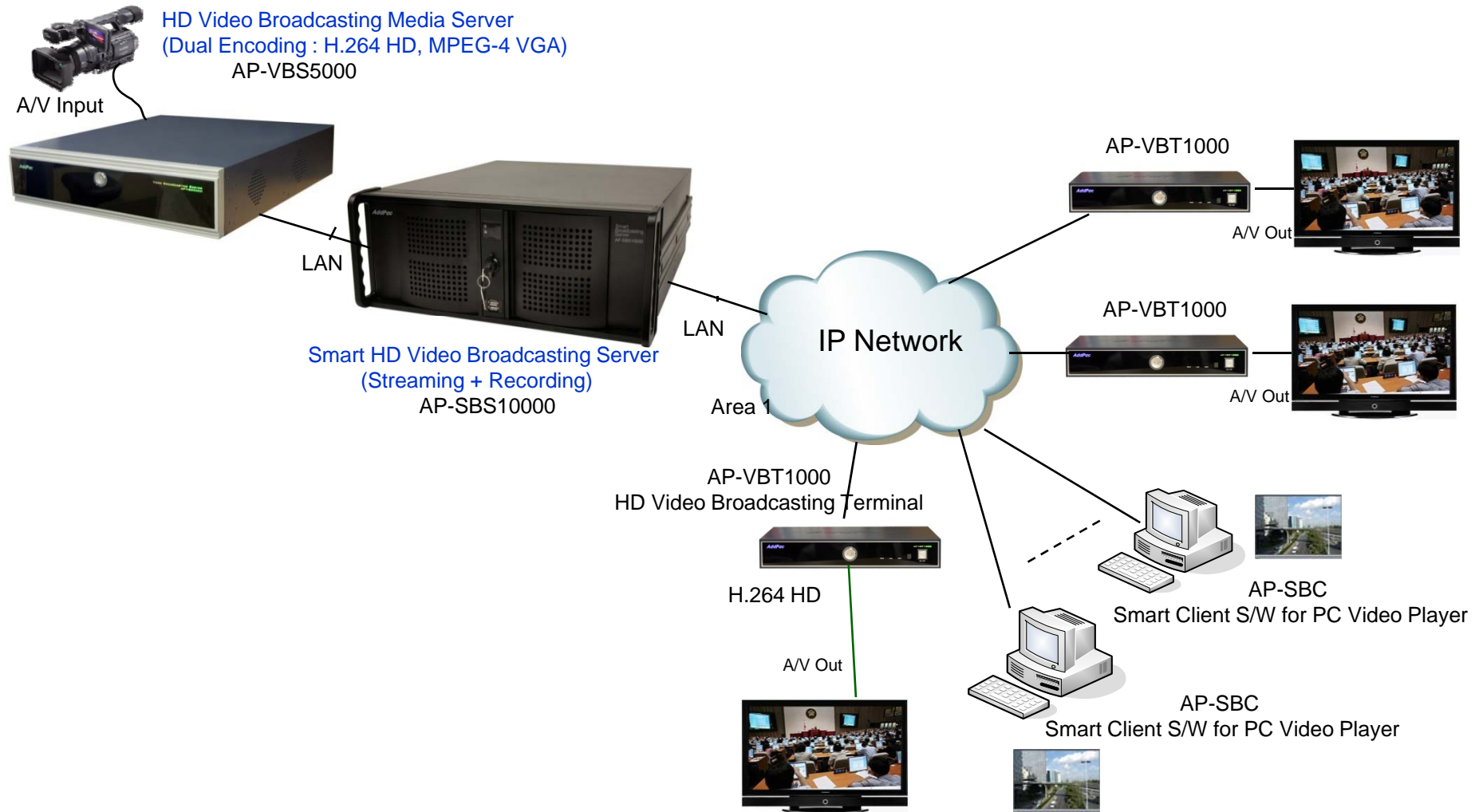
AddPac Technology

2011, Sales and Marketing

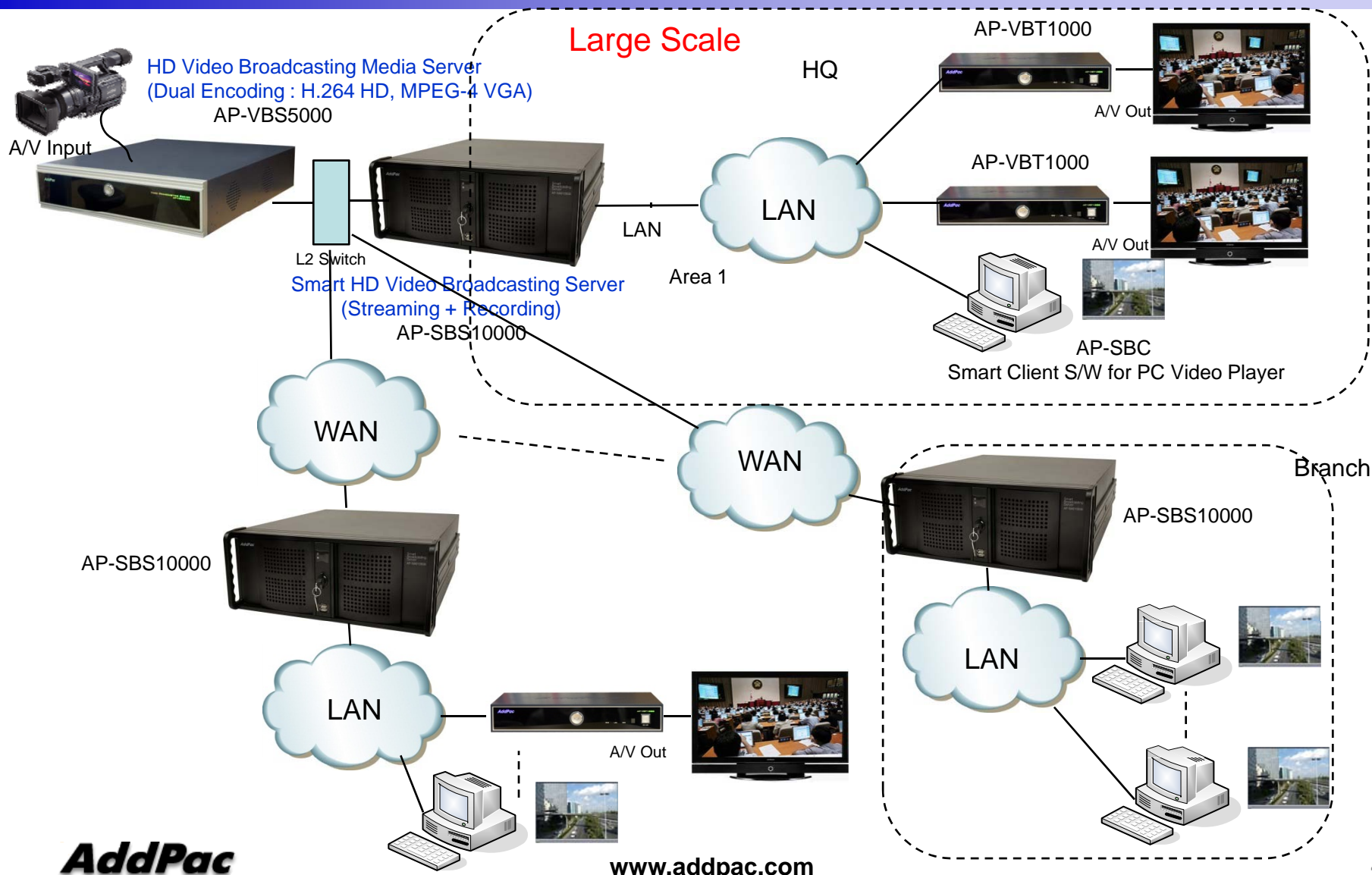
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Smart HD Video Broadcasting Service Diagram



