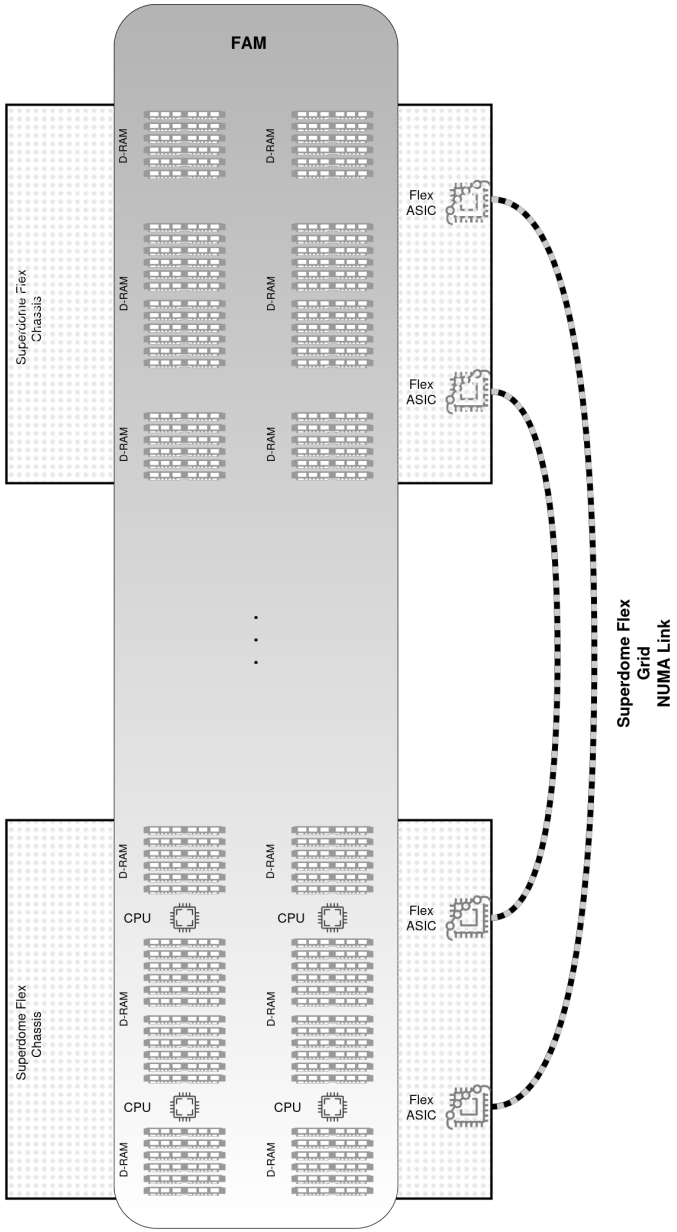
# Deutsches Zentrum für Astrophysik

02.04.2025,

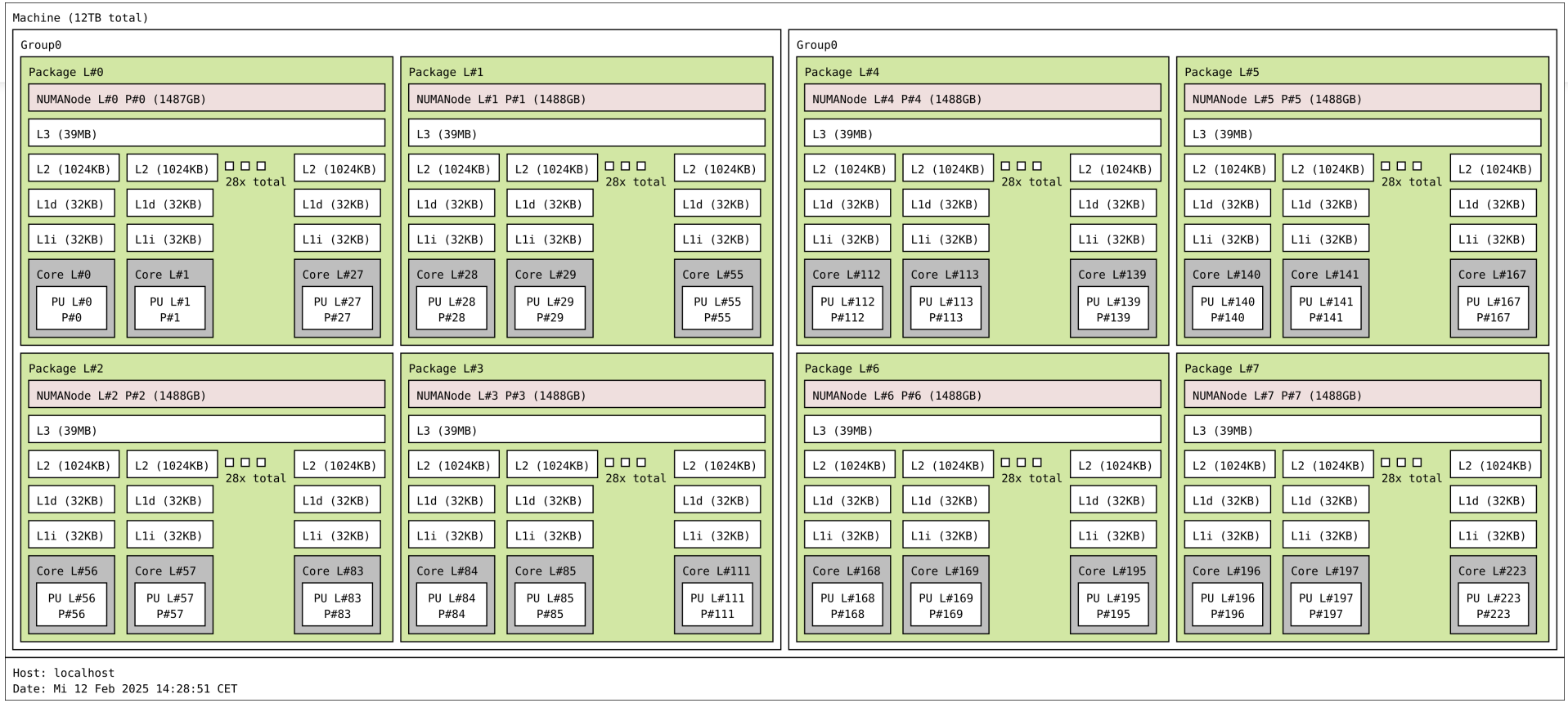
PUNCH + interTwin + DZA

# Julia DZA Configuration
# Fabric Attached Memory

- Fabric Attached Memory (FAM) all memory is shared and seen
- Julia DZA has a Partition with two Chassis so in total ~ 12 TB RAM
- FAM reachable over ram-disk with tmpfs filesystem, were ~ 1TB are mounted



# Julia DZA Hardware Topology

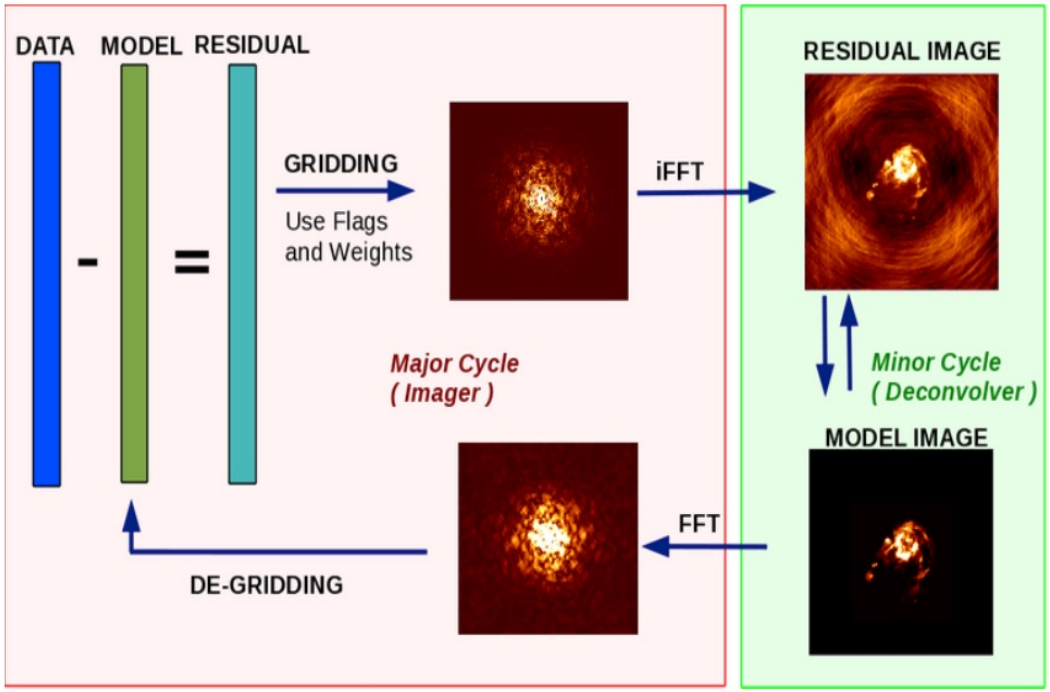


# $df -h Julia DZA disk space on filesystem

| Dateisystem | Größe | Benutzt | Verf. | Verw% | Eingehängt auf |
|---|---|---|---|---|---|
| /dev/sda2 | 117G | 70G | 42G | 63% | / |
| devtmpfs | 4,0M | 0 | 4,0M | 0% | /dev |
| tmpfs | 560G | 8,3G | 552G | 2% | /dev/shm |
