

DMTF DMI 2.0  
PC Server

1997. 11. 27

POSTECH DPE Lab

- 
- (System Management)
- DMTF DMI
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- NT Server

- PC Server

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- SNMP (Simple Network Management Protocol)

- DMI (Desktop Management Interface)

- DMTF (Desktop Management Task Force)  
DMI ver 2.0 PC

Server

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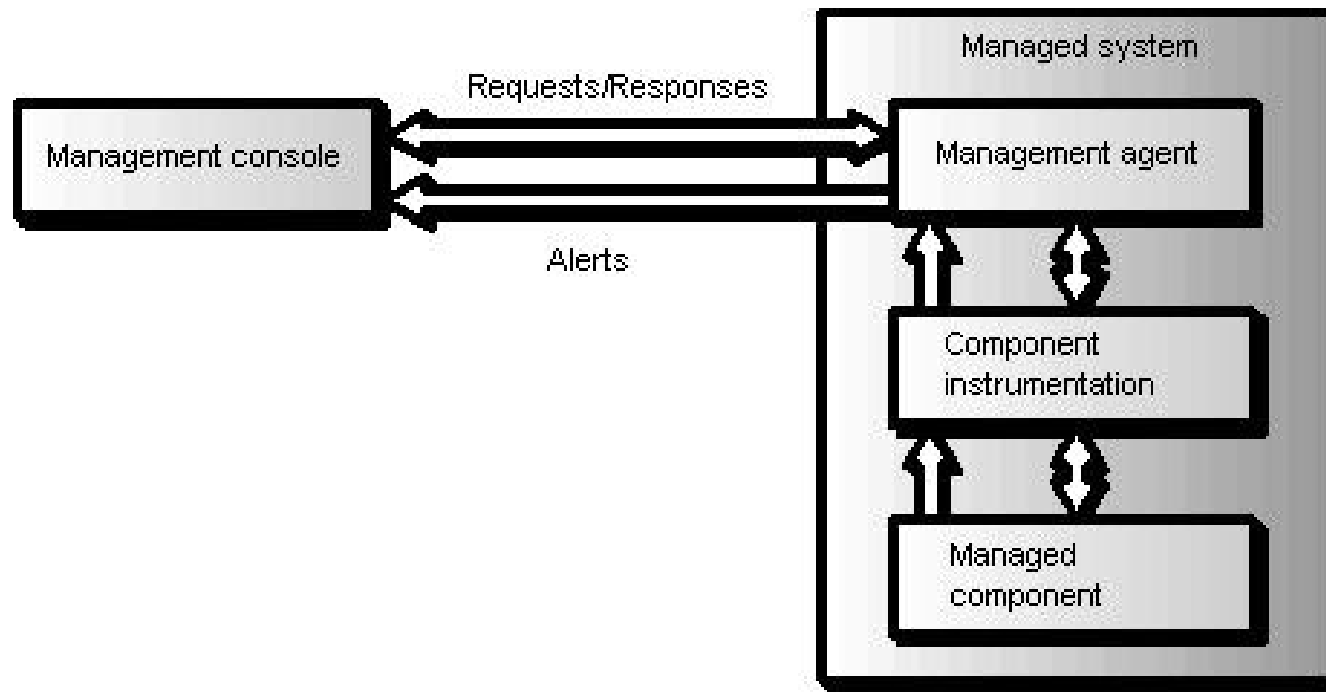
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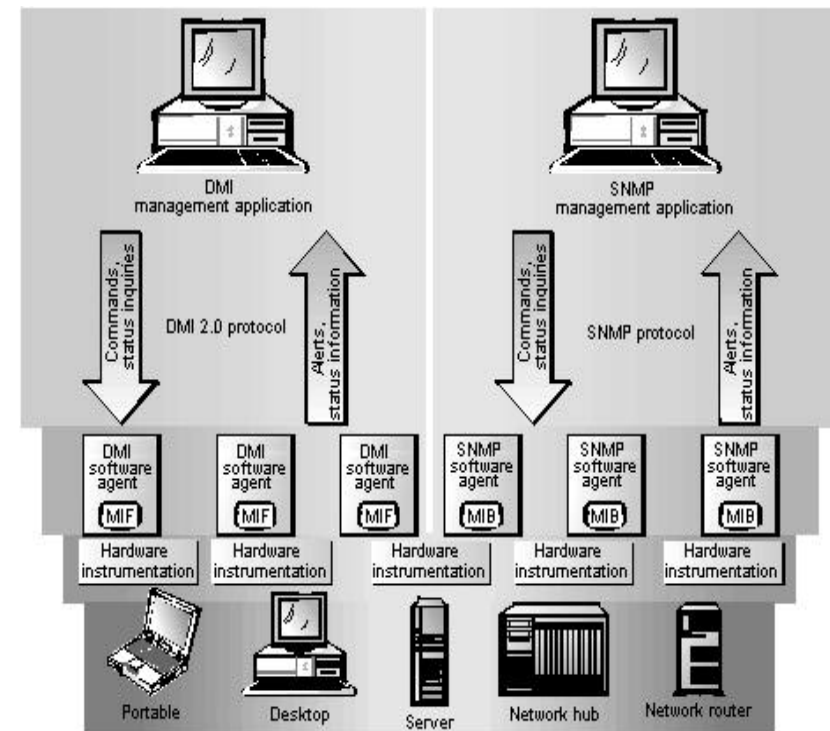
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(2)



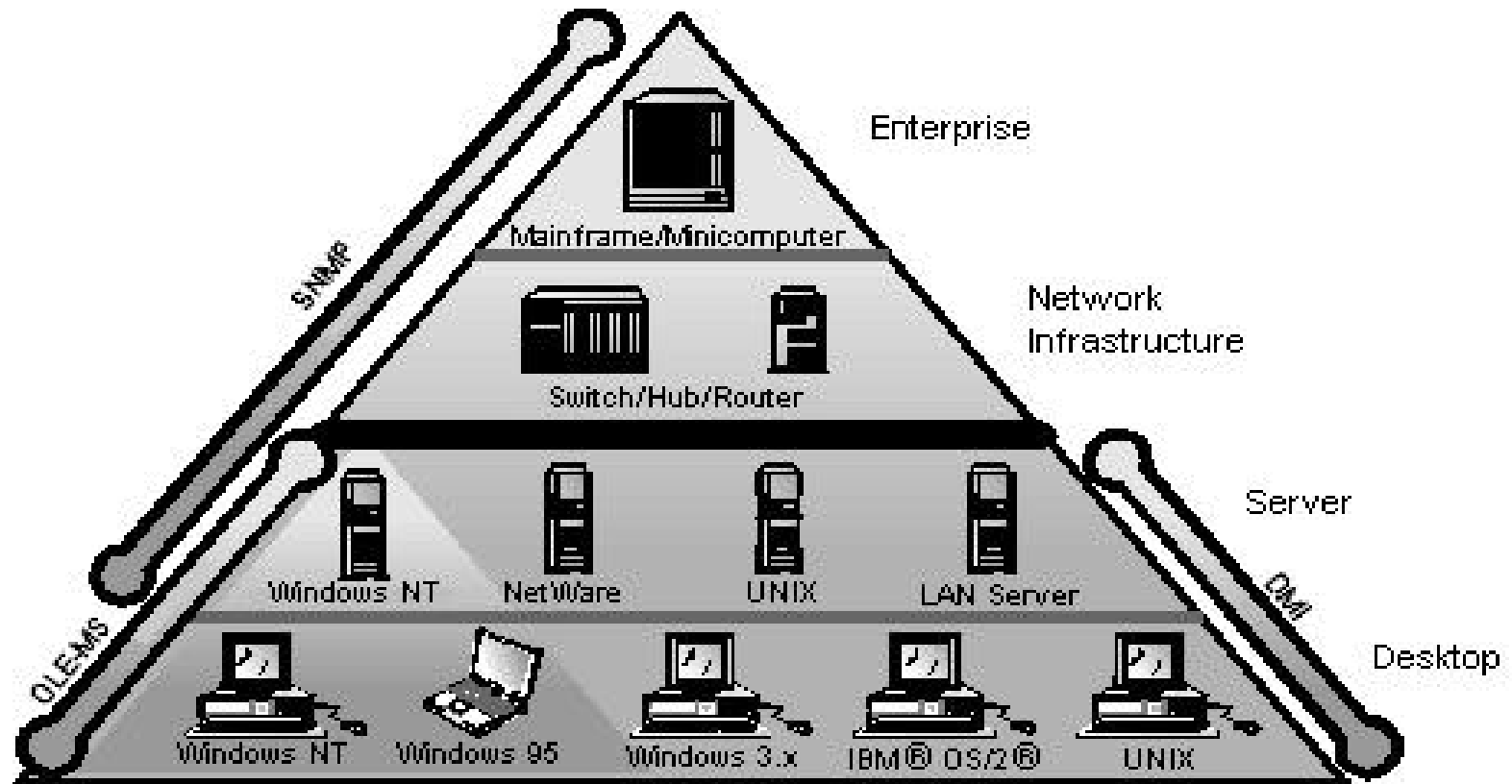
(3)

- - IETF (Internet Engineering Task Force) SNMP
  - DMTF (Desktop Management Task Force) DMI



(4)