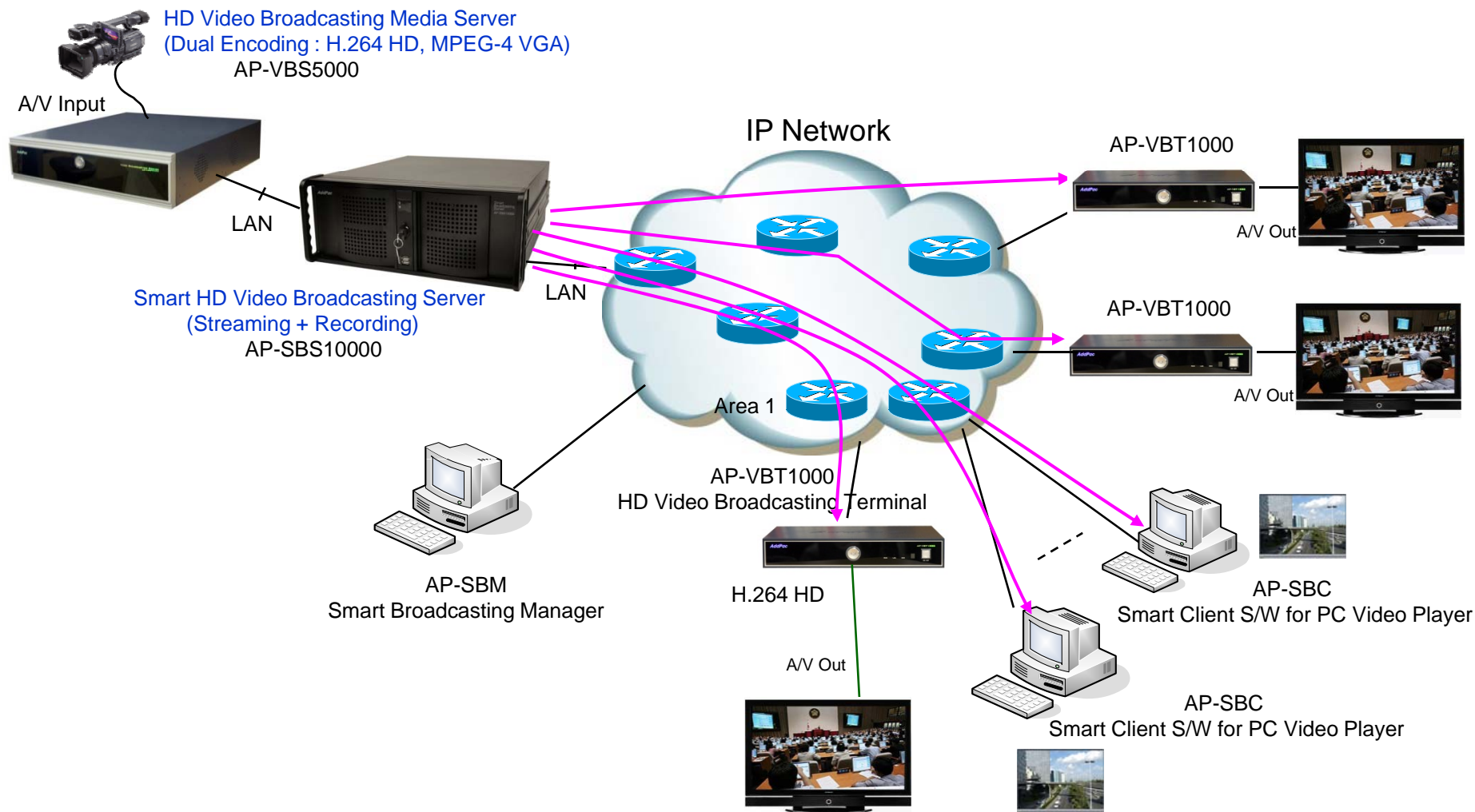
Smart HD Video Broadcasting Service Diagram





IP based HD Video Unicasting Scheme

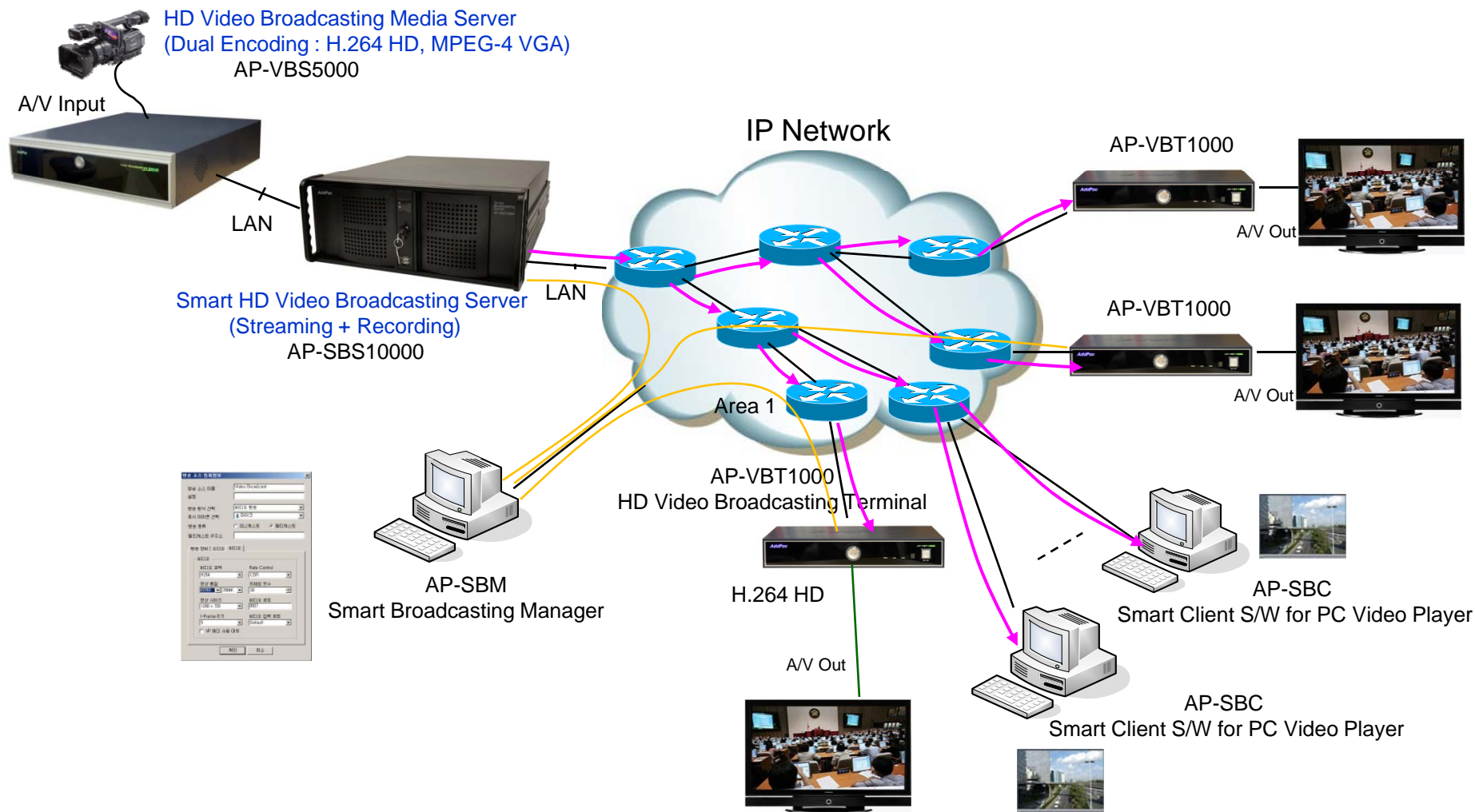
IP based HD Video Unicasting Scheme





IP based HD Video Multicasting Scheme

IP based HD Video Multicasting Scheme



Multicasting Service Configuration (AP-SBM)

The screenshot shows the 'Broadcasting Source Properties' dialog box with the following configuration:

- 1** Source Name: Video Broadcast
- Description: (empty)
- Broadcasting Method: Video Broadcasting
- Icon Indication: Video Camera
- 2** Broadcasting Type: Unicast Multicast
- 3** Multicast IP Address: 224.1.2.1

The 'Video' tab is selected, showing the following settings:

- 4** Video Codec: MPEG4
- Rate Control: CBR
- 5** Video Quality: 4096K (selected), 3904K
- Frame Rate: 30
- 6** Picture Size: 1280 x 720
- 7** Video Port: 8007
- I-Frame Interval: 5
- Video Input Port: Default
- Use VP Header

Buttons: Ok, Cancel

Multicasting Service Configuration(AP-SBM)

Number	Description
1	Video broadcasting source name setting
2	Select Unicast or Multicast Scheme
3	In case of Multicast scheme, Multicast IP address setting
4	Select of broadcasting video codec : MPEG4, H.264, etc
5	Configure bandwidth of video codec for broadcasting service
6	Configure video resolution (size)
7	Configure UDP/RTP port for IP broadcasting

Router & Switch Multicast Configuration(Ex; cisco)

BSR/RP Router (Root) CLI

```
!  
interface FastEthernet0/0  
ip address 172.16.8.20 255.255.0.0  
multicast  
speed auto  
multicast-all  
ip pim sparse-mode  
ip pim version 2  
!  
interface FastEthernet0/1  
ip address 30.1.1.1 255.255.0.0  
multicast  
speed auto  
multicast-all  
ip pim sparse-mode  
!  
!  
ip multicast-routing  
ip pim bsr-candidate 172.16.8.20 masklen 4 priority 200  
ip pim rp-candidate 172.16.8.20 holdtime 150 priority 200  
!
```

