What you need to know about DB2

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Most Important Points

- This is just a survey of the ideas
  - See HPSS Installation and Management Guides
  - Ask HPSS support folks
  - See DB2 documentation
- HPSS / DB2 Works
- DB2 has plenty of capacity to run HPSS

Most Important Points

- DB2 is easy to work with
- Copious detailed documentation
  - On-line
    - Web pages
    - PDFs
  - Printed
- Excellent Support
  - From HPSS support
  - Indirectly from IBM support

30000 Ft View

- DB2 stores HPSS metadata
  - Metadata that used to be in records in SFS files is now in rows of DB2 tables.
- Each HPSS system uses at least two databases
  - CFG
    - Contains HPSS configuration tables
    - Contains global server metadata (e.g. PVL)
  - SUBSYS1
    - Contains Core Server and MPS metadata
    - Each sub-system has its own database, subsys2, subsys3, etc.

30000 Ft View

- All tables have fixed names
  - Tables are made unique by their placement in unique databases (subsys1, subsys2).
- All HPSS databases are contained in schema “hpss”

What You Need to Do

- Start DB2
  - As needed (e.g. after bringing a node up)
  - Db2start
- Stop DB2
  - As needed (e.g. when taking a node down)
  - Take HPSS down
  - Db2 force application all
  - Db2stop

What You Need to Do

- Develop a backup & restore plan
  - How often?
  - What type?
  - Stored where?
  - Duplicate copies?

What You Need to Do

- Backup DB2 regularly
  - Chapter 12 in the Management Guide covers this topic in detail
  - Several types of backups
    - Full offline
      - HPSS not running
    - Full online
      - HPSS running
    - Delta
    - Incremental

What You Need to Do

- Backup DB2 regularly
  - Many ways to store backup data
    - Commercial backup system
      - TSM
      - Legato Networker
      - Other XBSA compliant systems

What You Need to Do

- Backup DB2 regularly
  - Many ways to store backup data
    - HPSS supplied XBSA tools
      - Automates the storage and retrieval of DB2 backup data to and from tape.
      - Stores backup data on disk, then spools it to tape.
      - Can also store and retrieve DB2 log files.
    - Home grown
      - May be a realistic option if your needs are simple or can't be met by other systems. The basic backup command is simple to understand and use. A backup system could be a tape drive, some tapes and a script.

What You Need to Do

- Backup DB2 regularly
  - Several ways to restore DB2
    - Restore to point of failure
    - Restore to a point in time
  - See DB2 “Data Recovery and HA Guide” for all the details.

What You Need to Do

- Archive DB2 log files
  - Must provide a place to store finished log files
  - Must provide a user exit program
    - DB2 supplied program easily configured
  - Monitor log archiving for failures
  - May want to keep duplicate copies
  - Store logs as long as necessary per backup.
  - See DB2 “Data Recovery and HA Guide” for all the details.

What HPSS Will Do

- Complain when DB2 related errors occur
  - HPSS log messages contain DB2 detailed error text
- Warn when free table space gets low

Things You Might Want to Do

- Monitor General Health of DB2
  - Snazzy GUI monitor tool
- Rehearse restore scenarios
- Run runstats or reorgchk
- Reorganize tables and indexes
- Tune for maximum performance
  - Everyday workload
  - Changes in workload characteristics
- None of the above

Production Experience

- Excellent!
  - DB2 has been running in development, test and production HPSS 5.1 systems without any known problems.
  - We have been improving HPSS's use of DB2 and improving the way we recover from DB2 error returns.

Production Experience

- We have been learning to manage DB2 logs and are working to reduce the number of active logs.
- Complete restorations of DB2 have been rehearsed and have worked flawlessly.