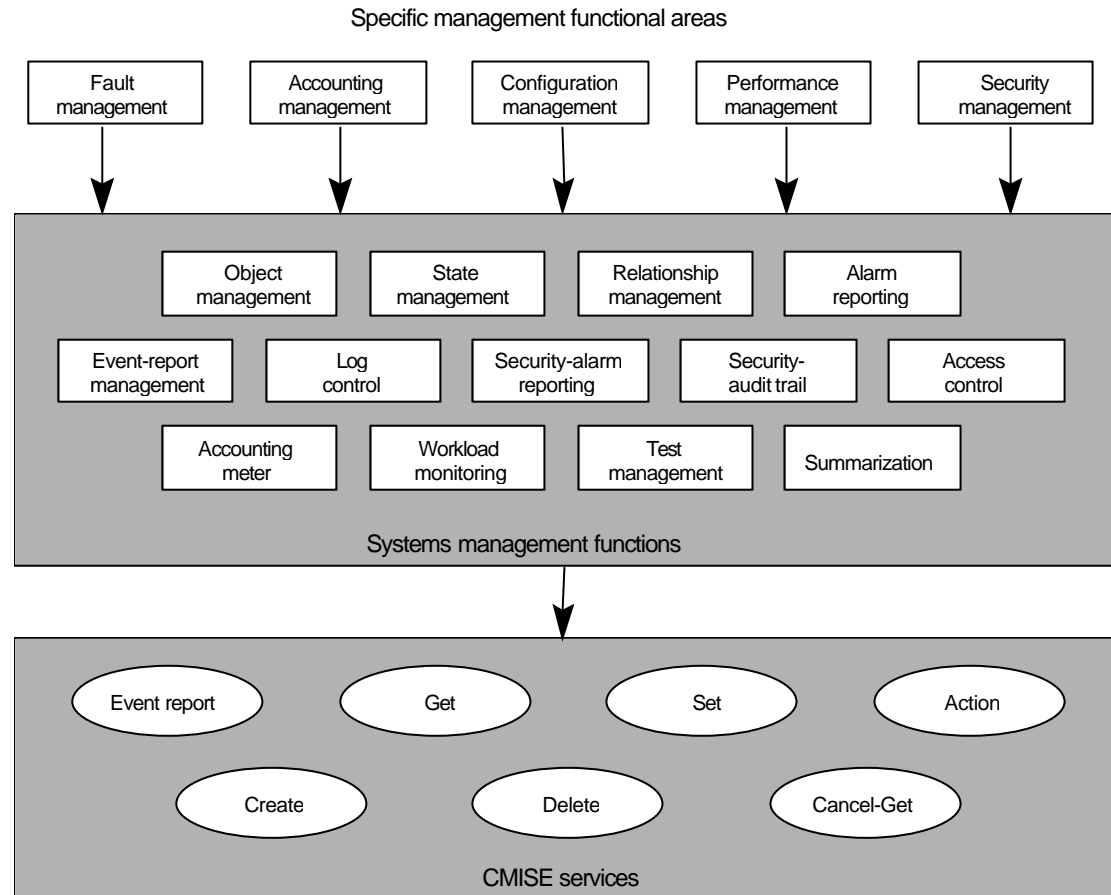
SNMP DMI



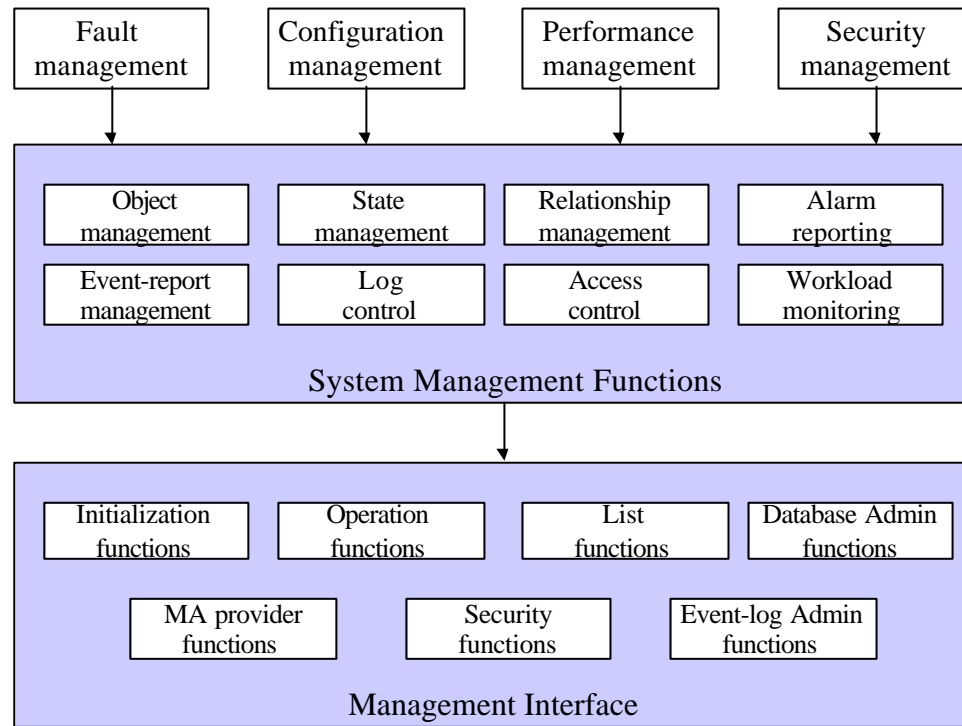


(5)

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– OSI



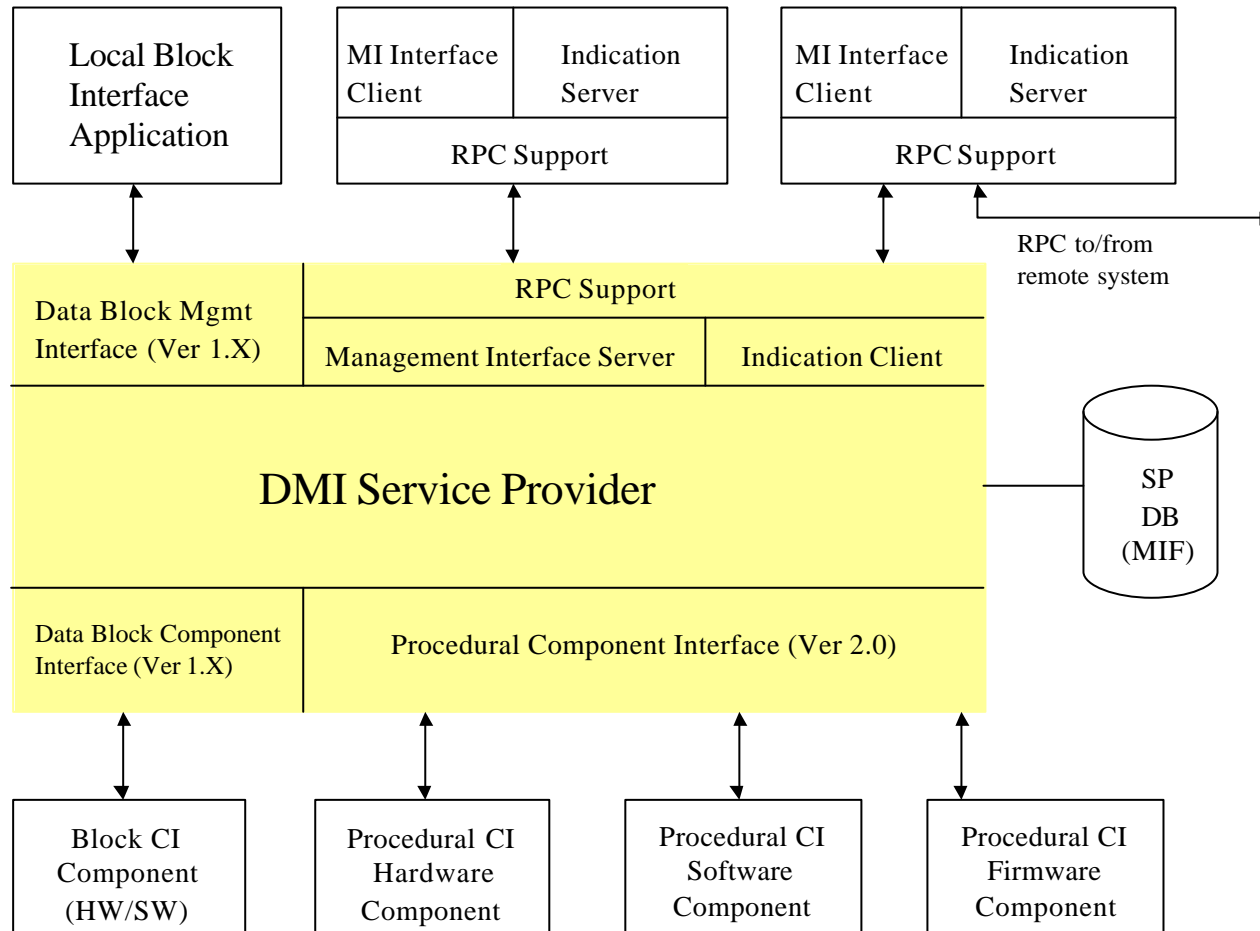
(6)



# DMI (1)

- DMTF (Desktop Management Task Force)
  - PC  
(Consortium)
    - Apple, Compaq, DEC, HP, IBM, Intel,  
Microsoft, Symantec, Novell
- DMI Ver 2.0 (1996. 3.)
- Ver 3.0

# DMI (2)



# DMI (3)

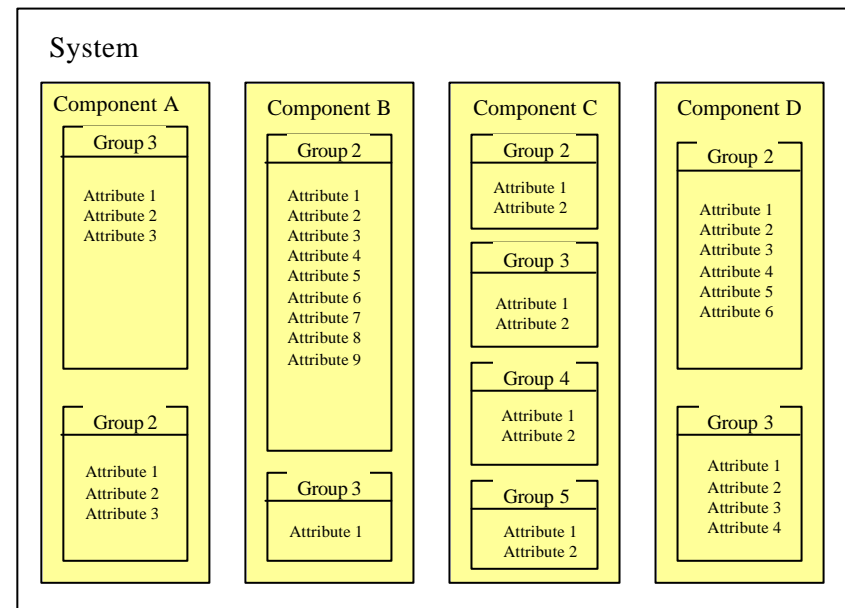
- MIF (Management Information Format)

- (schema)

- SNMP MIB

- Text

- ASCII or UNICODE



# DMI (4)

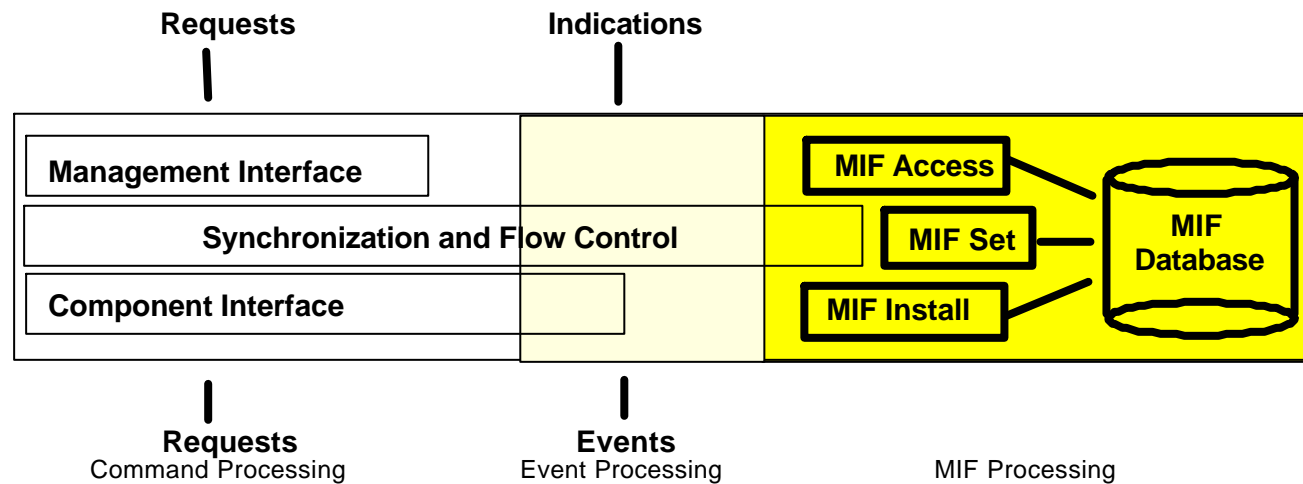
- Service Provider (SP)