Non RP Router CLI

```
!  
interface FastEthernet0/0  
ip address 172.16.8.48 255.255.0.0  
multicast  
speed auto  
multicast-all  
ip pim sparse-mode  
ip pim version 2  
!  
interface FastEthernet0/1  
ip address 20.1.1.1 255.255.0.0  
speed auto  
ip pim sparse-mode  
ip pim version 2  
!  
ip multicast-routing  
!
```

HD Broadcasting Server Protocol Block Diagram

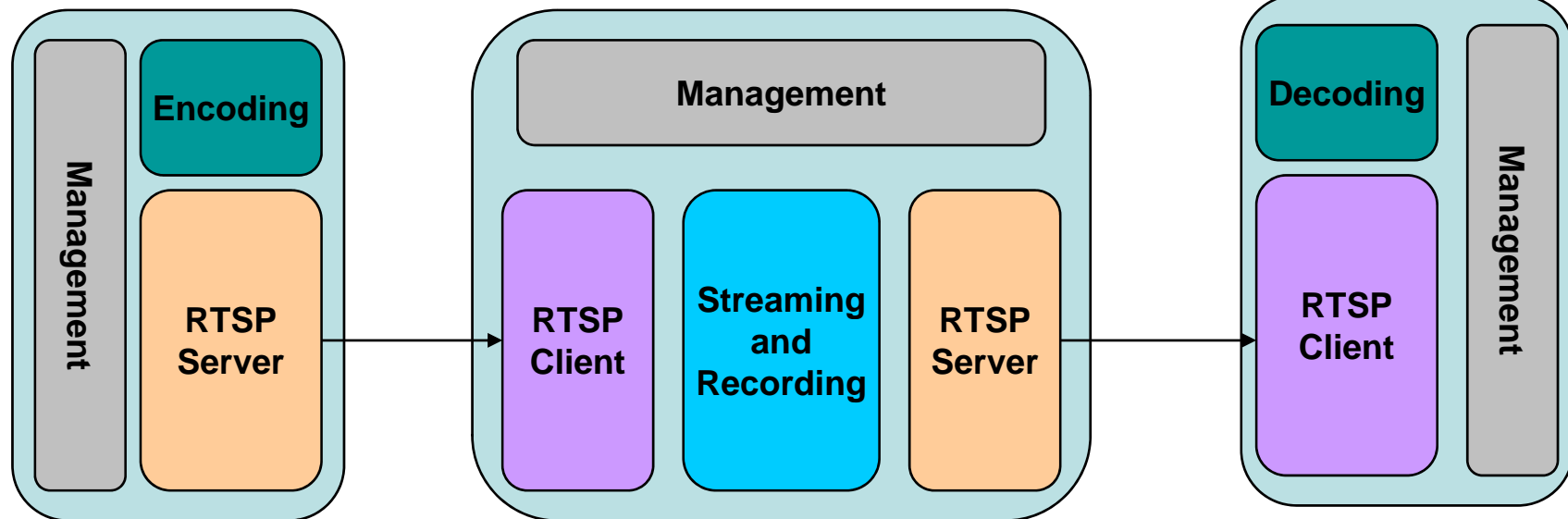
HD Broadcasting Media Encoder



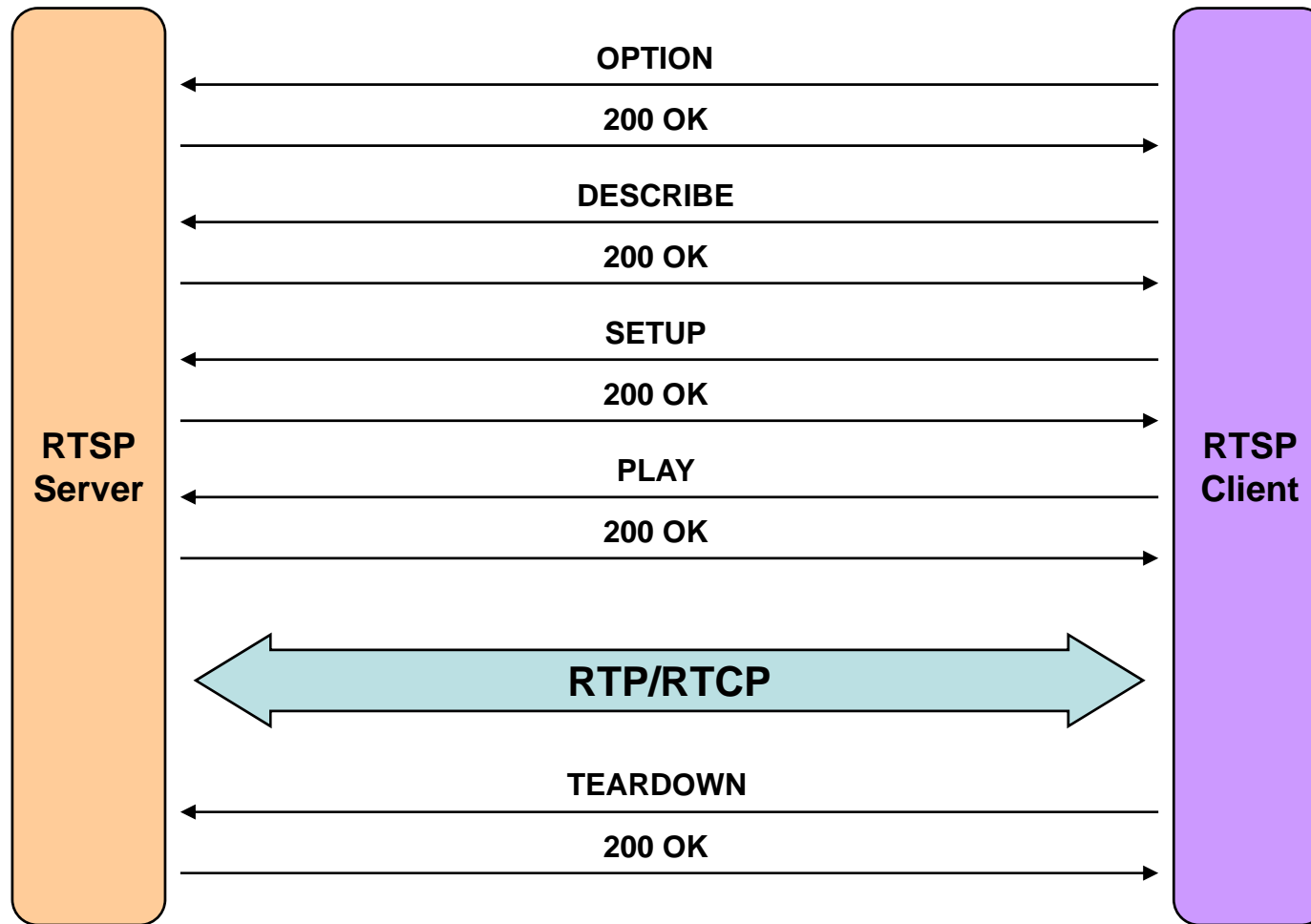
AP-SBS10000 Smart HD Broadcasting Server
(Streaming + Recording)



