

Day1 and2 - SAP Sybase ASE Session



Training Agenda

	Sr No	Topic details
Day 1 and 2	1	Introduction to ASE
	2	ASE server components
	3	ASE multiple databases
	4	System tables & procedures
	5	ASE directory structure
	6	Starting & stopping server
	7	ASE configuration file
		Lab exercise
Day 3 and 4	8	ASE memory components
	9	Cache types and usage
	10	ASE devices
	11	Database and options
	12	Manage database in ASE
	13	Administering system roles and logins
	14	Managing database access and users
	15	Implementing object permissions, groups and roles
	16	Database Backup & recovery
		Lab exercise
Day 5 and 6	17	Sybase utilities
	18	Monitoring ASE using dbacockpit
	19	Maintenance tasks and commands
	20	Basic understanding of sp_sysmon
	21	Sybase SP patching
		Lab exercise

SAP Sybase ASE



What is Sybase ASE?

- Adaptive Server Enterprise (ASE) is a relational database management system (RDBMS) from Sybase, Inc. that runs on Linux, Windows and other Unix -based operating systems. ASE evolved from a program originally called Sybase SQL Server, which was first released in the year1980s.
- Sybase databases are developed to accommodate business needs regardless of size. The main focus of the database is Web based to allow portability, integration, manageability and availability of applications as their dedication to businesses success.
- Sybase ASE / SQL Server is an industry high strength performance database. solution used by some of the largest corporations worldwide. It is also one of the easiest database servers to learn and to work with. It has a wide range of extremely advanced options, probably the most advanced replication in the market, and a set of various add-on products that will even support opaque access of data from competing products.



History of Sybase ASE

History:

- Company founded in 1984, Corporation located in Emeryville, Ca.

Sybase is primarily a UNIX vendor and is recognized as one the largest providers of database software.

Introduced the SQL server in 1987 as a client server solution that was as designed to separate the client and server functionality

ASE is designed primarily for use on high-end servers and, according to Sybase, is especially good at handling online transaction processing (OLTP) workload . ASE Version 15, released in September 2005, includes cursor scrolling, messaging services, automatic updating, specialized job wizards, very large server support (VLSS), native storage, processing of XML documents, enhanced encryption

Prior to 1994, Sybase SQL Server evolved along the same lines as Microsoft SQL Server . Then Microsoft bought a copy of the Sybase SQL server source code and began engineering its product along a different line. A couple of years later, Sybase renamed its product ASE (to distinguish it from the Microsoft product) and released ASE Version 11.5.



Sybase ASE Editions

Editions:

SAP offers various editions of Adaptive Server Enterprise:

- Enterprise Edition – has no limit on scalability and can run all available options that can be purchased separately.
- Small Business Edition – has limited scalability and does not have options that can be purchased separately.
- Developer Edition – has limited scalability and includes many of the options that are included in the Enterprise Edition.
- Express Edition - has limited scalability and does not have options that can be purchased separately.
- The Express Edition is available on Linux x86, Linux x64 and Linux OpenPower.



Sybase ASE Editions

Versions:

- SQL Server 4.2 was released in 1992
- Sybase SQL Server 11.0 was released in 1995
- ASE 11.9.2 was released in 1998
- ASE 12.0 was released in 1999
- ASE 12.5 was released in 2001
- ASE 15.0 was released in 2005
- ASE 15.5 was released in 2010
- ASE 15.7 was released in 2011
- ASE 16 was released in 2014

Types:

- Sybase SQL
- Sybase ASE
- Sybase IQ
- Sybase Replication server

ASE™ 15.7 ARCHITECTURE

* indicates optional setup





SAP Sybase ASE - Architecture

A single stand alone installation of ASE typically comprises one "dataserver" and one corresponding "backup server". In multi server installation many dataservers can share one single backup server though. A dataserver consists of system databases and user's databases. Minimum system databases that are mandatory for normal working of dataserver are 'master', 'tempdb', 'model', 'sybsystemdb' and 'sybsystemprocs'. ASE is a single process multithreaded dataserver application, it means when server is up and running there is one single OS process per engine.