- Console

(agent)

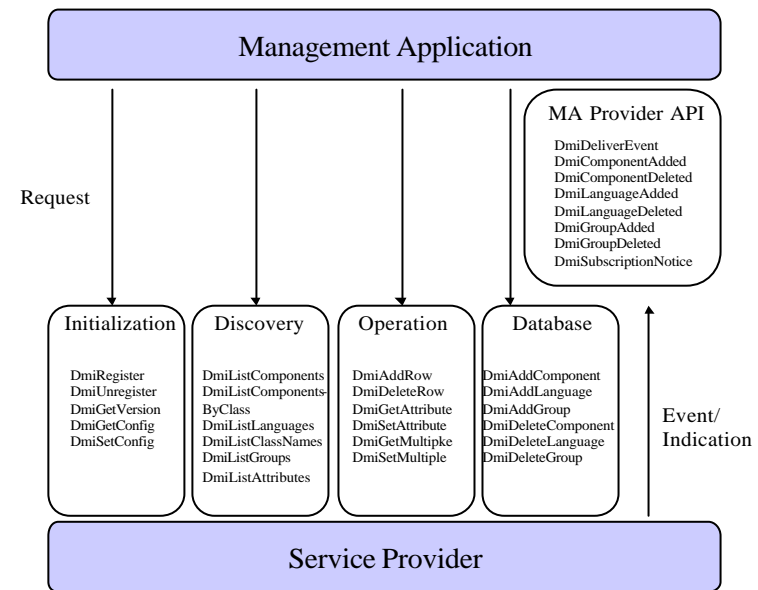
- 

console



# DMI (5)

- MI (Management Interface)
  - SP console
  - SP가 console (Management Application)



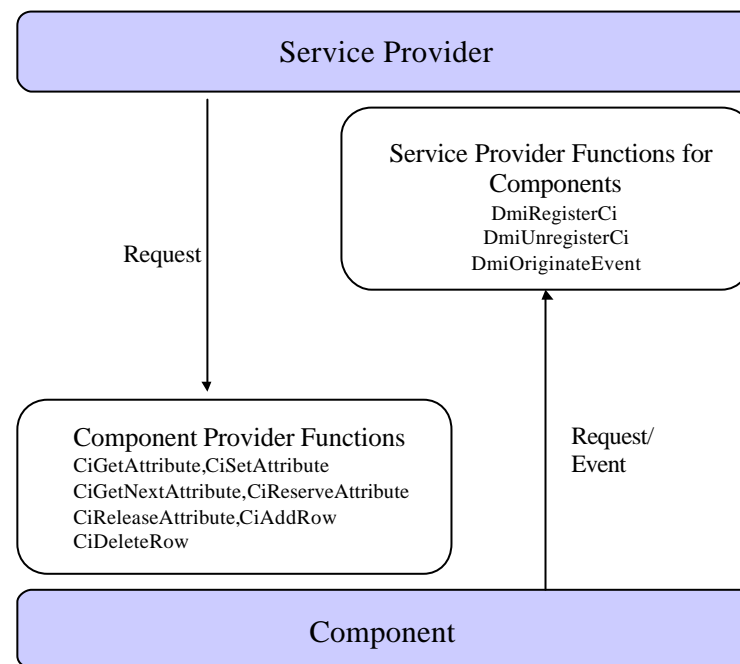
# DMI (6)

- CI (Component Interface)

- SP (component)

- SP가

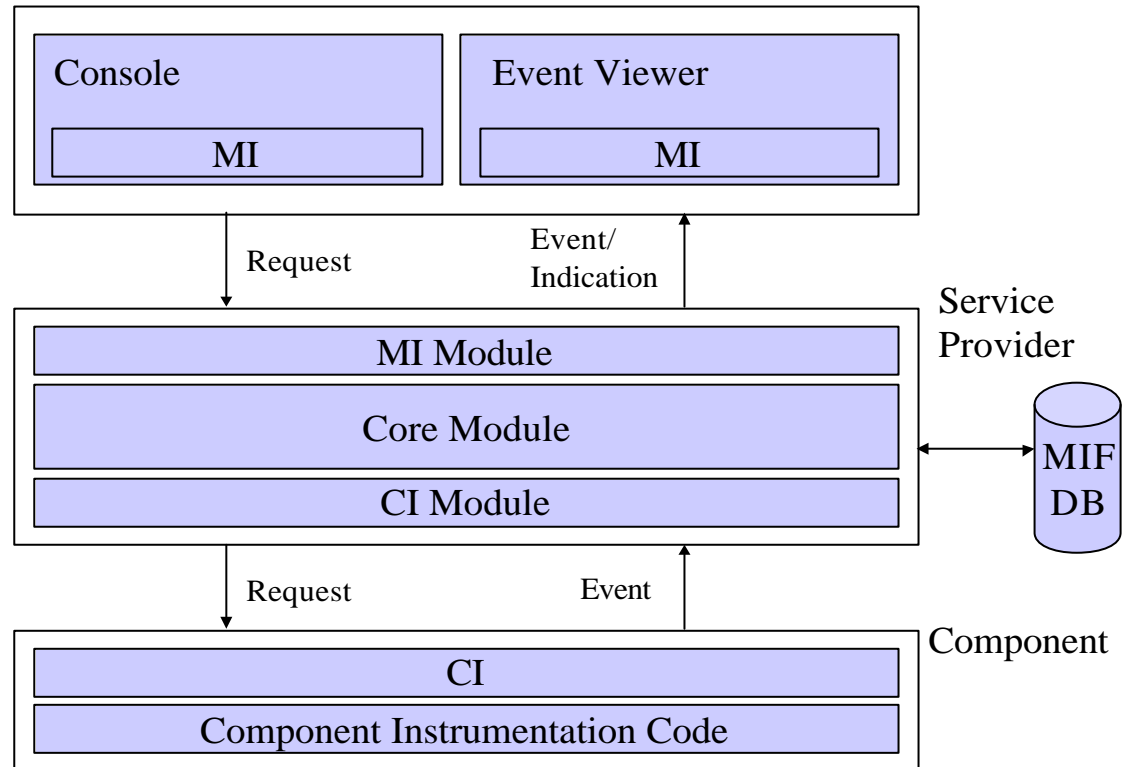
- 가





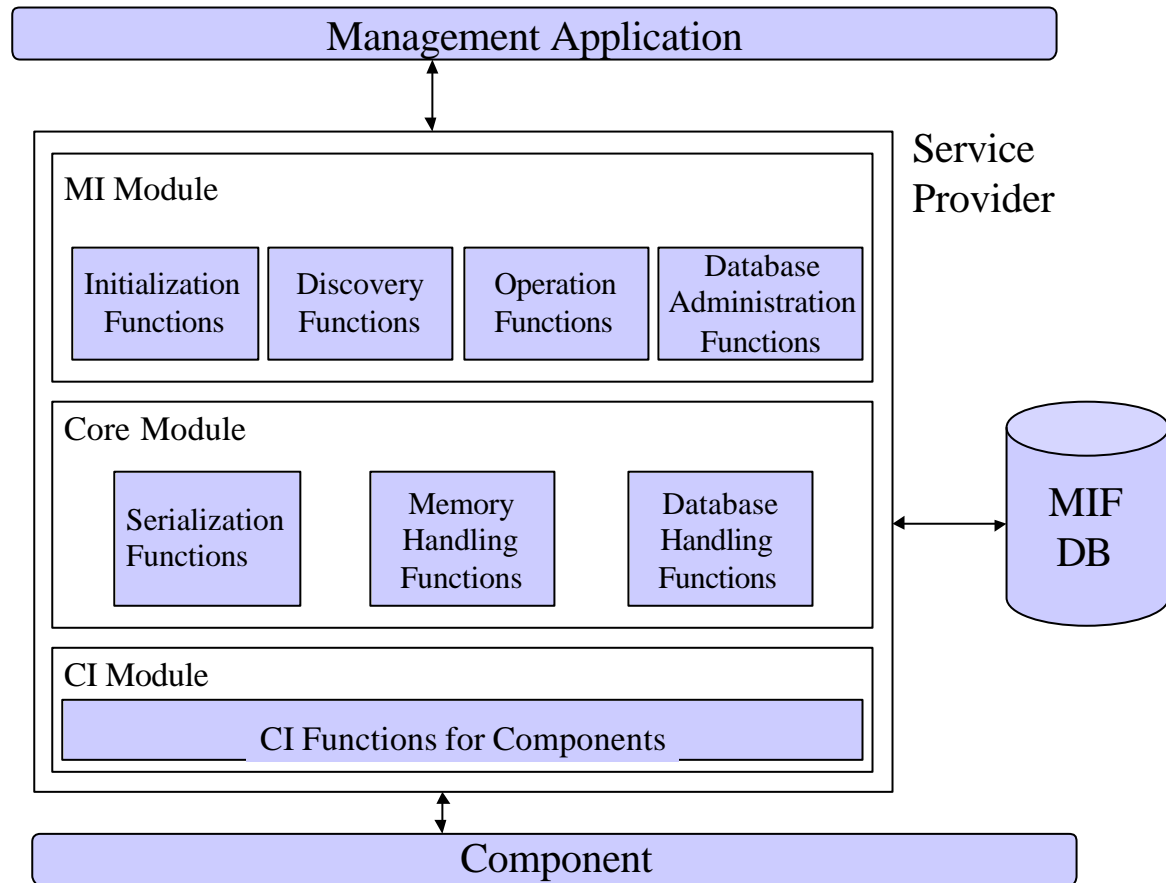
(1)

- - Console
  - Event Viewer
  - SP
  - MIF DB
  - Component



(2)

