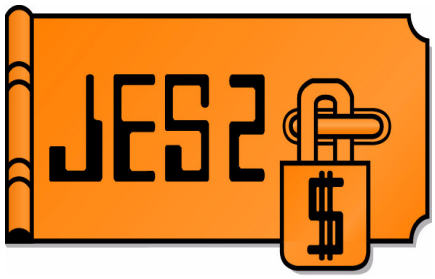

JES2
Short Subjects

SHARE 100, Session 2653

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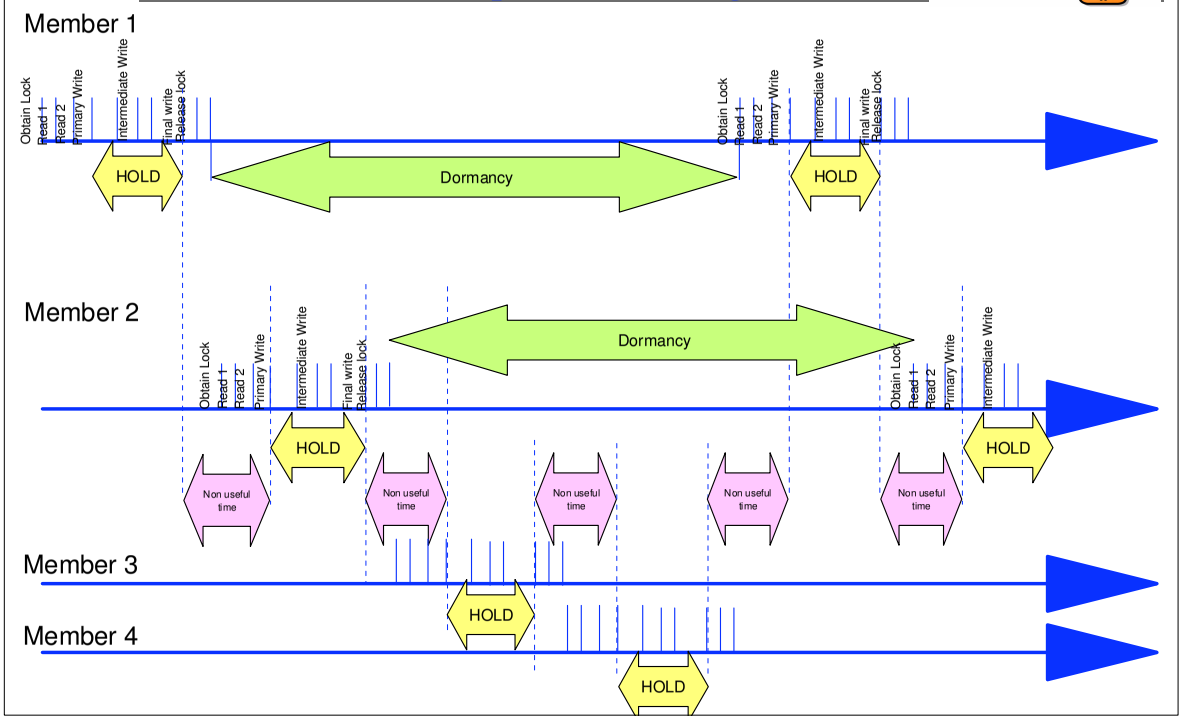
How many members in your largest MAS?

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11-20	
21-32	

Large MAS Considerations

- Performance
  - Checkpoint and spool
- Operations
- Error recovery and diagnosis

The Checkpoint Cycle



Checkpoint performance

- Ideal checkpoint cycle - 2-4 seconds
  - Your mileage may vary
- More members may require shorter hold times
- All members are not necessarily equal in their requirement for checkpoint ownership
- Checkpoint on CF
  - Fairness in distribution of lock requests (FIFO)
- Trace id 17
  - Use to tune HOLD and DORMANCY across MAS
- $DPERFDATA(CKPTSTAT)
  - Contains most summary info in $TRACE 17

Checkpoint performance

- Increase amount of parallel processing when checkpoint is unowned
  - Many processes require checkpoint at beginning and end of processing but do most work without checkpoint ownership
    - **PCEDEF CNVTNUM=10, PURGENUM=10**
    - **INTRDR RDINUM=**
  - Some $EXITs can affect this
    - Avoid **$QSUSE** in RDR exits (2,3,4)
    - Can use **$CKPTQUE** or **$DILBERT** to defer setting of fields until checkpoint is available
    - **$DPERFDATA(QSUSE)** can be used to find exits which are affecting throughput

Checkpoint performance

- Duplicate jobname processing
  - Using duplicate jobnames to serialize is very expensive (CPU and CKPT activity)
    - Large system effects
    - Better methods exist (scheduling packages)
  - **JOBDEF DUPL_JOB=NODELAY**
- Job list commands ($TOJ, $TJ, $OJ) can consume a lot of CPU while holding CKPT if
  - Generic (or no) subscript specified
  - Lots of filters specified
  - For example
    - **$TJ(5,10,15)** is faster than **$TJOBQ(FRED*)** is faster than **$TJOBQ,/JOBMASK=FRED***

SPOOL performance

- SHARK DASD can improve performance especially when parallel accesses come from multiple systems
- Spool fencing is a tradeoff
  - **SPOOLDEF FENCE=YES** reduces the impact of spool volume failure
  - **SPOOLDEF FENCE=NO** can allow multiple parallel I/Os for individual jobs
  - **SPOOLDEF FENCE=(YES,*nn*)** can be used to exploit the best attributes of both **FENCE=YES** and **FENCE=NO** in OS/390 R10 and up.

Operations

- Only 22 valid values for CONDEF CONCHAR
  - Use **CONDEF SCOPE=SYSTEM**
  - Use MVS **ROUTE** command to get to correct system rather than unique CONCHAR value for each member
- **INCLUDE** and **PROCLIB** init statements can be used to reduce the number of places that need to be updated when changes are made
  - System symbolics (&SYSCLONE, etc.)

Operations

- The following can only be changed on all-member warm start (or cold start)
  - Local node name (**NODE(n) NAME=**, where n is value of **NJEDEF OWNNODE=**)
  - **NJEDEF NODENUM=**
  - **MASDEF XCFGRPNM=**
  - **DESTDEF**
- The following can be changed on a cold start only
  - **SPOOLDEF VOLUME=**
    - change from 5 chars to 4 via command
  - **SPOOLDEF DSN=, BUFSIZE=, TRKCELL=**
  - **NJEDEF OWNNODE=**

Error Recovery and Diagnosis

- SFM (Sysplex Failure Manager) to automatically remove failed systems
- **MASDEF AUTOEMEM=YES** and **RESTART=YES** to automatically do JES2-related cleanup
- **CKPTDEF OPVERIFY=NO**, with **NEWCKPT1** and **NEWCKPT2** specified
  - Automate on **$HASP256** (forwarding suspended)
- Use LOGGER to obtain merged log
  - Continue to gather SYSLOG though
- Collect all dumps when multi-system dump is taken (CKPT-related problems especially)