Components:

Sybase Engine: Responsible for starting Sybase services and allocating memory based on the configured parameter. Controller by parameter max online engines" and "number of engines at startup".

Shared Memory : Allocated by Sybase Engine for storing data, procedures and logs temporarily.

Procedure Cache: Stored procedures ex: sp_helpdevice, sp_*

Data Cache: Storing transaction Data

Log cache: Storing transaction logs

ASE Job scheduler: Responsible for scheduling / managing all Sybase jobs

License Server: Does the License heart beat check and validity

Backup Server: Responsible for DB & Log backups

Databases : We have 7 databases created during install along with named user databases.

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Databases and use:

Master –master database holds critical system related information that includes, logins, passwords, and dataserver configuration parameters.

Model – model database provides a template, or prototype, for new user databases. Each time a user enters the create database command, Adaptive Server makes a copy of the model database and extends the new database to the size specified by the create database command.

Saptempdb - Saptempdb database is used for storing temporary data

Saptools - Saptools is used to maintain the tools required for DB administration

Sybmgmtdb - sybmgtmdb database stores jobs, schedules, scheduled jobs information, and data the internal Job Scheduler task needs for processing. sybmgtmdb also maintains the output and results from these executed tasks, It is also called job scheduler database

Sybsystemdb – sybsystemdb database stores information about distributed transactions. ASE provide transaction coordination services for transactions that are propagated to remote servers using remote procedure calls (RPCs) or Component Integration System (CIS).

Sybsystemprocs – sybsystemprocs consists of system supplied stored procedures that queries system tables and manipulates data in them.



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Databases and use:

Sybase DataFiles: Physical path

\\Sybase\<SID>\sapdata_1 , 2... - Named DB

\\Sybase\<SID>\sapdiag - saptools

\\Sybase\<SID>\subsystem - master, sybsystemdb, sybsystemprocs & Sybmgmtdb

\\sybase\<SID>\sybtemp – TempDB data files

Sybase LogFiles: Physical path

\\Sybase\<SID>\saplog_1

\\sybase\<SID>\sapdiag\saptools_data_001



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How is Sybase DB different & advantages over other DBs

Sybase ASE 15's total cost of ownership (TCO) compared to Oracle., one requires 2.5 Oracle DBAs to provide the same level of service as a single Sybase DBA.

- Sybase is fairly modular and has a simple syntax. Contrast this with Oracle where, in most cases, you require a third-party product to allow the DBA to reduce his/her workload.
- Lower operational costs with a highly-efficient database management system
Maintain the performance and availability you need for extreme transaction processing
- Data compression: Enables the use of less storage space for the same amount of data, reduces cache memory consumption and improves performance with lower I/O demands by compressing regular and large object data.

Security and directory services: Provides lightweight directory services and network-based authentication and encryption using SSL and Kerberos.



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How is Sybase DB different & advantages over other DBs

- Partitions: Enables semantic partitioning for table row data.
- Encrypted columns: Increases security parameters and allows for addition of data types.
- Tivoli Storage Manager: Enables the database to back up and restore operations to IBM Tivoli Storage Manager.
- In-memory database: Provides zero-disk-footprint in-memory database support that is fully integrated with SAP Sybase ASE for high-performance transactional applications. Relaxed durability properties provide performance enhancements to disk-resident databases.
- SAP Sybase ASE editions and optional features are unlocked by SySAM licenses. See the SAP Sybase Software Asset Management Users Guide.