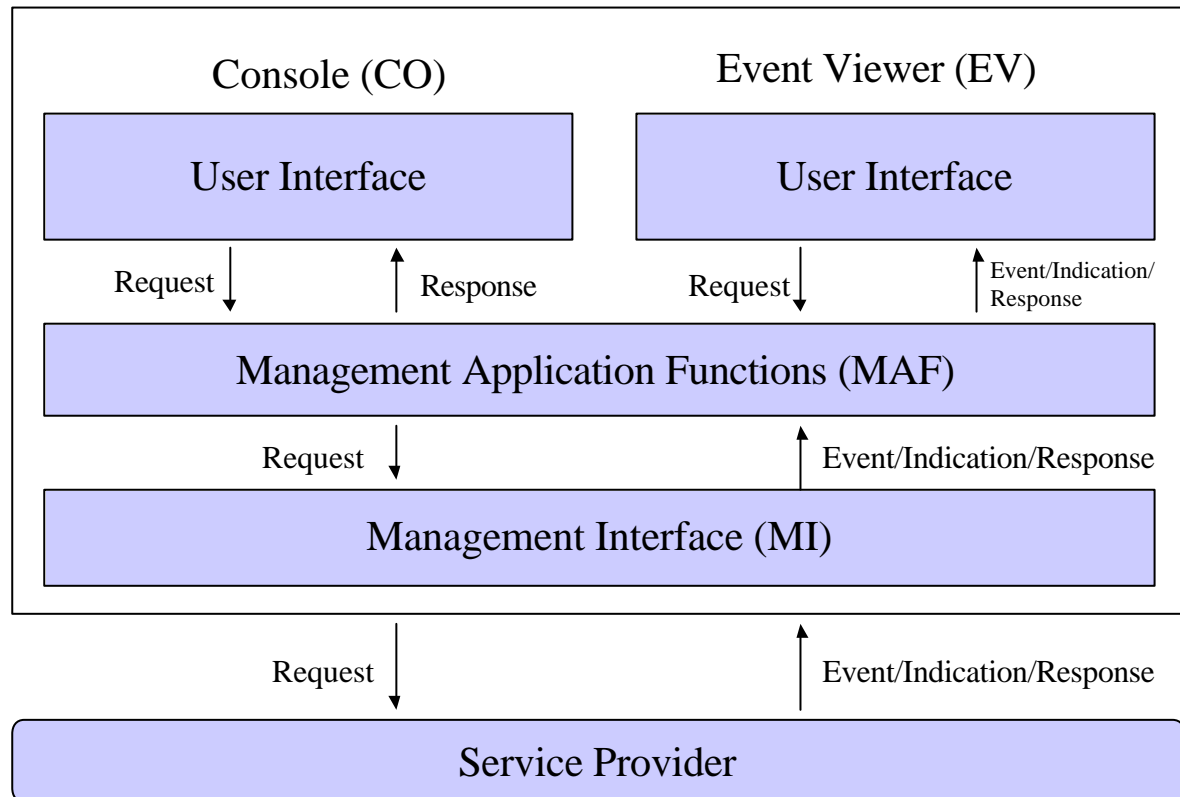
- SP
  - MI
  - Core
  - CI



(3)

- MA
  - UI
  - MAF
  - MI

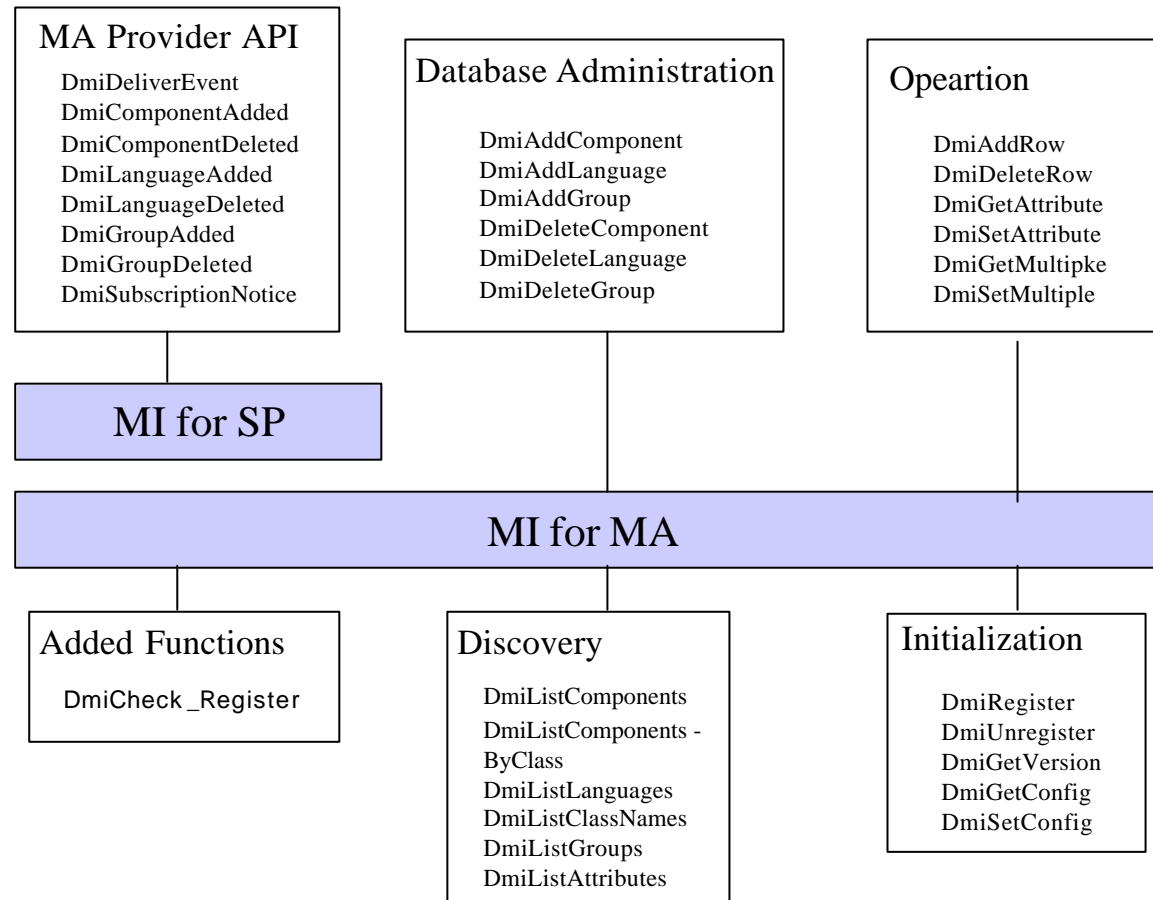
Management Application (MA)



- - OS: Win95 and NT
  - : Microsoft Visual C++
  - Language: C and C++
    - RPC가 C code C C++

# - SP (1)

- MI
  - DCE, ONC or TI RPC
  - Microsoft RPC (DCE RPC )



# - SP (2)

- CI

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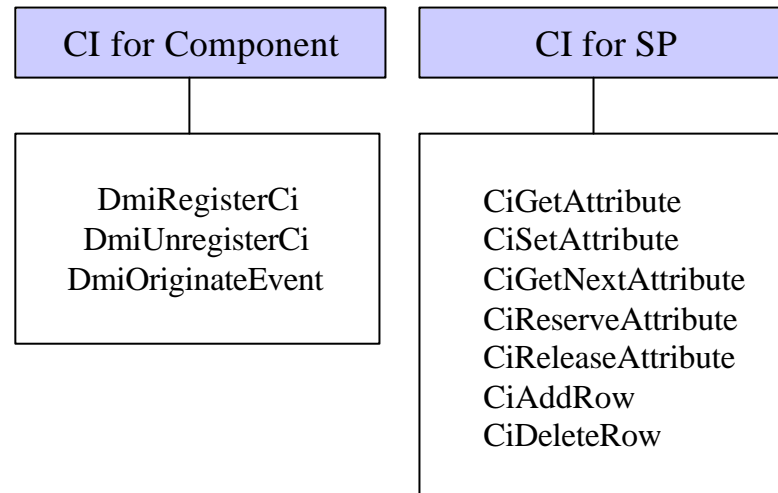
- Microsoft RPC

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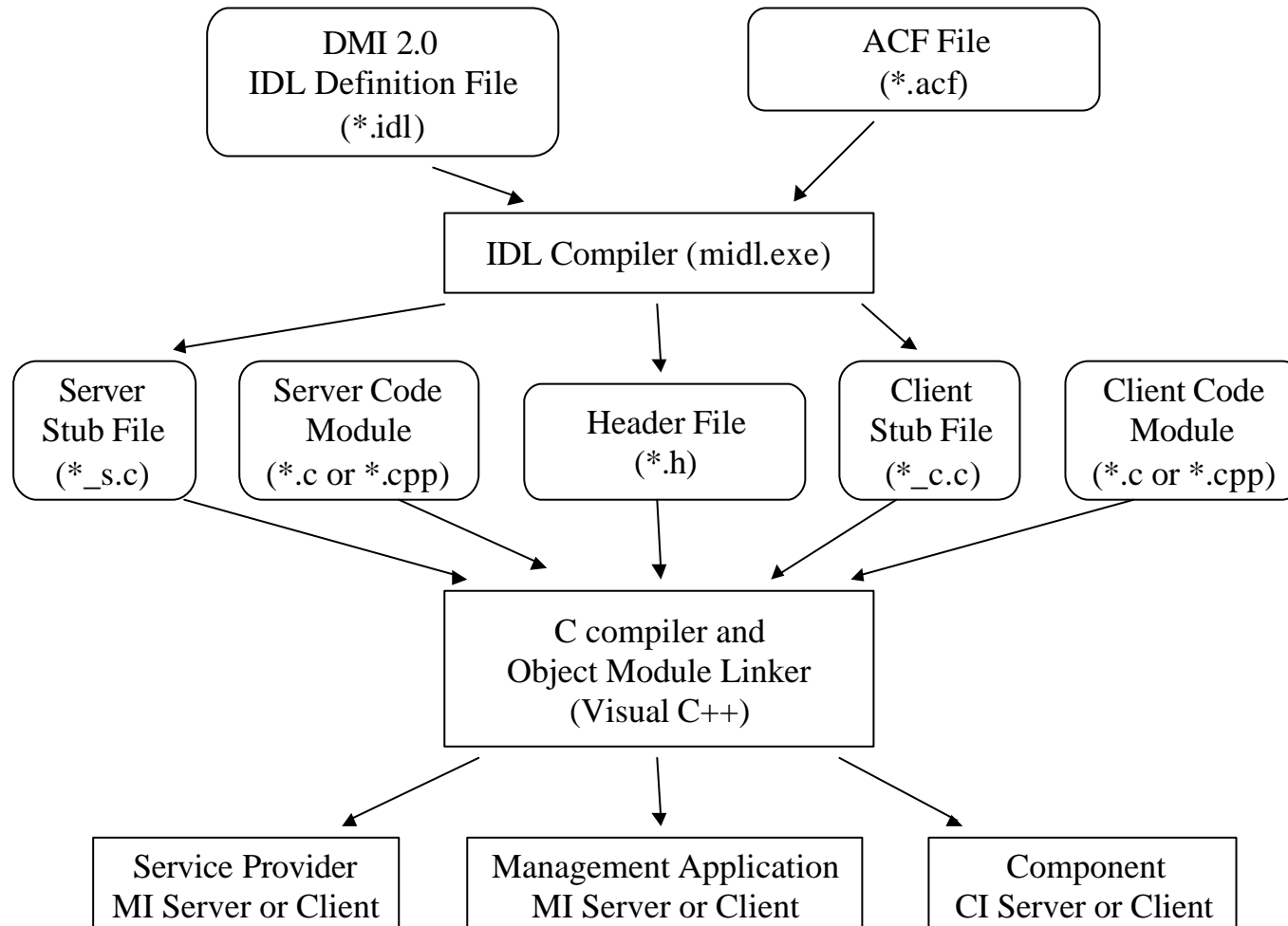
- Remote Component  
가