HD Video Broadcasting Terminal



Basic RTSP Message Flow





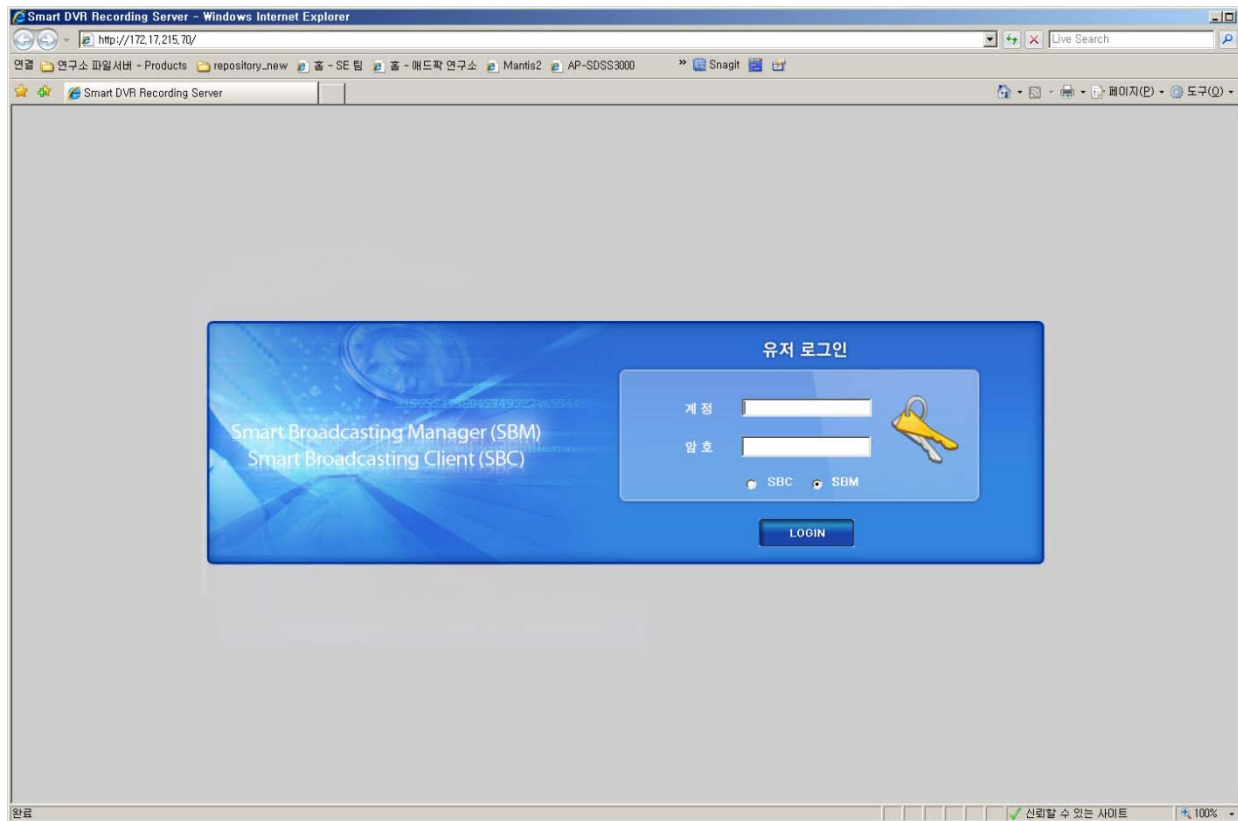
AP-SBM

Smart Broadcasting Manager

SBM Main Features

- Web based Management Scheme
- User Register and Access Restriction Management
- Broadcasting Source Management
- Schedule based Broadcasting Service
- On Demand Broadcasting Service
- Live Session Monitoring
- On Demand Session Monitoring
- Recording File Search and Display
- Recording File History Management
- Broadcasting Media Source Management
- Broadcasting Server Status Monitoring

SBM Web Intro. Display



SBM User/Group Management

The screenshot shows the AddPac Smart Broadcast Manager web interface. The main content area displays a table with columns for ID, 이름 (Name), 그룹 (Group), and 설명 (Description). The table contains one entry: root user.

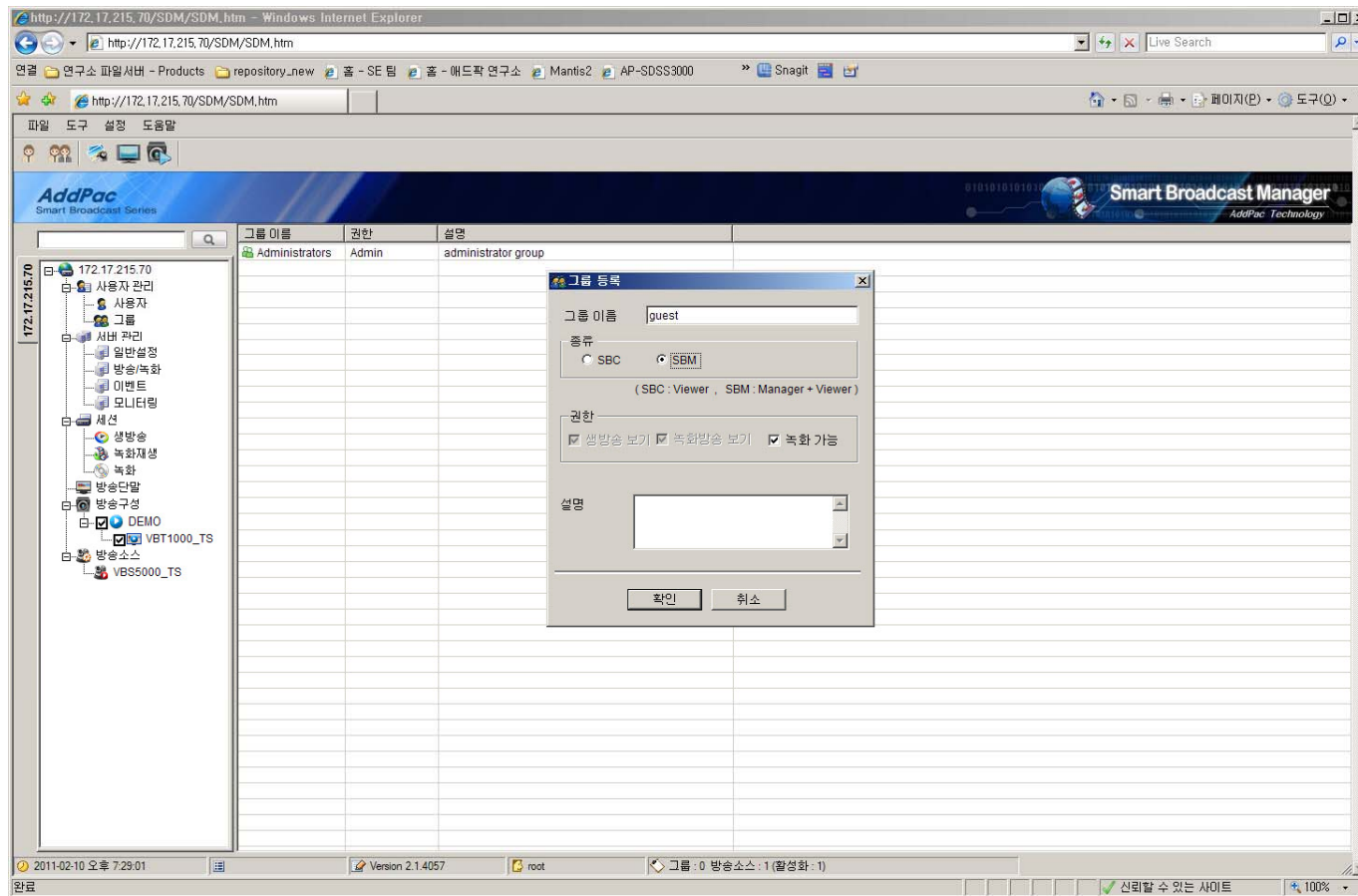
ID	이름	그룹	설명
root	AddPac	Administrators	root user

A modal window titled '사용자 등록' (User Registration) is open, showing the following fields:

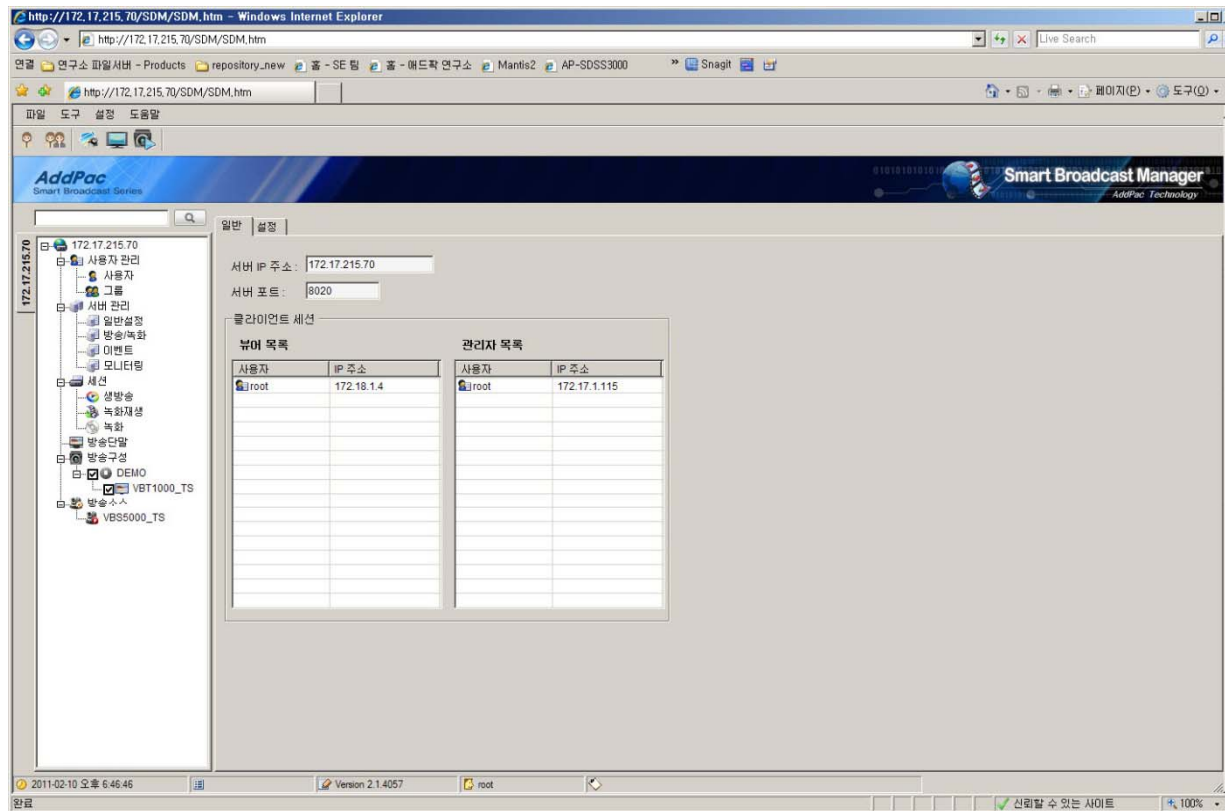
- 사용자 ID: guest
- 사용자 이름: guest
- 그룹: Administrators
- 설명: guest
- 여러 사용자 로그인 허용
- 비밀번호: [masked]
- 비밀번호 확인: [masked]

Buttons for '확인' (OK) and '취소' (Cancel) are visible at the bottom of the modal window.