Storage and Design Difference:

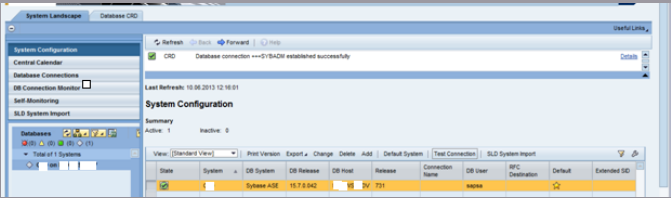
	Sybase	DB2	Oracle
Storage	Devices	Containers	Tablespaces
Data Blocks	Pages	Pages	Extents
Control data	Stored in DB	Stored in DB	File system
Config Data	File System	DB	DB



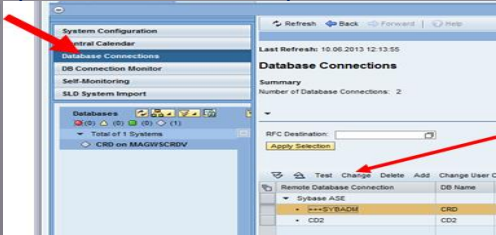
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Go to Transaction DBACOCKPIT

Self System will be created automatically and visible under system connections.



If you have connectivity issue and want to update sapsa Password. Can be done by clicking on the 'Test' button in the 'Database Connections' table.





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DBACOCKPIT Dashboard

Welcome, BASIS ACCOUNT CAPGEMINI

Personalize Logout SQL Error Help

System Landscape Database ECD

Performance Space Backup and Recovery Configuration Jobs Diagnostics

Refresh Back Forward Help

Dashboard

System Activity

System Utilization

System Waits

Spinlock Contention

Process Monitor

Thread Activity

Temporary Database Activity

Resource Utilization

Resource Limit Violations

IO

Memory Pools

SQL Statements

Performance Warehouse

Databases

(1) (0) (0) (1)

CSD on MAGWSCSDV

ECD on MAGWSECDV

DB Server: MAGWSECDV DB Release: 15.7.0.130 Started: 05/19/2015 11:03:16 Uptime: 20 Days Last Refresh: 06/09/2015 08:16:11

Dashboard

Instance Overview

ABAP Dictionary Consistency

ASE Error Log

Data Caches

Connections

Lock Manager

Space Usage

Top Tables by Size

Tables Missing: 0

Tables Inconsistent: 0

Tables Unknown: 0

Indexes Missing: 0

Indexes Inconsistent: 0

Indexes Unknown: 0

Missing Views: 0

Views Inconsistent: 0

Views Unknown: 0

Time

Message Type

No errors occurred in the past 12 hours

Caches

Pools

Total Size

Def Mixed: 1 1 1,024 MB

Log-Only: 0 0 0 MB

In-Memory: 0 0 0 MB

Largest Cache: default data cache 1,024 MB

Worst Hit Ratio*: default data cache 99.47 %

Most Active*: default data cache 861 I/Os/sec

Configured: 500

Size: 5,000,000 / Held: 0

Database ECD

Data

Total: 169GB / Free: 67GB

Table

Size [MB]

ECD SAPSR3.REP... 15,438



SAP Sybase ASE

ATM & Collector configuration for all in DBACOCKPIT

The SAP DBA Cockpit for Sybase ASE introduces a flexible framework that allows you to set up and control automatic table maintenance

Considering the thousands of tables and indexes a typical SAP system creates on the database, this solution dramatically reduces manual administrative activities and thus significantly reduces the TCO of the SAP on Sybase ASE.

DBA Cockpit

Switch to SAPGUI ☐ Start in Web Browser

Welcome, CAPCRP

Personalize Logout SQL E

System Landscape

Database CRP

Performance Space Configuration Jobs Diagnostics Favorites

File Systems

Devices

Databases

Server Configuration

Data Caches

ATM Configuration

Data Collection Framework

Collector Configuration

Template Definition

DB Server: MAGVSCRPR DB Release: 15.7.0.042 Started: 04.08.2013 10:43:11 Uptime: 20 Hours 14 Minutes Last Refresh: 05.08.2013 06:57:18

Collector Configuration

Back-end automatic update is enabled. [Change](#)

Task Scheduler: ASE Job Scheduler

Message Level: Error [Change](#)

Primary Owner: CRP: SAP NetWeaver (07.31.0005)

Supplementary Owner: None

Ownership: Single

Template: SAP Default (*)

Implement Template

Save As New Template

Repair All Collectors

Prune All Data

Prune All Logs

Data Collector	Type	Setup	Collection Interval	Available Days	Days Kept in History	Size on Disk (MB)	Errors	Warnings	Owner	Version
----------------	------	-------	---------------------	----------------	----------------------	-------------------	--------	----------	-------	---------