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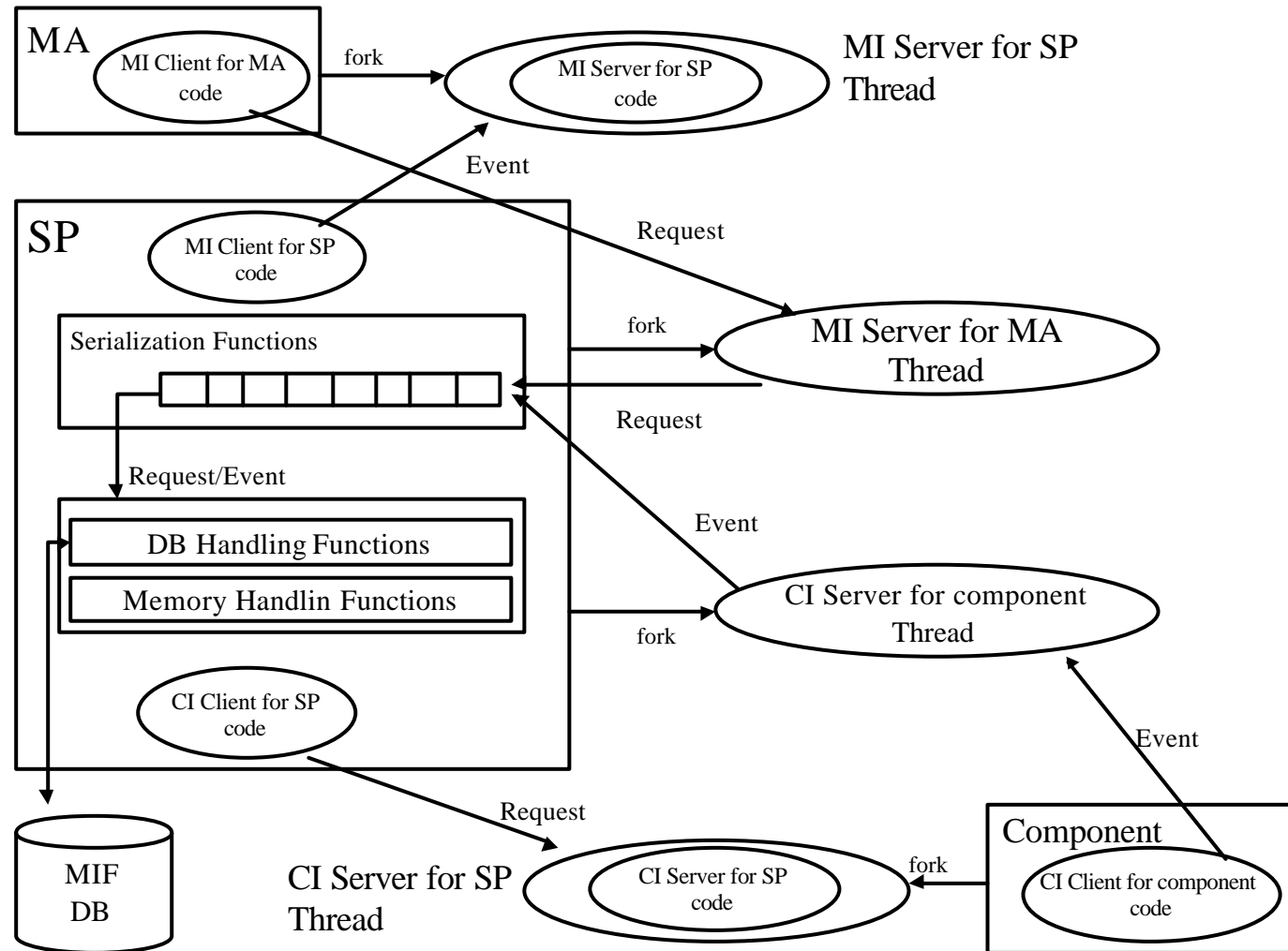


# RPC

# code



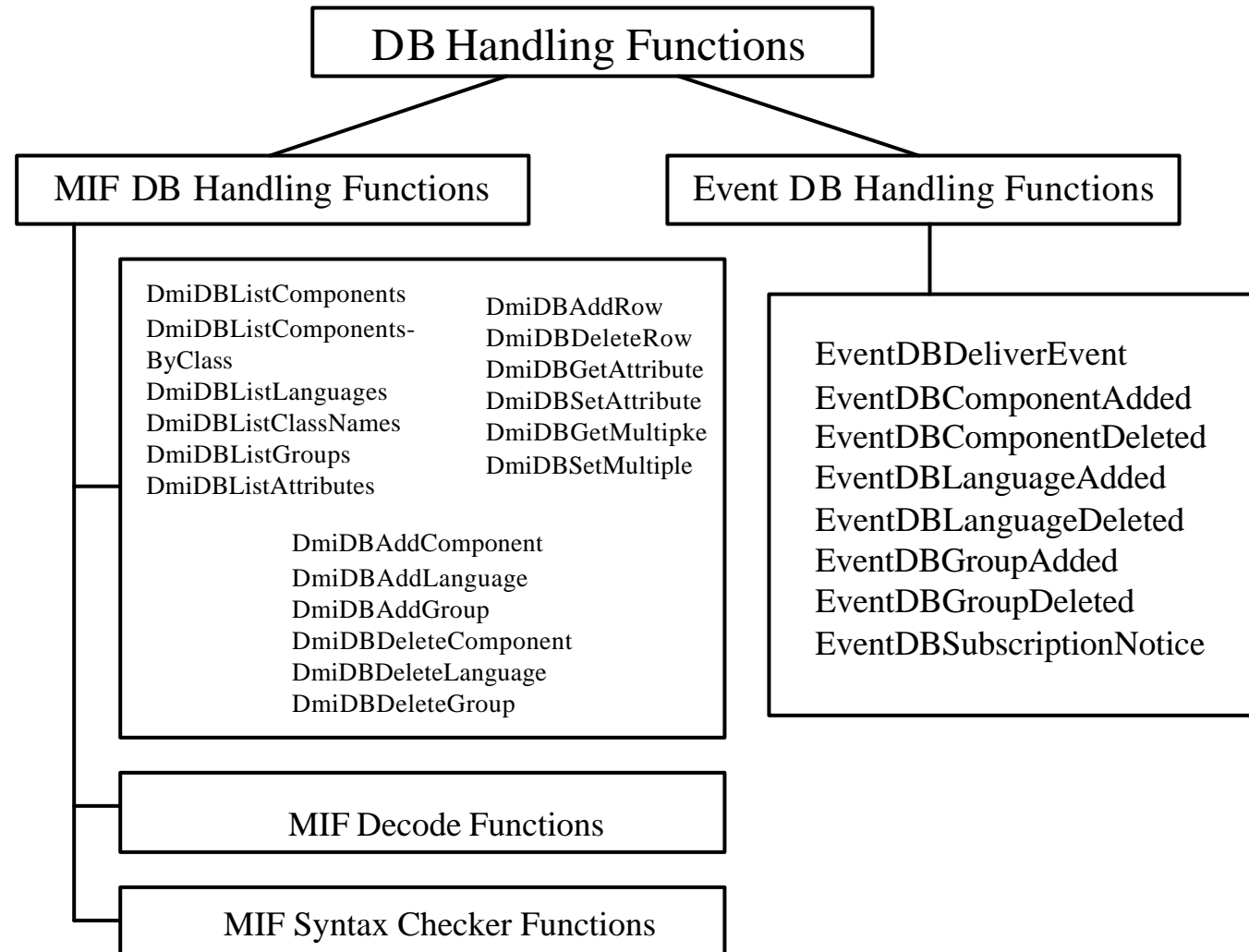
# - SP (3)