SBM User/Group Management



Broadcasting Server Management



172.17.215.70

- 172.17.215.70
 - 사용자 관리
 - 사용자
 - 그룹
 - 서버 관리
 - 일반설정
 - 방송/녹화
 - 이벤트
 - 모니터링
 - 채널
 - 생방송
 - 녹화재생
 - 녹화
 - 방송단말
 - 방송구경
 - DEMO
 - VB11000_TS
 - 방송수신
 - VBS5000_TS

일반 | 설정

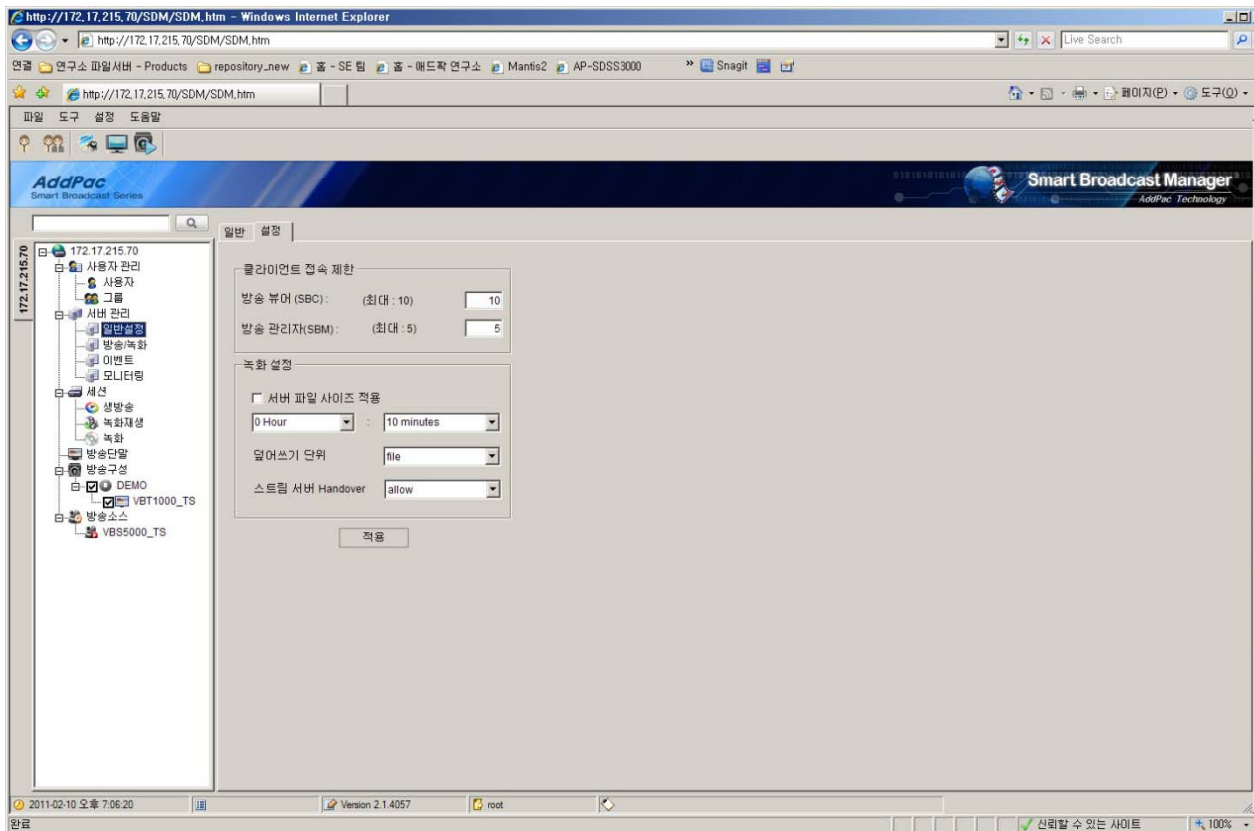
서버 IP 주소: 172.17.215.70
서버 포트: 9020

클라이언트 세션

뉴어 목록		관리자 목록	
사용자	IP 주소	사용자	IP 주소
root	172.18.1.4	root	172.17.1.115

2011-02-10 오후 6:46:46 | Version 2.1.4057 | root | 완료

Broadcasting Server Management



Broadcasting Schedule Management

The screenshot displays the AddPac Smart Broadcast Manager web interface. The browser window title is "http://172.17.215.70/SDM/SDM.htm - Windows Internet Explorer". The page header includes the AddPac logo and "Smart Broadcast Manager".

The interface is divided into several sections:

- Left Navigation Panel:** A tree view showing the system structure under the IP address 172.17.215.70. It includes categories like "사용자 관리" (User Management), "서버 관리" (Server Management), "일반설정" (General Settings), "방송/녹화" (Broadcast/Recording), "이벤트" (Events), "모니터링" (Monitoring), "채널" (Channels), "성방송" (Broadcast), "녹화채널" (Recording Channels), "녹화" (Recording), "방송단말" (Broadcast Terminals), "방송구성" (Broadcast Configuration), "DEMO", "VBT1000_TS", "방송소스" (Broadcast Sources), and "VBS5000_TS".
- Main Content Area:** Titled "방송 / 녹화 예약" (Broadcast / Recording Reservation). It contains sub-sections for "예약 설정" (Reservation Settings) and "종류일 설정" (Type Day Settings).
 - 예약 목록 (Reservation List):** A table with a header "예약이름" (Reservation Name) and one entry "Schedule".
 - 예약표 (Reservation Table):** A grid showing a weekly schedule. The columns represent hours from 0 to 23, and the rows represent days of the week (Mon to Sun) and a "Holiday" row. Shaded cells indicate reserved time slots: Mon 9-11, Tue 9-11, Wed 9-11, Thu 9-11, Fri 9-11, Sat 9-11, Sun 9-11, and Holiday 9-11.
 - 특정일 (Specific Day) Settings:** Fields for "년월일" (Year/Month/Day) set to "2011-02-10", "날짜" (Date), and "진행시간" (Duration). Below these are input fields for "시작시간" (Start Time) and "종료시간" (End Time), both set to "00:00".

The status bar at the bottom shows the date and time "2011-02-10 오후 7:08:38", the version "Version 2.1.4057", and the user "root".

Broadcasting Schedule Management

The screenshot displays the AddPac Smart Broadcast Manager web interface. The browser window title is "http://172.17.215.70/SDM/SDM.htm - Windows Internet Explorer". The address bar shows "http://172.17.215.70/SDM/SDM.htm". The interface includes a navigation menu on the left with categories like "172.17.215.70", "사용자 관리", "서버 관리", "일반설정", "방송/녹화", "이벤트", "모니터링", "세션", "생방송", "녹화재생", "녹화", "방송단말", "방송구성", "DEMO", "VBT1000_TS", and "방송소스". The main content area is titled "방송 / 녹화 예약" and contains sub-tabs for "예약 설정", "공휴일 설정", and "녹화 이력". The "공휴일 목록" (Holiday List) section is active, showing a calendar for March 2011 and a table of holidays.

일	월	화	수	목	금	토
27	28	29	30	31	1	2
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9

공휴일	반복 패턴
2011-03-01	none

Below the table, there is a "반복 패턴" (Repeat Pattern) dropdown menu set to "None" and a "적용" (Apply) button. The status bar at the bottom shows "2011-02-10 오후 7:05:59", "Version 2.1.4057", and "root".