Implement Template

Data Collector Setup Templates

Name

SAP Default (*)

SAP Detailed

Implement Cancel



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ATM & Collector configuration for all in DRACOCKBIT

Template: SAP Default (*)							
Implement Template Save As New Template Repair All Prune All Data Prune All Logs							
Object	Object Type	Setup	Collection Interval	Available Days	Days Kept in History	Size on Disk (MB)	Errors
Framework	Framework Cleanup (Logs/Statistics)	▲	Daily	14	14	9	0
Configuration Check	SAP Admin Procedure	●					0
Database Dump	SAP Admin Procedure	●					0
Reorganisation	SAP Admin Procedure	●					0
Transaction Dump	SAP Admin Procedure	●					0
Update Statistics	SAP Admin Procedure	●					0
ASE Instance	SAP Data Collection	▲	15 Minutes	13	14	1	2,422
ASE Resources	SAP Data Collection	●	1 Hour	13	14	2	0
Data Cache Objects	SAP Data Collection	●	1 Hour	12	14	6	0
Data Cache Usage	SAP Data Collection	●	1 Hour	14	14	1	0
Deadlocks and Lock-Timeouts	SAP Data Collection	●	15 Minutes	0	14	1	0
Devices	SAP Data Collection	●	1 Hour	187	360	52	0

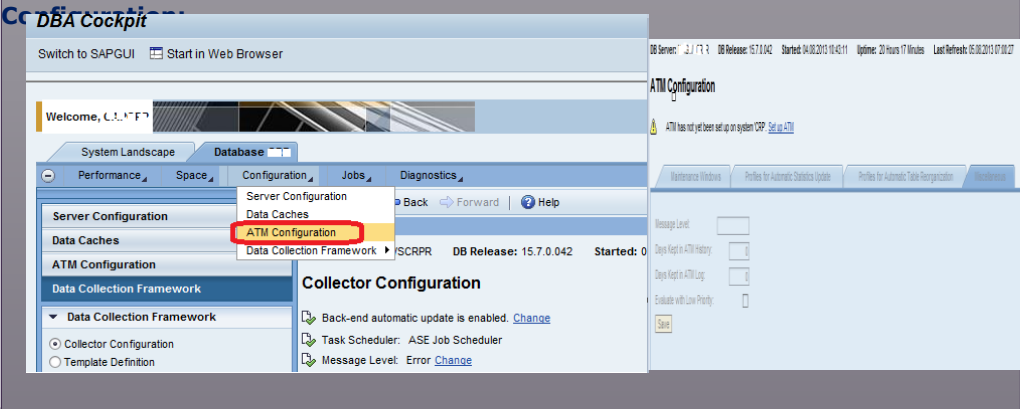
Help Link:

http://help.sap.com/saphelp_nw73/helpdata/en/e5/af5bad9e3d459f9f35560eab1098eb/content.htm