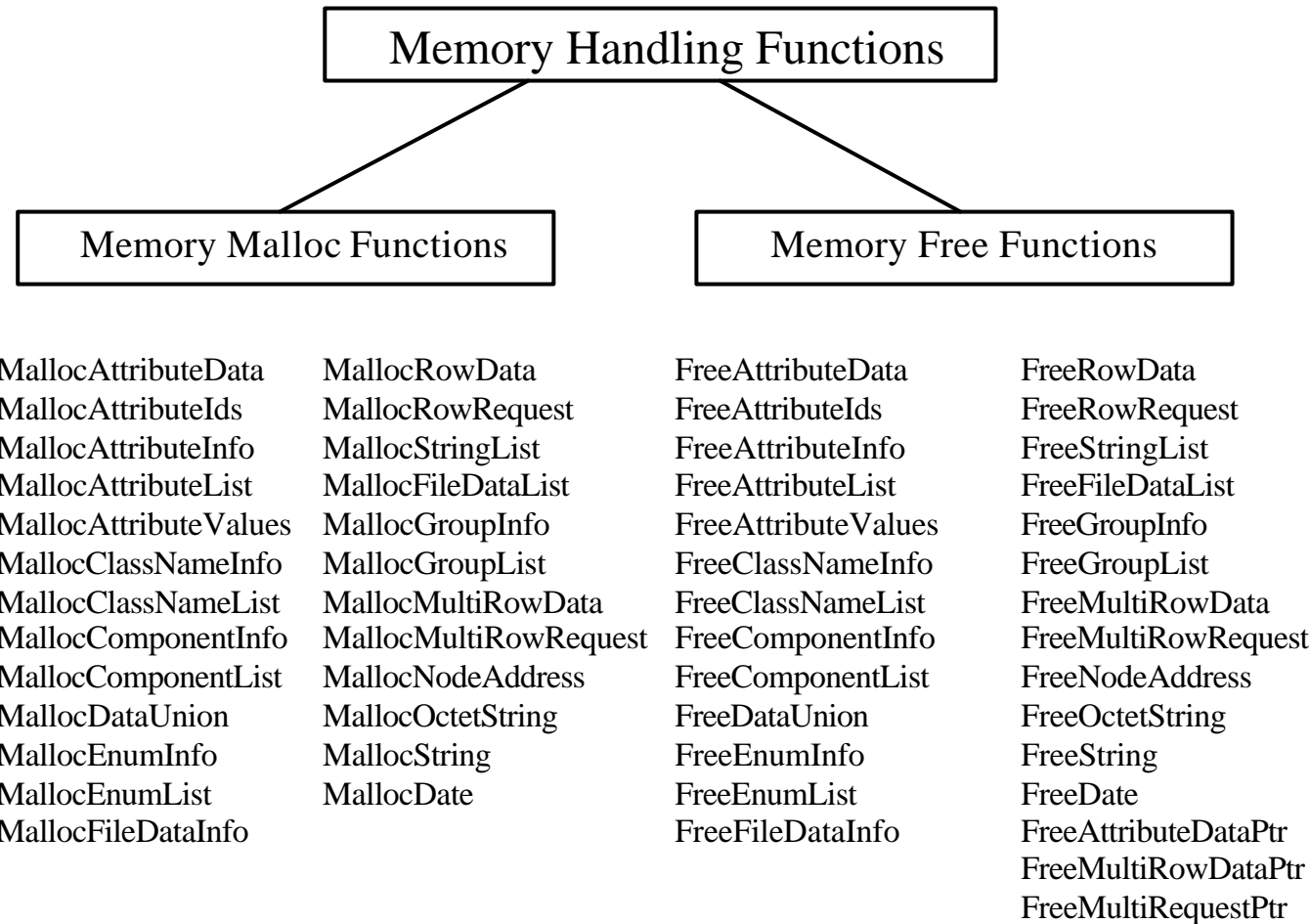


# - SP (4)

DB

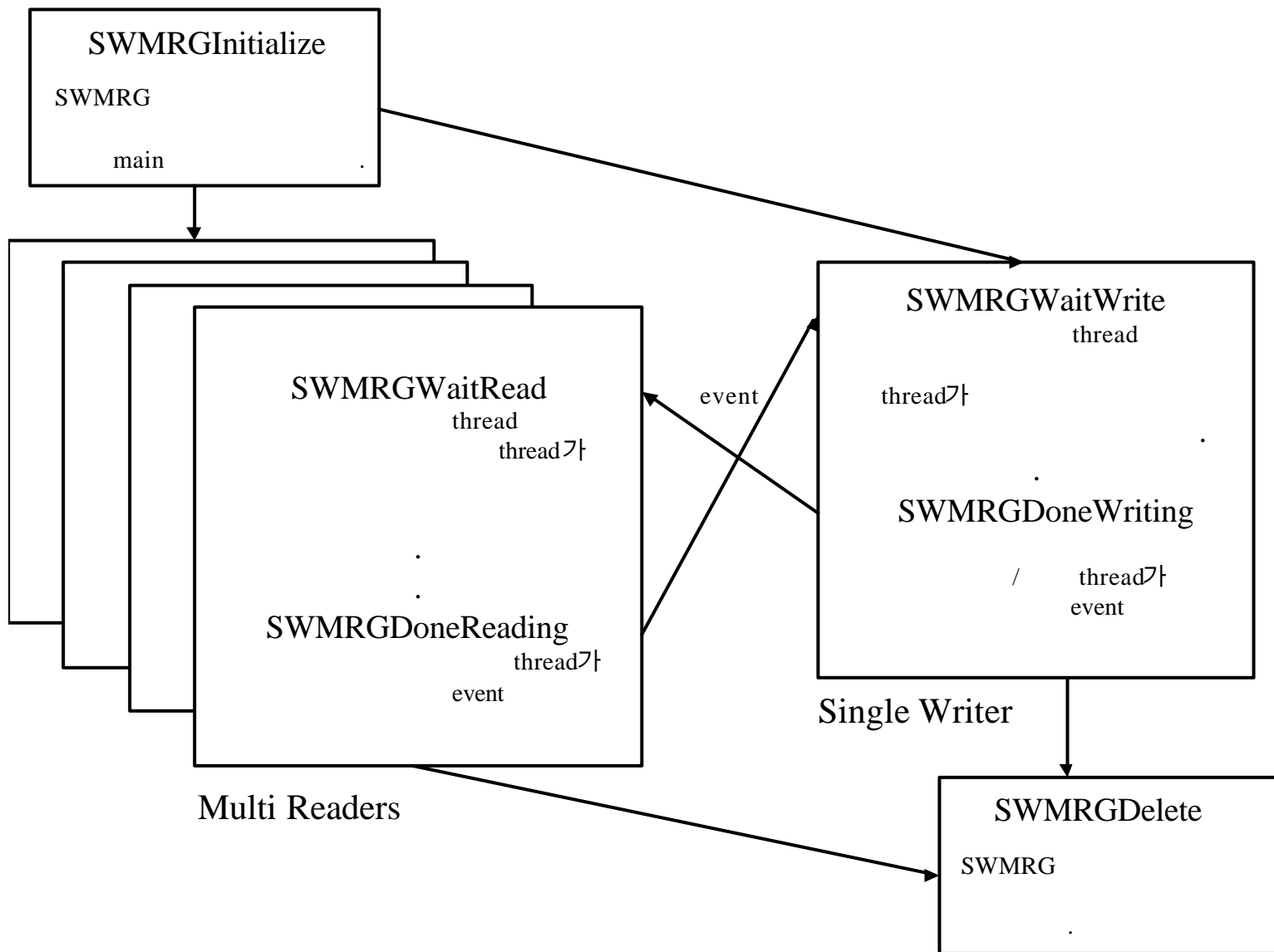


# - SP (5)

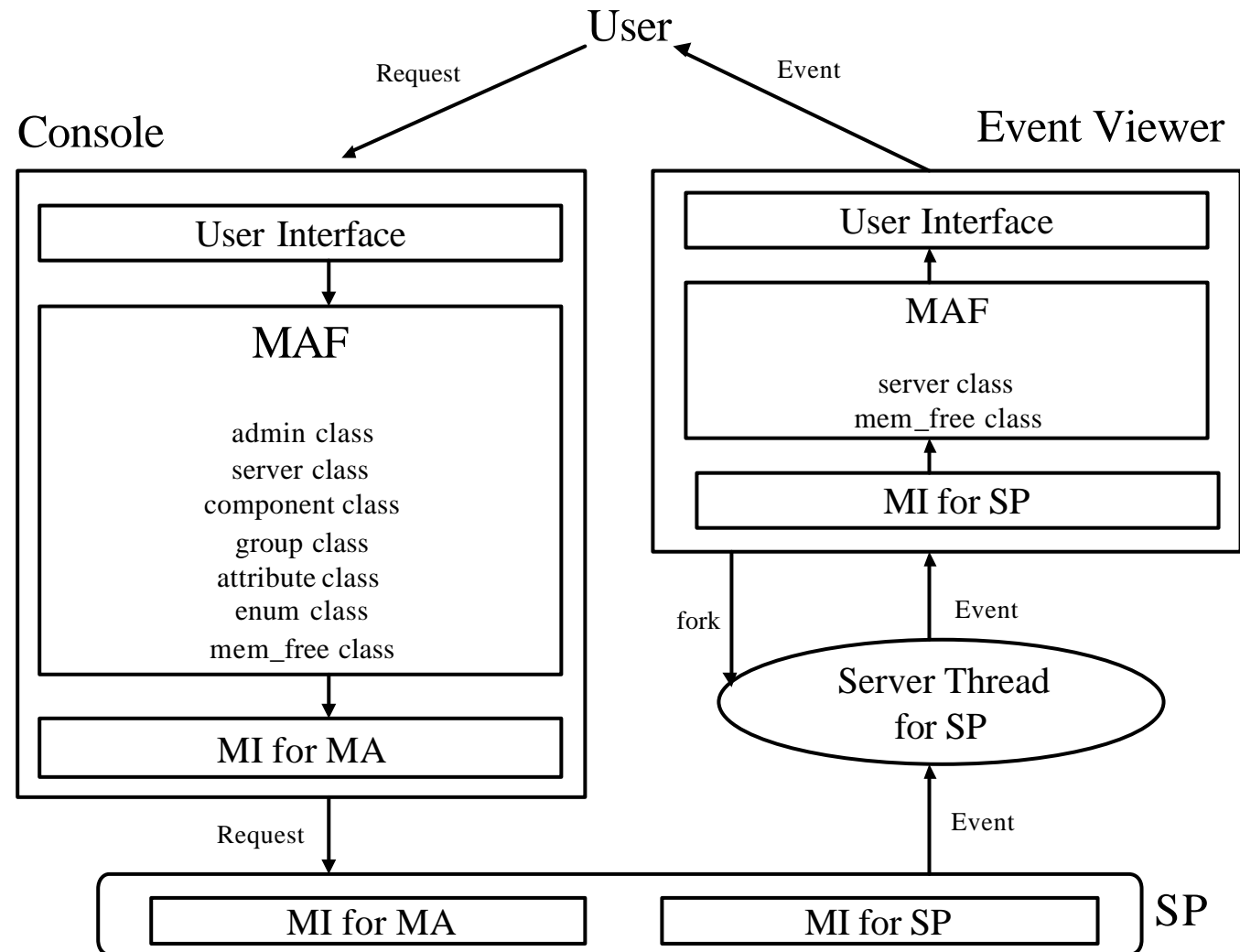


## - SP (6)

- Serialization
  - 
  - Single-writer/Multiple-reader Guard (SWMRG)



# - MA (1)



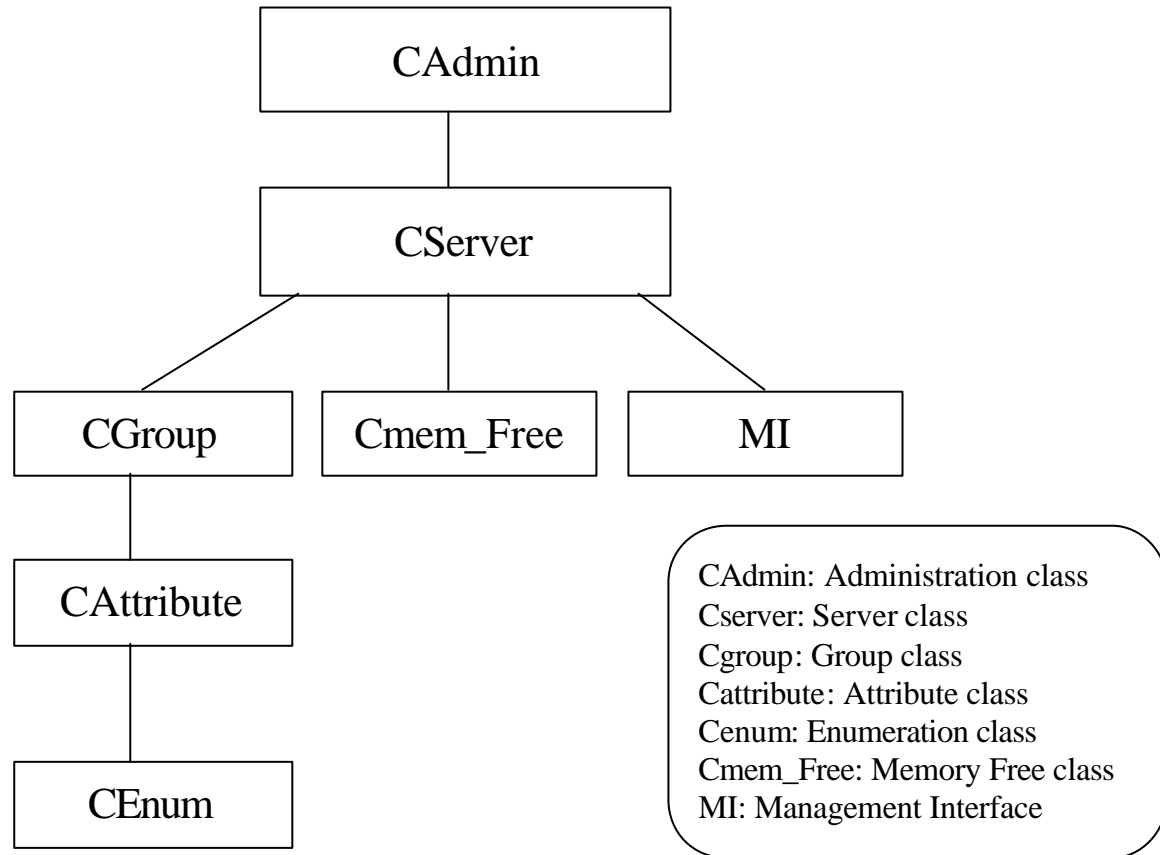
# - MA (2)