Recording File Status Display

The screenshot displays the AddPac Smart Broadcast Manager web interface. The browser window title is "http://172.17.215.70/SDM/SDM.htm - Windows Internet Explorer". The interface includes a navigation menu on the left with categories like "사용자 관리", "그룹", "서비스 관리", "일반설정", "방송/녹화", "이벤트", "모니터링", "채널", "생방송", "녹화제상", "녹화", "방송단말", "방송구성", "DEMO", "VB11000_TS", and "방송소스". The main content area shows a table with the following data:

방송소스 그룹	녹화 크기	녹화 개수	녹화 비율 (%)
/	9,166,874 KB	76	100%
Total	9,166,874 KB	76	

The status bar at the bottom indicates the date and time as "2011-02-10 오후 7:18:52", the version as "Version 2.1.4057", and the current user as "root".

Recording File History Display

The screenshot displays the AddPac Smart Broadcast Manager web interface. The main content area shows a table of recording file history. The table has the following columns: 방송소스명 (Broadcast Source Name), 녹화시작시간 (Recording Start Time), 녹화종료시간 (Recording End Time), 녹화시간 (Recording Duration), 녹화설명 (Recording Description), 방송소스 그룹 (Broadcast Source Group), and 사용자 ID (User ID). The table lists multiple recording entries for the source 'VBSS5000_TS'.

방송소스명	녹화시작시간	녹화종료시간	녹화시간	녹화설명	방송소스 그룹	사용자 ID
VBSS5000_TS	2011-02-09 21:25:25	2011-02-09 21:26:10	00:00:45		/	root
VBSS5000_TS	2011-02-09 21:26:33	2011-02-09 21:29:59	00:03:26		/	root
VBSS5000_TS	2011-02-09 21:30:00	2011-02-09 21:58:59	00:29:59		/	root
VBSS5000_TS	2011-02-09 22:00:00	2011-02-09 22:29:59	00:29:59		/	root
VBSS5000_TS	2011-02-09 22:30:00	2011-02-09 22:59:59	00:29:59		/	root
VBSS5000_TS	2011-02-09 23:00:00	2011-02-09 23:29:59	00:29:59		/	root
VBSS5000_TS	2011-02-09 23:30:00	2011-02-09 23:59:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 00:00:00	2011-02-10 00:30:00	00:30:00		/	root
VBSS5000_TS	2011-02-10 00:30:00	2011-02-10 00:59:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 01:00:00	2011-02-10 01:29:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 01:30:00	2011-02-10 01:59:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 02:00:00	2011-02-10 02:29:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 02:30:00	2011-02-10 02:59:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 03:00:00	2011-02-10 03:29:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 03:30:00	2011-02-10 04:00:00	00:30:00		/	root
VBSS5000_TS	2011-02-10 04:00:00	2011-02-10 04:29:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 04:30:00	2011-02-10 04:59:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 05:00:00	2011-02-10 05:29:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 05:30:00	2011-02-10 05:59:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 06:00:00	2011-02-10 06:29:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 06:30:00	2011-02-10 06:59:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 07:00:00	2011-02-10 07:30:00	00:30:00		/	root
VBSS5000_TS	2011-02-10 07:30:00	2011-02-10 07:59:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 08:00:00	2011-02-10 08:30:00	00:30:00		/	root
VBSS5000_TS	2011-02-10 08:30:00	2011-02-10 08:59:59	00:29:59		/	root
VBSS5000_TS	2011-02-10 09:00:00	2011-02-10 09:09:23	00:09:23		/	root
VBSS5000_TS	2011-02-10 09:09:42	2011-02-10 09:09:59	00:00:17	Recording_110210	/	root
VBSS5000_TS	2011-02-10 09:10:00	2011-02-10 09:19:59	00:09:59	Recording_110210	/	root
VBSS5000_TS	2011-02-10 09:20:00	2011-02-10 09:30:00	00:10:00	Recording_110210	/	root
VBSS5000_TS	2011-02-10 09:30:00	2011-02-10 09:39:59	00:09:59	Recording_110210	/	root
VBSS5000_TS	2011-02-10 09:40:00	2011-02-10 09:50:00	00:10:00	Recording_110210	/	root
VBSS5000_TS	2011-02-10 09:50:00	2011-02-10 09:51:41	00:01:41	Recording_110210	/	root
VBSS5000_TS	2011-02-10 09:57:34	2011-02-10 09:58:53	00:02:19	recording	/	root
VBSS5000_TS	2011-02-10 10:19:54	2011-02-10 10:19:59	00:00:05	recording	/	root
VBSS5000_TS	2011-02-10 10:20:00	2011-02-10 10:29:42	00:09:42	recording	/	root
VBSS5000_TS	2011-02-10 10:34:02	2011-02-10 10:36:13	00:02:11		/	root

전체 62 결과가 검색되었습니다.

Live Session Monitoring

The screenshot displays the AddPac Smart Broadcast Manager web interface. The browser window title is "http://172.17.215.70/SDM/SDM.htm - Windows Internet Explorer". The address bar shows "http://172.17.215.70/SDM/SDM.htm". The interface includes a navigation menu on the left with options like "사용자 관리", "그룹", "서비스 관리", "일반설정", "방송/녹화", "이벤트", "모니터링", "채널", "생방송", "녹화", "방송단말", "방송구성", "DEMO", "VBT1000_TS", and "방송소스". The main content area features a table with the following columns: "장비", "모델명", "IP주소", "라이브 설정", and "클라이언트 수". The table contains one row of data:

장비	모델명	IP주소	라이브 설정	클라이언트 수
VBS5000_TS		172.17.215.80	1280x720 30 fps [8192k]	1

Below the main table is a section titled "클라이언트 목록" (Client List) with columns for "사용자ID", "사용자IP주소", and "접속 시간". The status bar at the bottom indicates "2011-02-10 오후 7:21:17", "Version 2.1.4057", "root", and "생방송 : 1 클라이언트 : 1".

On Demand Session Monitoring

The screenshot displays the AddPac Smart Broadcast Manager web interface. The browser window title is "http://172.17.215.70/SDM/SDM.htm - Windows Internet Explorer". The interface includes a navigation menu on the left with options like "사용자 관리", "서버 관리", "채널 관리", and "세션". The main area features a table with the following columns: "방송소스", "시작 시간", "진행시간", "정보", "서버 주소", "사용자 ID", "사용자 IP주소", and "종료 시간".

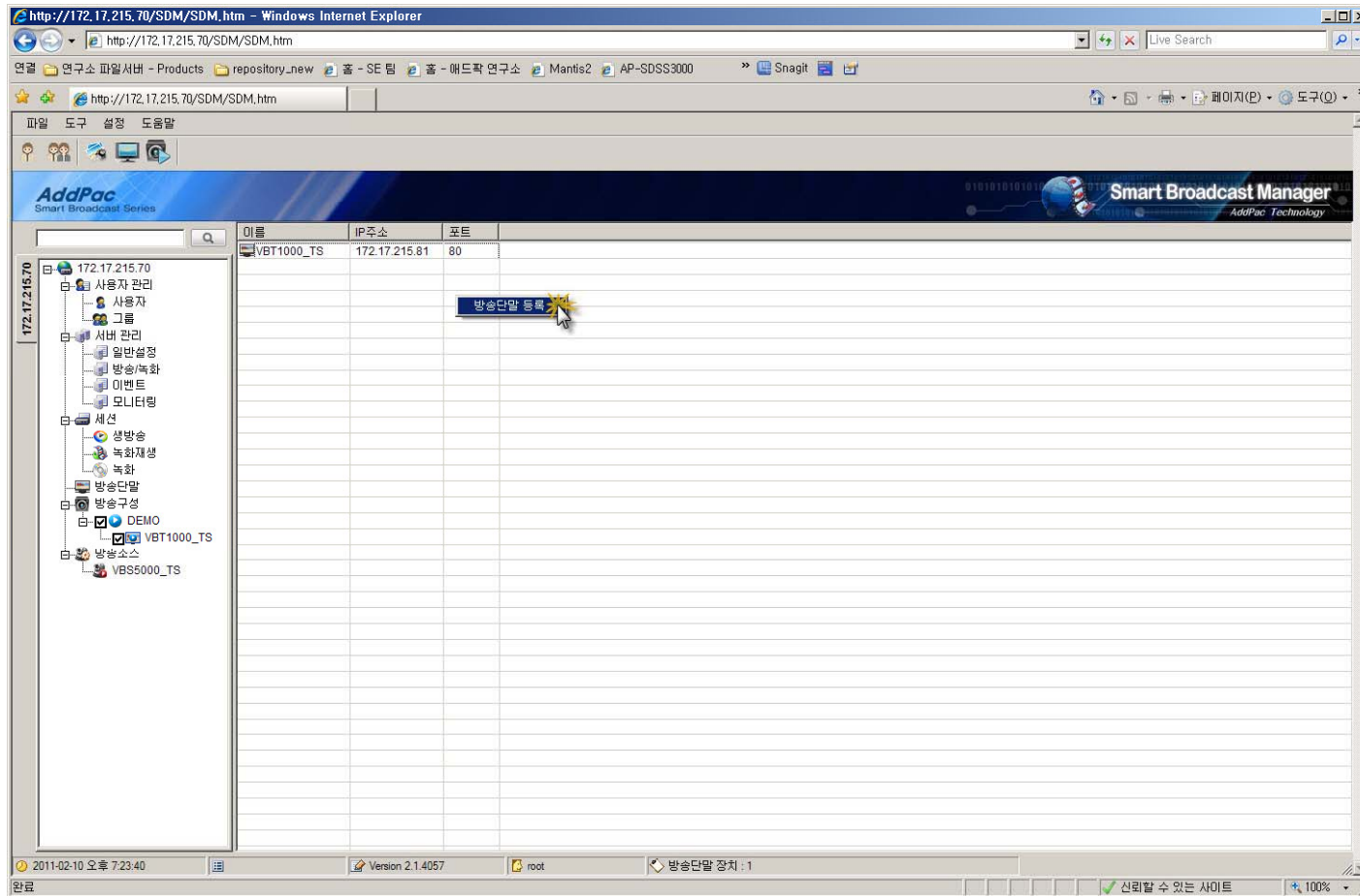
방송소스	시작 시간	진행시간	정보	서버 주소	사용자 ID	사용자 IP주소	종료 시간
unknown	2011-02-10 19:22:14	00:29:59	1280X720 ...	172.17.215.70	MediaPl...	172.17.1.115	2011-02-10 19:22:14
unknown	2011-02-10 19:22:03	00:09:59	1280X720 ...	172.17.215.70	MediaPl...	172.17.1.115	2011-02-10 19:22:03

