**Backup and recovery scenarios** for **Sybase ASE (Adaptive Server Enterprise) version 15**

## **Overview: Sybase ASE 15 Backup and Recovery Concepts**

**Backup types:**

1. **Full Database Backup** (dump database)
2. **Transaction Log Backup** (dump transaction)
3. **Cumulative/Incremental Backup** (not natively supported like Oracle/SQL Server — use custom scripting)
4. **Sybase Backup Server** handles actual I/O
5. **Backup media:** file system, tape, or NetBackup, etc.

**Recovery modes:**

* **Simple restore** (restore full DB only)
* **Point-in-time recovery** (restore DB + apply transaction logs)
* **Disaster recovery** (full server restore, possible rebuild of master DB)
* **Recover system databases** (e.g. master, model)

## **Common Backup and Restore / Recovery Scenarios**

### **1. Standard Full Database Restore**

* Scenario: Restore a single database after data loss or corruption.

Steps:  
  
 load database mydb from "/backups/mydb\_full.dmp"

go

online database mydb

go

### **2. Restore Full + Transaction Logs (Point-in-Time Recovery)**

* Scenario: Restore database to a specific time before an accidental delete or corruption.

Steps:  
  
 load database mydb from "/backups/mydb\_full.dmp"

go

load transaction mydb from "/backups/mydb\_log1.trn"

go

load transaction mydb from "/backups/mydb\_log2.trn" with stop\_at = "Apr 28 2025 13:10:00"

go

online database mydb

go

Ensure the database is **in a valid state for log loading** (i.e., not brought online until all logs are applied).

### **3. Disaster Recovery – Total Server Failure**

* Scenario: Hardware failure, need to rebuild entire ASE environment.
* Required:  
  + OS reinstall
  + ASE reinstallation (same version)
  + Restore master, model, and user databases

Steps (simplified):  
  
load database master from "/backups/master\_full.dmp"

go

shutdown with nowait

go

# Restart server manually

* Then restore other DBs as needed.

### **4. Restoring Only a Transaction Log (After Last Backup)**

* Scenario: DB is fine but needs recent transactions after a crash.

Steps:  
  
dump transaction mydb to "/backups/mydb\_log\_current.trn"

go

load transaction mydb from "/backups/mydb\_log\_current.trn"

go

### **5. Recover Individual Tables or Rows (No Native Table-Level Restore)**

* Sybase ASE **does not support** table-level recovery.
* Workaround:  
  + Restore full DB to a **temporary server or database**
  + Export required tables via bcp or select into
  + Import into original database

### **6. Corrupt System Table / Device**

* Use dbcc to detect corruption.
* May need to:  
  + Drop and recreate device or segment.
  + Restore from backup if corruption affects metadata or indexes.

### **7. 💡 Backup Strategies**

* Daily: dump database
* Hourly: dump transaction
* Weekly: Full + Validation (dbcc checkdb)
* Always include **sp\_configure "allow updates"** off before backups.

## **Best Practices**

| **Tip** | **Reason** |
| --- | --- |
| Always test backups | Backups can be corrupt or incomplete. |
| Keep at least 1 copy off-site | For disaster recovery compliance. |
| Use consistent naming conventions | Helps during multi-step recovery. |
| Backup transaction log frequently | Minimizes data loss window. |
| Monitor disk space for log backups | If log fills up, DB becomes unusable. |
| Document recovery procedures | For team readiness and audits. |

## **Useful Commands**

-- Show backup history

sp\_helpdb mydb

sp\_helpdevice

-- Mark database for load (if needed)

sp\_dboption mydb, 'single user', true

sp\_dboption mydb, 'dbo use only', true

-- Verify dump

load database verifyonly from "/backups/mydb\_full.dmp"