- UI
  - Microsoft Foundation Class (MFC)
  - MS-Windows



# - MA (3)

- MAF
  - C++



# Server

```
class CServer
{
public:
    CServer();
    ~CServer();
    CComponent*      pComponent;
    DMI_Mem_Free      Dmi_Free;
    int               Server_Number_Of_Components;
protected:
    unsigned char*    pszNetworkAddress;
    char*             DMI_Server_Description;
public:
    char*             Get_Server_Description ();
    int               Disconnect_From_Server ();
    int               Connect_To_Server(char *addr);

    int Verify_DMI_Agent();
    int Get_Component();
    int Get_Group(int compld);
    int Get_Attribute_Structure(int compld,int grpId);
    int Get_Table_Attributes( int compld, int grpId);
    int Set_Table_Attributes(int compld, int grpId, int row);
    int Change_Password(char* id, char* old_pass, char* new_pass);
    int Check_Password_Register (char* id, char* passwd);

    int OnCListAttr(int compld, int grpId, DmiAttributeList_t **reply);
    int OnCListComp(DmiComponentList_t** reply);
    int OnCListGroup(int compld, DmiGroupList_t** reply);

    int OnDAddComp(char *name, char *body, int type, int *cid);
    int OnDAddGroup(char *name, char *body, int type, int cid, int* gid);
    int OnDDelComp(int cid);
    int OnDDelGroup(int cid, int gid);
    int OnOAddRow(int cid, int gid, DmiRowData_t* rowData);
    int OnODelRow(int cid, int gid, DmiRowData_t* rowData);

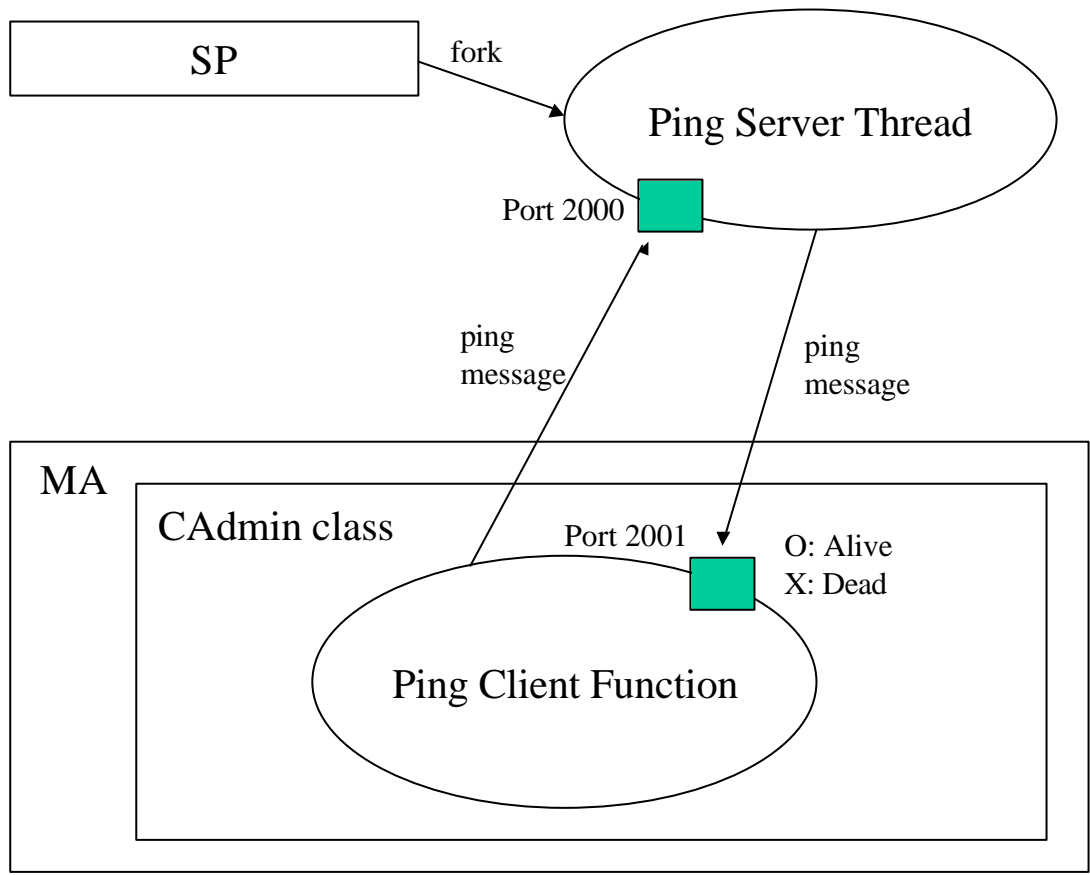
    int OnOGetAttr( int cid, int gid, int aid);
    int OnOGetMulti(DmiMultiRowRequest_t* request,
                   DmiMultiRowData_t** rowData);
    int OnOSetAttr( int cid, int gid, int aid);
    int OnOSetMulti(DmiMultiRowData_t* rowData);
};
```



(1)

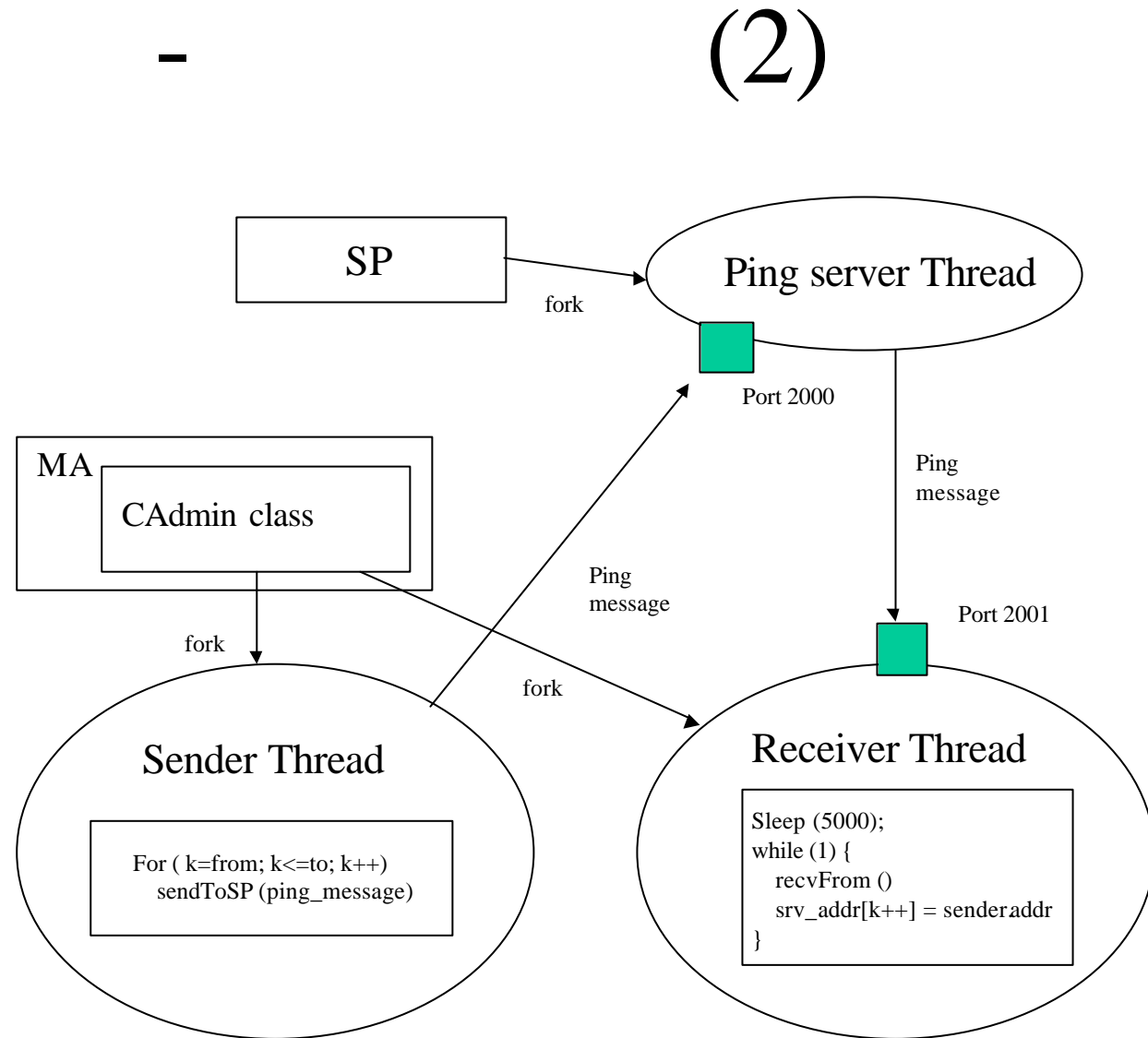
- Ping

SP가



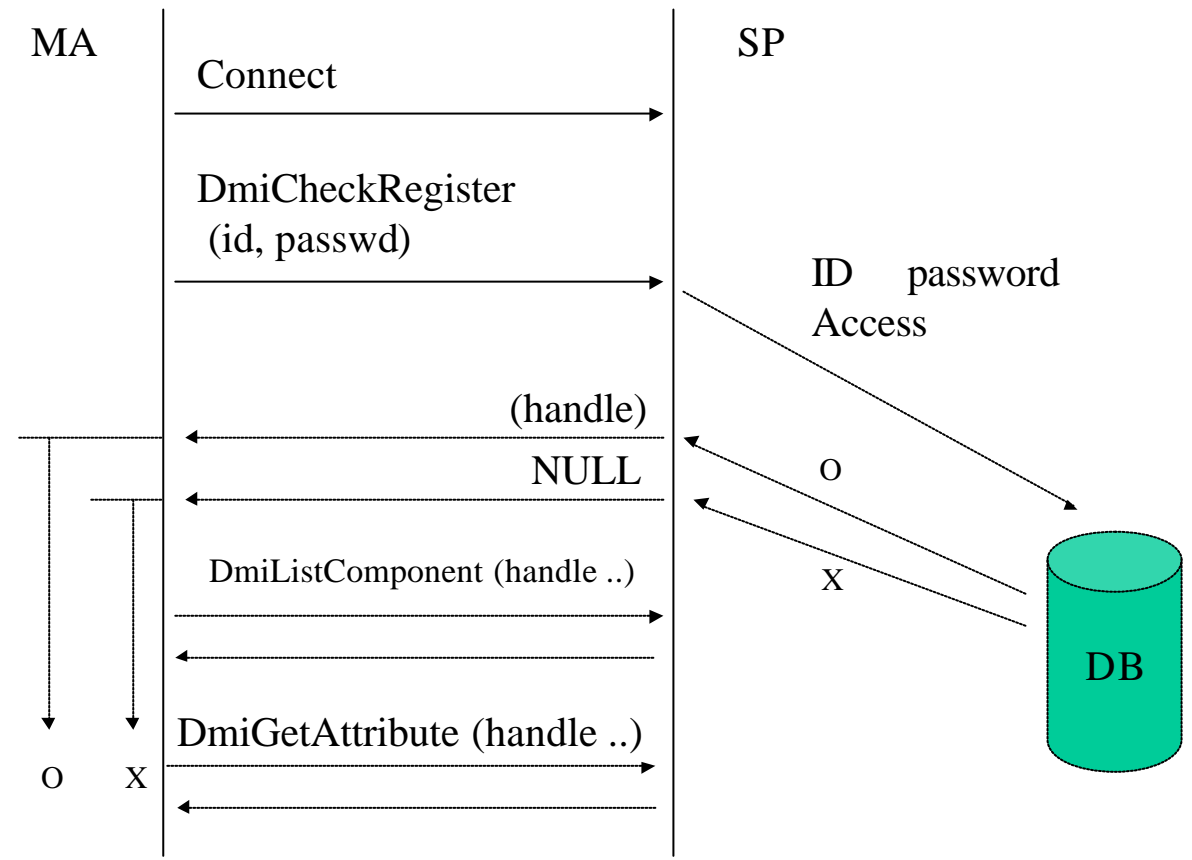
- Auto-discovery

SP가



(3)