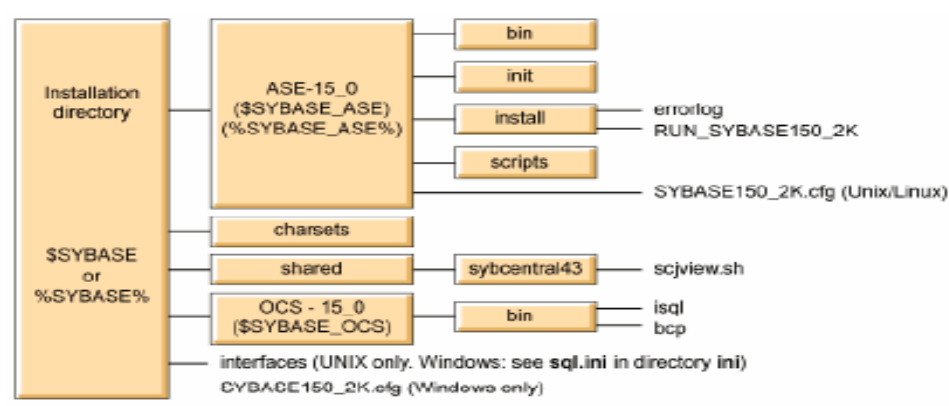
ATM configuration

Sophisticated business applications like the SAP Business Suite execute millions of DML statements a day. In a data warehouse scenario, for example, reports are constantly being generated to determine whether business targets are being met while the background tasks are executed to load collected data into data cubes or to delete obsolete data. This constant manipulation of data sets causes data fragmentation, leaves non-reusable free space behind, and, finally, invalidates optimizer statistics, which can end up in poor query performance.







Overview of ASE 15.0 Directory Structure



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Starting and stopping of Sybase Database

Sybase DB is stopped/Stopped by stopping/Startting sybase DB services

Sybase SQLServer _<SID>

Sybase BCKServer _<SID>_BS

Sybase BCKServer _ECS_BS	Started	Manual
Sybase SQLServer _ECS	Started	Manual

Commands to shutdown DB

Syntax

shutdown [srvname] [with {wait [= "hh:mm:ss"] | nowait}]

Shutdown : Shuts down the Adaptive Server from which the shutdown command is issued

shutdown with nowait: Shuts down the Adaptive Server immediately

shutdown cluster : Shuts down the current cluster

shutdown ase1 :Shuts down the instance "ase1", but leaves the cluster running

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Taking DB and Log backups

Commands to take DB and Log backups

DB backup : dump database <SID> to 'PATH\file.dmp' with compression=101

Log Backup : dump transaction <SID> to 'PATH\file.dmp' with compression=101



The UNIX RUNSERVER File

- Used to start a server
 - Located in the ASE-15_0/install directory
 - Contains the dataserver command used to start the server
- It includes the following information:
 - Server name
 - Location of the master device
 - Location of the errorlog file
 - Location of configuration file
 - Location of the interfaces file
- Server startup behavior can be changed by modifying the RUNSERVER file



Sample UNIX RUNSERVER File

```
#!/bin/sh
#
# ASE page size (KB): 2K
# Master device path: /home/sybase/ASE-15_0/devices/2Kmaster.dat
# Error log path: /home/sybase/ASE-15_0/install/SYBASE150_2K.log
# Config file path: /home/sybase/ASE-15_0/SYBASE_2K.cfg
# Directory for shared memory files: /home/sybase/ASE-15_0
# Adaptive Server name: SYBASE150_2K
#
/home/sybase/ASE-15_0/bin/dataserwer \
-sSYBASE150_2K \
-d/home/sybase/ASE-15_0/devices/2Kmaster.dat \
-e/home/sybase/ASE-15_0/install/SYBASE150_2K.log \
-c/home/sybase/ASE-15_0/SYBASE150_2K.cfg \
-M/home/sybase/ASE-15_0 \
```



Starting UNIX Servers

Simplified syntax:

```
startserver [-f runserver_file]
```

Example:

```
prompt% cd $SYBASE/$SYBASE_ASE/install
```

```
prompt% startserver -f RUN_SYBASE
```

- Execute this command at the operating system prompt
- This command starts the server named in the RUNSERVER file
 - If no file name is specified, the server searches for a "RUN_SYBASE" file



Verifying a UNIX Server Is Running

Syntax: `showserver`

Example: `prompt% showserver`

```
F S UID      PID  PPID  C PRI  NI ADDR      SZ WCHAN  STIME TTY      TIME CMD
0 S syb204    2202 2201  0 75   0  - 23985 -      Aug18 ?      00:50:19
  /home/usr/u/syb204/ase150/ASE-15_0/bin/dataserver -sSYB204_2K -
  d/home/usr/u/syb204/ASE-12_5/devices/2Kmaster.dat -
  e/home/usr/u/syb204/ase150/ASE-15_0/install/SYB204_2K.log -
  c/home/usr/u/syb204/ase150/ASE-15_0/SYB204_2K.cfg -M/home/usr/u/syb20
0 S syb203    17269 17268  0 75   0  - 14431 -      09:29 ?      00:00:00
  /home/usr/u/syb203/ase150/ASE-15_0/bin/backupserver -SSYB203_2K BS
  e/home/usr/u/syb203/ase150/ASE-15_0/install/SYB203_2K_BS.log -N25 -T20 -
  M/home/usr/u/syb203/ase150/ASE-15_0/bin/sybmultbuf
```