Recording Session Monitoring

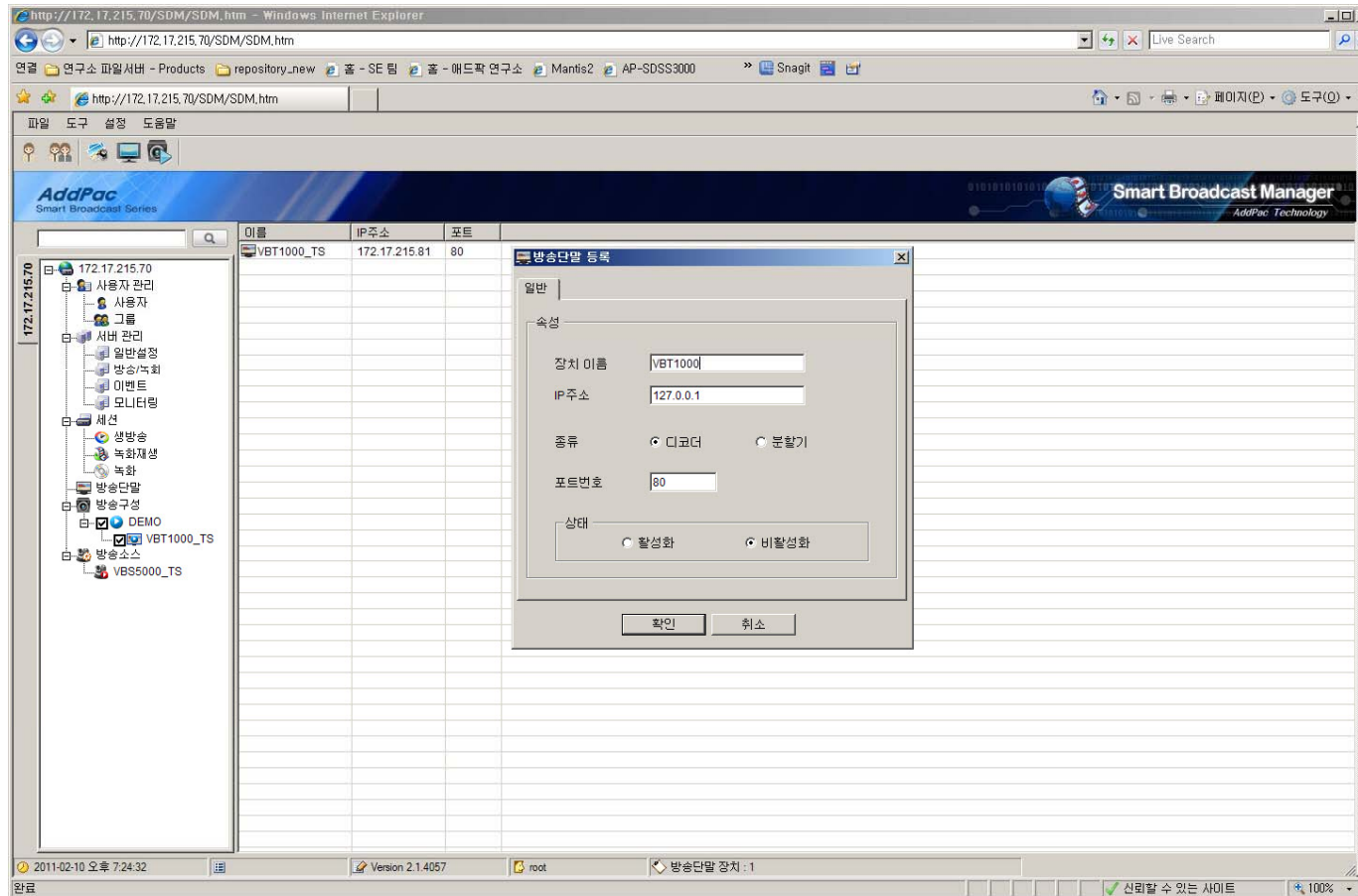
The screenshot displays the AddPac Smart Broadcast Manager web interface within a Windows Internet Explorer browser. The interface features a navigation tree on the left and a main data table. The table lists recording sessions with columns for Broadcast Source, Recording Time, Recording Information, Server IP Address, Running Time, and Description.

방송소스	녹화 시간	녹화 정보	서버 IP주소	진행 시간	설명
VBS5000_TS	2011-02-10 19:20:00	1280x720 30 fps [8192k]	172.17.215.70	00:03:02	