가  
SP



(4)

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- SP event indication

- SMTP 25 SMTP ,

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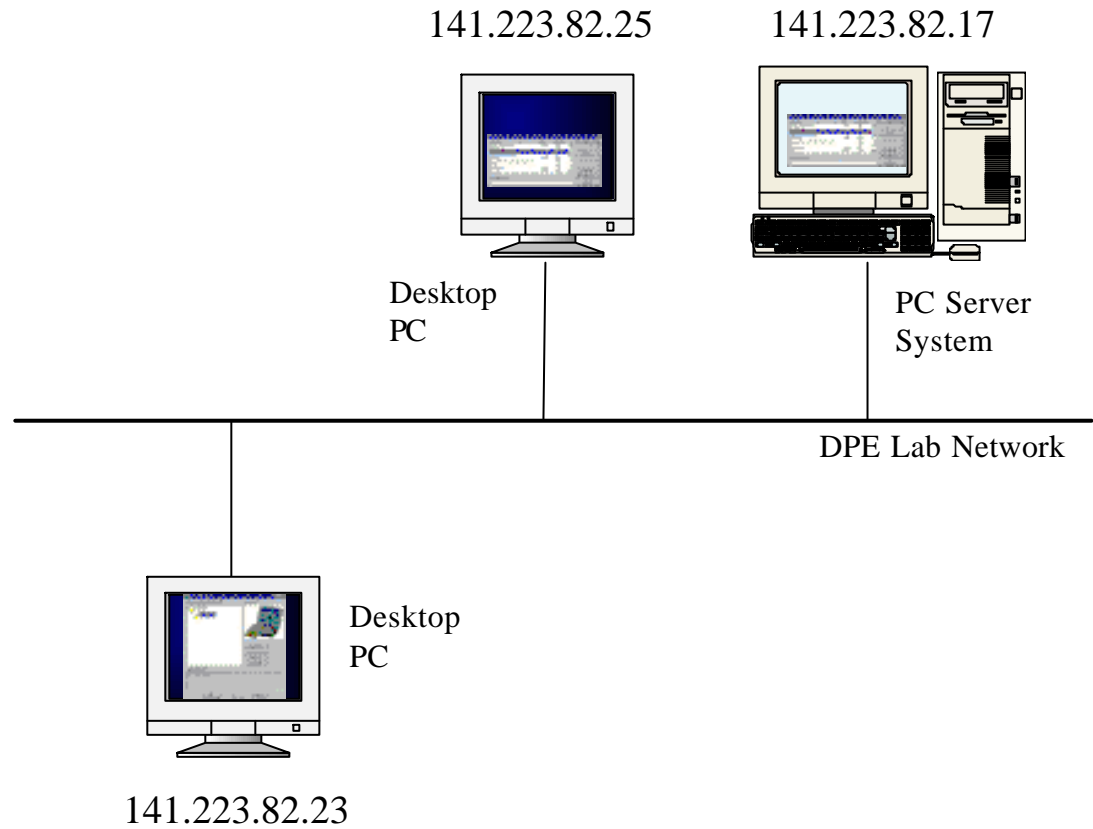
- SP event indication  
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(1)



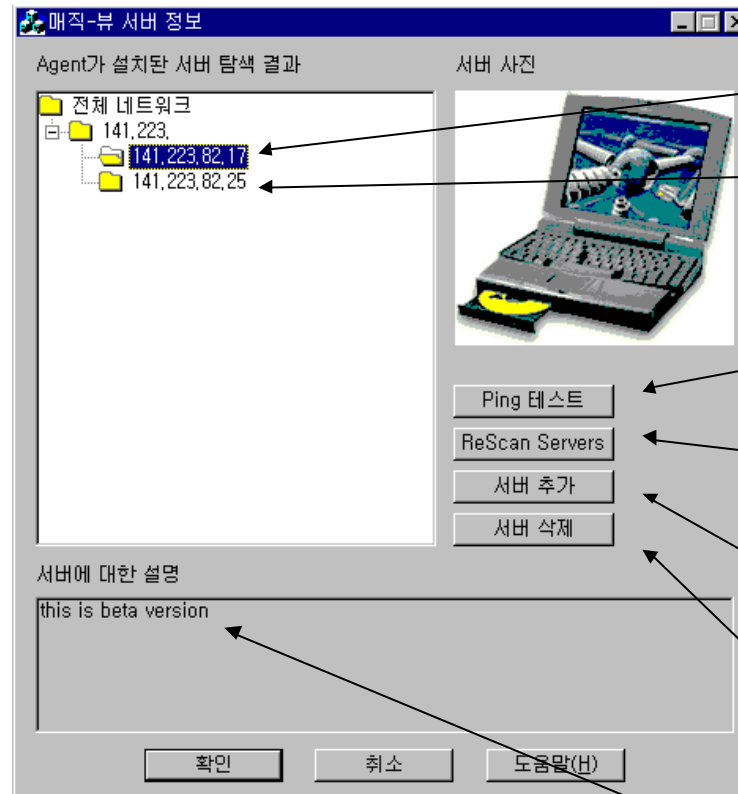
- DPE Lab
- NT  
win95



(2)

- Console

— SP가



PC Server (NT)

Desktop PC (Win 95)

agent

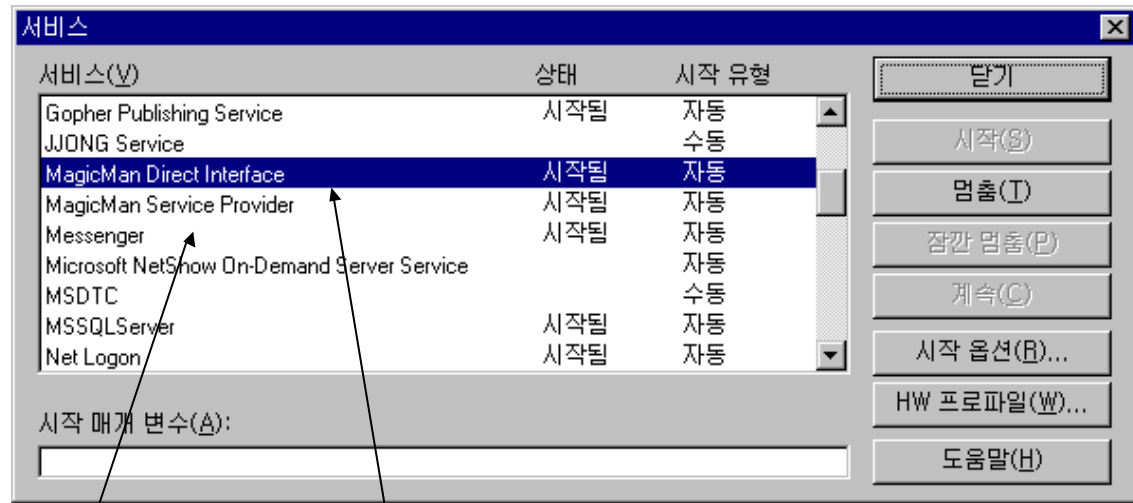
agent

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(3)

- SP  
– NT



Service Provider

Component  
Instrumentation code

Windows  
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(4)

- Console

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The screenshot shows a Windows NT console window titled '141.223.82.25의 정보' (Information for 141.223.82.25). The console is divided into two main panes. The left pane shows a tree view of system information for '141.223.82.17의 정보' (Information for 141.223.82.17), with '시스템 기본 정보' (System Basic Information) selected. The right pane displays the details for the selected category, including:

- 서버 시스템 정보 (Server System Information):**
  - 제작회사 (Manufacturer): Samsung Electronics
  - 제품 기종 (Product Name): MagicPower Pro
  - 모델 (Model): 620(200)
  - 일련 번호 (Serial Number):
  - 제작일 (Date of Manufacture): 1997년 11월 08일, 10시 19분 34초
  - 동작 현황 (Status): This component exists, and is functioning correctly.
- 시스템 일반 정보 (System General Information):**
  - 시스템명 (System Name): SUMJIN
  - 위치 (Location):
  - 관리자 정보 (Administrator Information):
    - 성명 (Name):
    - 연락처/전화번호 (Contact/Phone Number):
  - 부팅 시간 (Boot Time): 1997년 11월 08일, 10시 19분 28초
  - 시스템 시간 (System Time): 1997년 11월 08일, 10시 19분 35초
- 운영체제 - 1 (Operating System - 1):**
  - 운영체제 이름 (Operating System Name): Windows\_NT
  - 운영체제 버전 (Operating System Version): Version 4,0,1381
  - 초기 선택 (Initial Selection): True
  - 부팅 매체 (Boot Device): Hard Disk
  - 참고사항 (Remarks): This operating system is Windows\_NT Version 4,0,1381.

At the bottom of the console window are buttons for '확인' (OK), '취소' (Cancel), '적용(A)' (Apply), and '도움말' (Help). Below the console window, two arrows point to the IP addresses '141.223.82.25' and '141.223.82.17'.



(5)

# Console

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가 4

가 1

(6)

- Event Viewer
  - SP event indication

Date	Time	Address	Generation Group	Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type
1997/11/08	10:16:51	168,219,248,42	Windows NT Event Log Event	Event Log Error Type

(7)

- Event
  - SP



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$$- 31931 \text{ (SP)} + 30889 \text{ (CO)} + 14386 \text{ (EV)} = 77206$$

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, (CPU, I/O , ) ,  
가

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PC PC, NetPC  
가

- DMI Ver 3.0
- Web
- Web-based Enterprise Management (WBEM)