- Execute this command at the operating system prompt
 - Lists all servers currently running on the local machine
 - If no servers are running, only the header appears



Stopping Servers

Syntax: `shutdown [server_name] [with {wait | nowait}]`

Example: `1> shutdown`
`2> go`

`Server SHUTDOWN by request.`

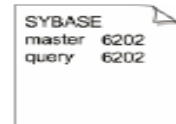
`The SQL Server is terminating this process.`

- Execute this command from a Sybase client
 - `server_name` is required only when shutting down a server other than Adaptive Server (for example, Backup Server)
 - The `nowait` command shuts down the server immediately, even if statements are currently in progress (this is not the default)
 - The `wait` command allows transactions currently in progress to be completed before executing the shutdown



The *interfaces* File

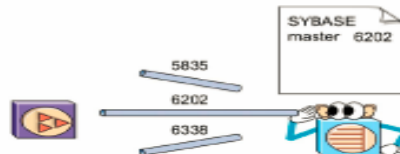
- The *interfaces* file is an “address book” that lists the name and address of every known server
- When connecting to a server with a given name, client applications:
 - Look up the server name in the *interfaces* file
 - Connect to the server using the given address
- Administrators must modify and distribute the *interfaces* file to users so they can connect to the server
- The name and location of the *interfaces* file differ between operating systems
 - UNIX default: *interfaces* in `$SYBASE`
 - Windows default: *sql.ini* in `%sybase%\ini`



SYBASE	
master	6202
query	6202



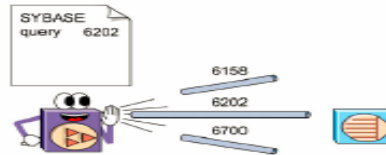
How Adaptive Server Listens for Client Connections



- When Adaptive Server is started:
 1. It determines the server name it should use
 2. It looks in the interfaces file for an entry with that name
 3. It uses the port number and network protocol information in the file to know where to listen for client connections



How Clients Connect to Adaptive Server



- When a client connects to an Adaptive Server:
 1. It determines the name of the desired Adaptive Server
 2. It looks in the interfaces file for an entry with that name
 3. It uses the machine, port number, and network protocol information in the file to connect to the server



Format of the *interfaces* File

- A basic text file
- There are several different possible formats for the interfaces file
- All formats include the following information:
 - The server name
 - The **master** entry, which is used by the server at startup
 - The **query** entry, which is used by clients when establishing connections

Example:

```
# Sybase Interfaces file
#
#<database_server_name><retry><delay>
#<tab><service><protocol><network><hostname><port>
#
SYBASE
    query tcp ether edeme4 2000
    master tcp ether edeme4 2000
```

Connection of SAP disp+work process to SAP Sybase ASE

Key points about how the SAP disp+work process connects to SAP Sybase ASE are as follows:

- SAP instances do not use the interfaces file because the distribution of the interfaces file is not required.
- SAP WebAS ABAP uses an ODBC driver to connect to the database. SAP WebAS ABAP directly loads the ODBC driver without using the ODBC driver manager.
- SAP WebAS Java uses the JDBC driver.
- The connection information for SAP instances is stored in the DEFAULT.PFL file.
The SAP DBSL library generates the following connection string from this information:

```

dbs/syb/schema = SAPSR3
dbs/syb/server = 1u1705t
dbs/syb/dbname = TNT
dbs/syb/port = 4901

```
- The work process also sets in the environment of user <sid>adm (see .dbenv. [sh|csh] files in \$HOME).
- The passwords are read from the SAP secure store (AS ABAP).