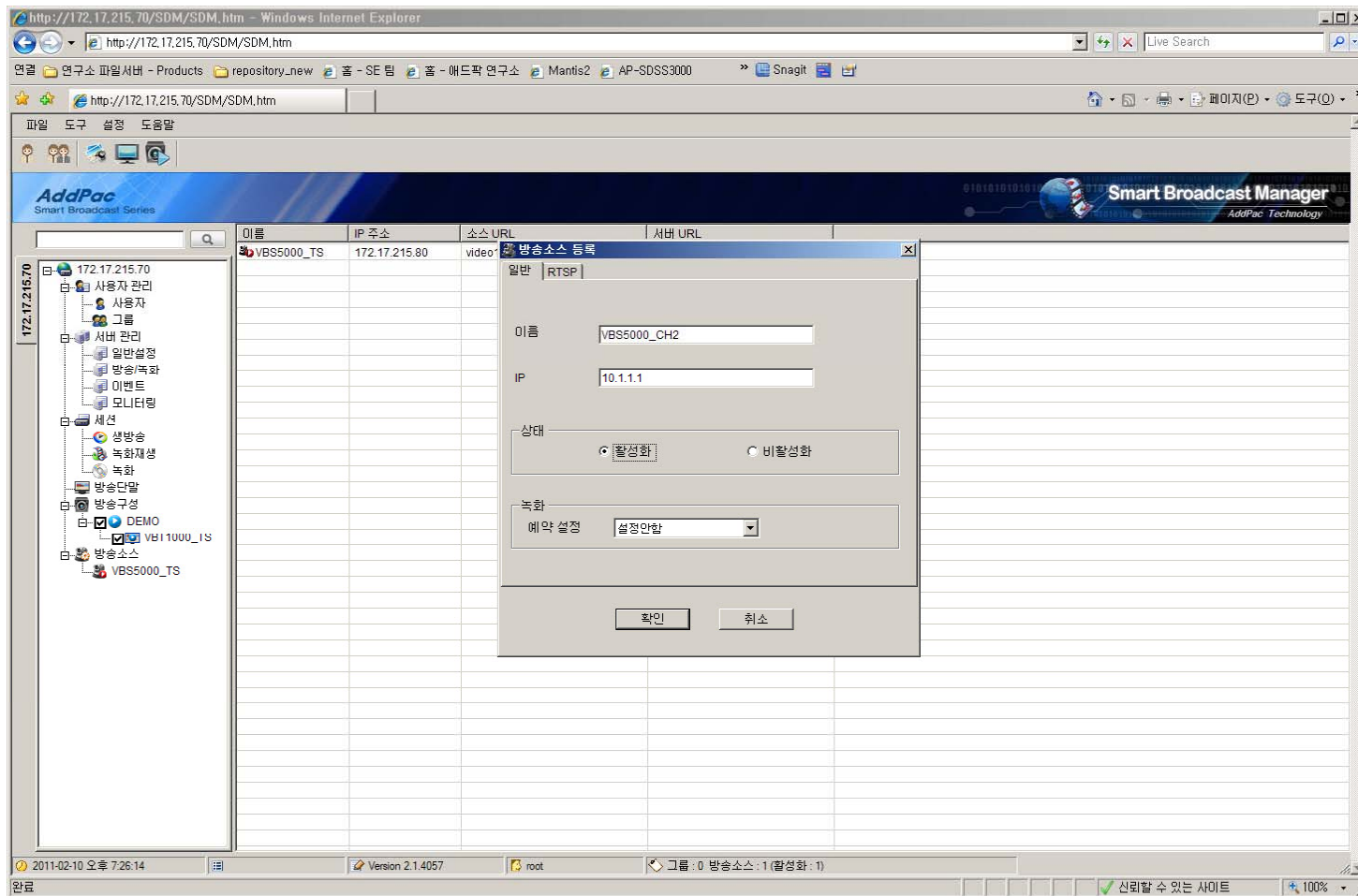
Broadcasting Terminal Registration



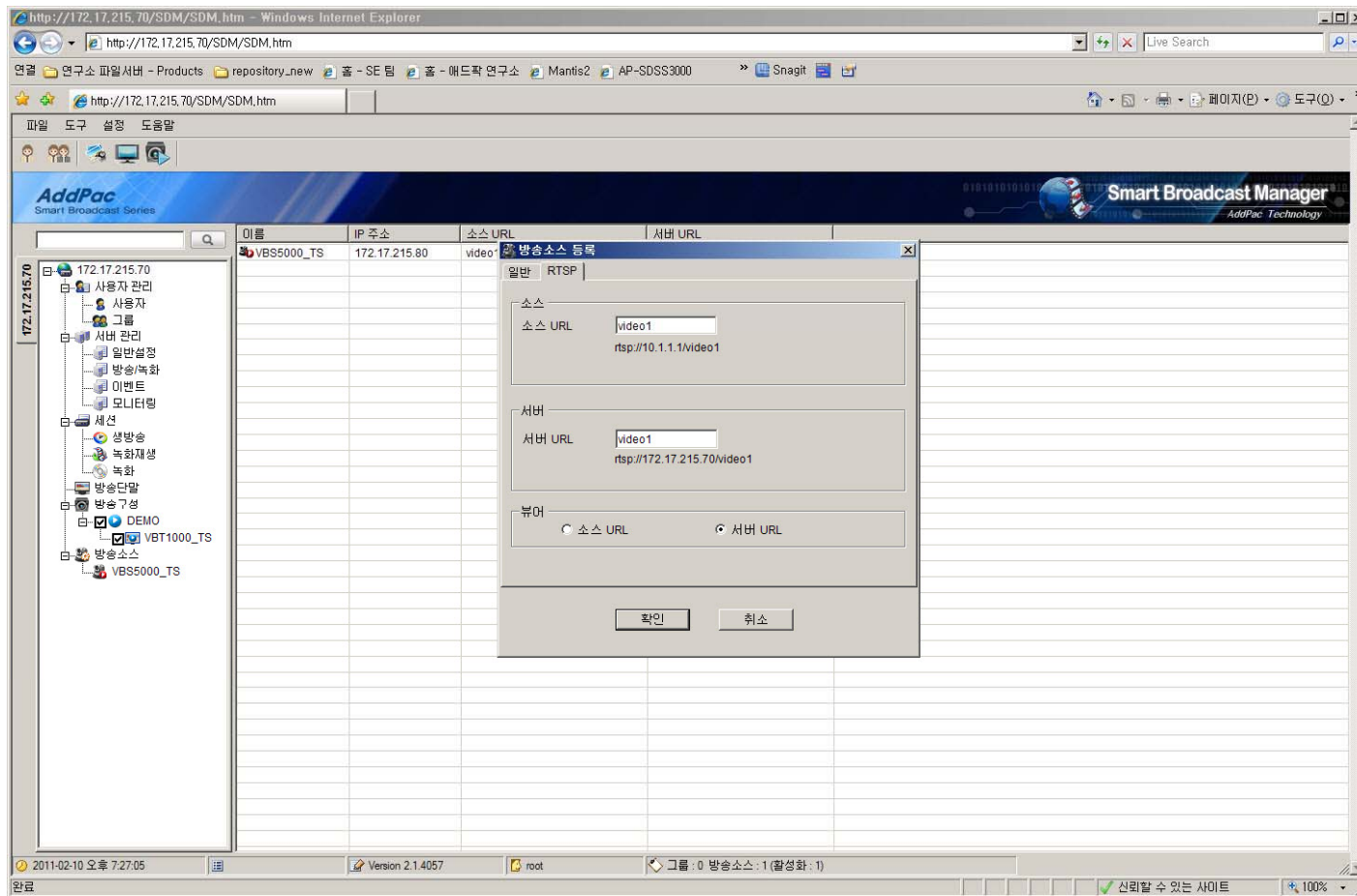
Broadcasting Terminal Registration



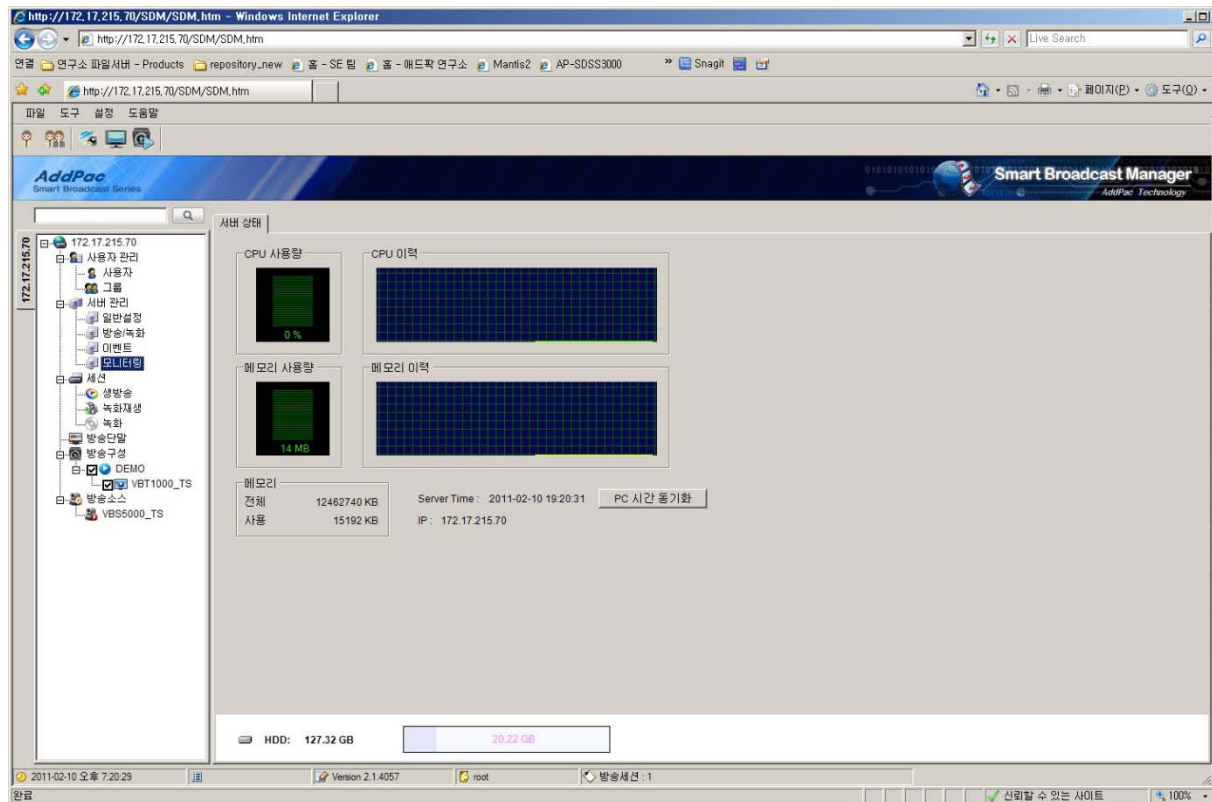
Broadcasting Media Source Registration



Broadcasting Media Source Registration



Broadcasting Server Status Monitoring





Thank you!

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