



Ingesting and Serving WISE Data in IRSA

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- What are we doing, and why are we doing it?
- Challenges we faced
- Our solution
- Current usage
- Future plans



What are we doing?

- IRSA will serve WISE data during the mission
 - IRSA has the tools
 - Gator
 - isisql
 - IRSA has the experience
 - IRSA already serves a lot of other large catalogs
 - Personnel have experience with large databases in general



Why is this different?

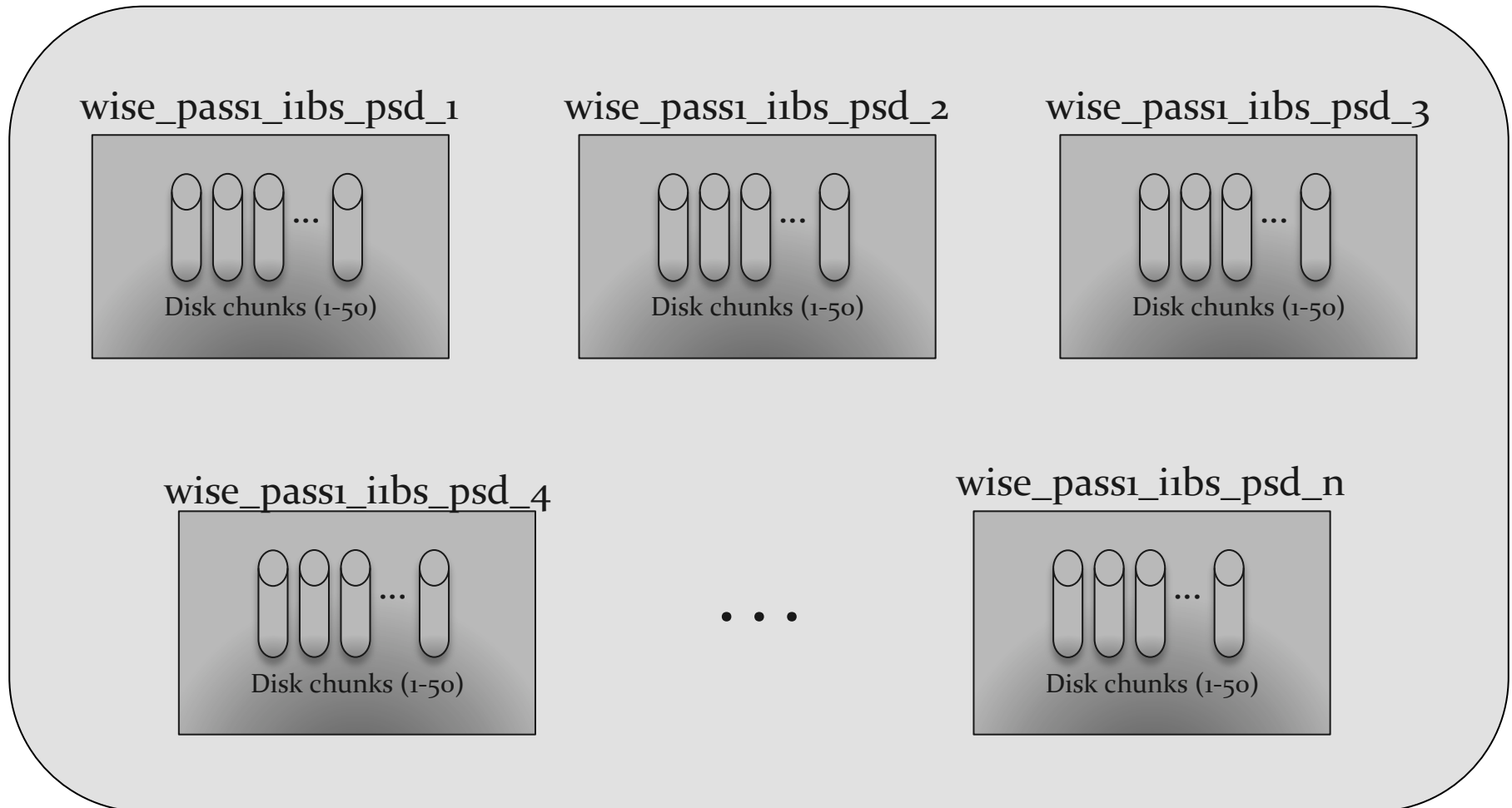
- Larger than our usual catalogs
- Many small individual loads instead of being delivered all at once
- Need access to all previous data as new data are being ingested



Our solution

- Fragmentation
 - Fragment data into 50 equal buckets on disk
 - Fragmented by spatial index (spt_ind)
 - Fragment spt_ind index to match
- Multiple tables
 - New table for each source delivery
 - Create “view” uniting all tables into one virtual table

wise_pass1_iibs_psd_view





Proof of concept / testing

- Palomar Transit Factory (PTF)
 - Very similar issues
 - Large dataset
 - Multiple deliveries
- Performance testing
 - Single table vs. multi-table view
 - Multi-table view as number of tables increases



Tradeoffs

- Inability to do aggregates
 - COUNT(), MAX(), MIN(), etc.
 - Considered writing functions to perform those tasks
 - Decided it would be too much work for too little use
- Increased maintenance costs
 - Extra software to perform view management, fragment data, etc.



Current operations

- Began receiving data 14 January
- 19 provisional data deliveries ingested
 - 17 level 1b source deliveries
 - 4 level 3 source deliveries
- 40 pass1 data deliveries ingested (as of 8 June)
 - 20 level 1b source deliveries
 - 20 level 3 source deliveries



Future plans

- Realign data at end of mission
 - Revert to single table
 - Regain ability to do aggregates
- Re-fragment according to final spatial index distribution
 - Keep parallelization
 - More evenly distribute data