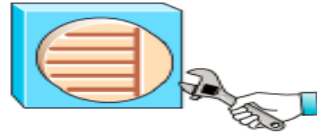


Note:
In an SAP environment, it is not necessary to distribute the interfaces file. The SAP instances do not use the interfaces file.



Configuration Parameters

- Configuration parameters are definable settings that control various aspects of Adaptive Server's behavior
 - Adaptive Server supplies default values
 - Configuration parameters can be reset to tailor the server to individual needs
- Proper setting of the configuration parameters keeps the server in working order and improves performance





The Configuration File

- The configuration file is an ASCII text file in which configuration values are stored
 - By default, the file is named `<server_name>.cfg`
- When the server is started, the configuration file is used to allocate server resources
 - On UNIX / Linux, the default file is located in the `$SYBASE_ASE` directory
 - On Windows, the default file is located in the `%SYBASE%` directory



SYBASE.cfg



Specifying a Configuration File at Startup

- On UNIX, use the `-c` command-line flag in the RUNSERVER file
 - Include the full path (Example in Student Notes)
 - If the file does not exist, the server creates a new `.cfg` file using the default values for that platform
- On Windows, use syconfig "Add Command Line Parameters" button, or update the Windows Registry directly



UNIX example:

```
/sybase/ASE-15_0/bin/dataserver -d/devices/master.dat \  
-sSYBASE -e/work/sybase/ASE-15_0/install/errorlog \  
-c/work/sybase/ASE-15_0/SYBASE.010
```



Portion of a Configuration File

```
#####
#           Configuration File for the Sybase SQL Server
#
#           Please read the System Administration Guide (SAG)
#           before changing any of the values in this file.
#####
[Configuration Options]
[General Information]
[Backup/Recovery]
    recovery interval in minutes = DEFAULT
    print recovery information = DEFAULT
    tape retention in days = DEFAULT
    max concurrently recovered db = DEFAULT
    number of checkpoint tasks = DEFAULT
[Cache Manager]
    number of oam trips = DEFAULT
    number of index trips = DEFAULT
    memory alignment boundary = DEFAULT
    global async prefetch limit = DEFAULT
    global cache partition number = DEFAULT
    extended cache size = DEFAULT
```



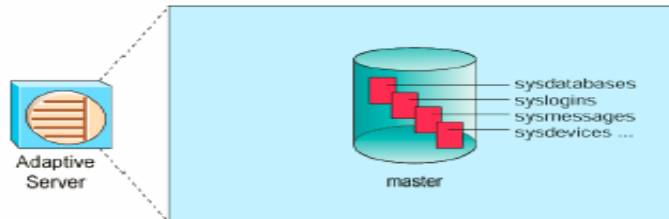
System Tables



- A system table is a table created and maintained by the server that stores information about the server or one of its databases
- System table names typically start with "sys" or "spt_"
- Examples: sysobjects, sysusers



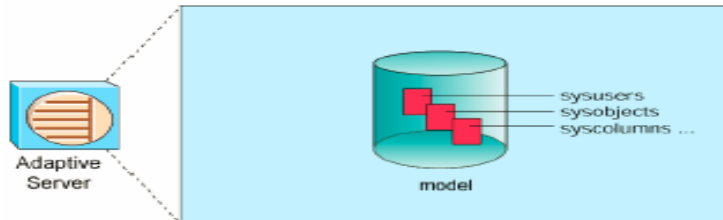
System Tables in master



- Some system tables exist only in the *master* database
- They store server-wide information
- Examples: sysdatabases, syslogins, syscurconfigs



System Tables in Every Database



- Some system tables exist in every database
- They store database-specific information
- Examples: sysobjects, sysusers, syscolumns



System Procedures

- System table information is generally viewed and modified through the use of system procedures
 - System procedure names start with "**sp_**"
 - ◆ Examples: **sp_help**, **sp_adduser**
- When an **sp_** system procedure is executed, Adaptive Server looks for that procedure in multiple locations
 - First, it checks the current database
 - If it is not there, it checks the *sybsystemprocs* database
 - If it is not there, it checks the *master* database
 - If it is not there, it returns an error message
- For non **sp_** procedures, only the current database is checked

- System tables can be viewed directly.

Example: `select * from sysobjects`



Viewing Configuration Values

- **sp_configure** displays configuration parameter values

Syntax: `sp_configure ["parameter_name"|"group_name"]`

Example: `sp_configure "number of remote connections"`

Parameter Name	Config Value	Run Value	Default	Memory Used
			Unit	Type

number of user connections		25	4791	
	25	25	number	dynamic

- Any user can use **sp_configure** to view configuration values



sp_configure Output

Group: Backup/Recovery

Output organized in columns

and by groups

Parameter Name	Default	Memory Used	Config Value	Run Value
print recovery information	0	0	0	0
recovery interval in minutes	5	0	5	5
tape retention in days	0	0	0	0

- For each configuration parameter, sp_configure will display:
 - **Default** - The default value of the configuration parameter.
 - **Memory used** - The amount of memory consumed by the currently running value for this configuration parameter.
 - **Config value** - The changed value of the configuration parameter.
 - **Run value** - The value of the configuration parameter at startup.
 - ◆ For dynamic parameters, this value matches the config value; for static parameters, this value differs whenever the parameter is updated and the server has not yet been restarted



Two Modification Methods

- Interactively
 - Use the **sp_configure** procedure
- Non-interactively
 - Manually changing the configuration file, and then reading the values into the server or restarting the server



Syntax:

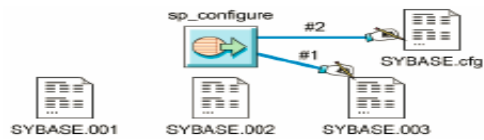
```
sp_configure "parameter_name", parameter_value
```

Example:

```
sp_configure "user log cache size", 4096
```



How the Server Modifies the Configuration File



- When **sp_configure** is used to change a parameter, the server:
 1. Saves a copy of the old file
 - For the first modification, the name is <server_name>.001
 - For the second it is <server_name>.002, etc.
 2. Writes the new setting to <server_name>.cfg

Resetting a Value to Its Default

- **sp_configure** can be used to reset a configuration value to the default value, even if you do not know what the default value is

Syntax: `sp_configure "parameter_name", 0, "default"`

Example:

```
sp_configure "number of remote connections", 0,  
"default"  
-  
Configuration option changed. Since the option is  
static, Adaptive Server must be rebooted in order  
for the change to take effect. Changing the value  
of 'number of remote connections' to '0' reduces  
the amount of memory ASE uses by 54K.
```



Parameter Types

- Dynamic parameter changes take effect immediately

Parameter	Range	Default	Type
<i>number of user connections</i>	5–2147483647	25	Dynamic

- Static parameter changes take effect when the server is restarted

Parameter	Range	Default	Type
<i>default network packet size</i>	512–65535	2048	Static

- Read only parameters display information and cannot be changed

Parameter	Range	Default	Type
<i>total physical memory</i>	n/a	n/a	read-only

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SAP Sybase ASE

Add Data and Log Files

Log and Data file can be added using disk init command.

disk init name = "<NAME>", physname = "<PATH>", size=<size>

Ex: use master
go
disk init
name = "<Device Name>",
physname = "\\Sybase\data\<sid>_data2.dat",
size = 6244000, [Note: 1 GB = 64000 Pages]
directio= true
go

sp_helpdevice command is used to view details of existing devices

Alter command is used to resize/Adjust DB

alter database <sid> log on <device> = 'size'

To Resize the Device/Data files

use master
go
disk resize name = "PID_data_001", size = "5000M"
go
alter database PID on PID_data_001 = "5000M"

```
Administrator: C:\Windows\system32\cmd.exe - isql -Usapsa -SPID -X
1> use master
2> go
1> disk resize name = "PID_data_001", size = "5000M"
2> go

Administrator: C:\Windows\system32\cmd.exe - isql -Usapsa -SPID -X
1> alter database PID on PID_data_001 = "5000M"
2> go
Extending database by 220000 pages (5000.0 pages/byte)
```



People matter, results count.

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