| efivarfs | 512K | 99K | 409K | 20% | /sys/firmware/efi/efivars |
| tmpfs | 256G | 16M | 256G | 1% | /run |
| tmpfs | 50G | 0 | 50G | 0% | /dev/shm_node_0 |
| tmpfs | 50G | 0 | 50G | 0% | /dev/shm_node_1 |
| tmpfs | 50G | 0 | 50G | 0% | /dev/shm_node_2 |
| tmpfs | 50G | 0 | 50G | 0% | /dev/shm_node_3 |
| tmpfs | 50G | 0 | 50G | 0% | /dev/shm_node_4 |
| tmpfs | 50G | 0 | 50G | 0% | /dev/shm_node_5 |
| tmpfs | 50G | 0 | 50G | 0% | /dev/shm_node_6 |
| tmpfs | 50G | 0 | 50G | 0% | /dev/shm_node_7 |
| tmpfs | 50G | 0 | 50G | 0% | /run/user |
| /dev/sda1 | 511M | 5,8M | 506M | 2% | /boot/efi |
| tmpfs | 50G | 8,0K | 50G | 1% | /run/user/0 |
| tmpfs | 50G | 8,0K | 50G | 1% | /run/user/1001 |
| 172.24.94.210:/mnt/narwhal/dza | 9,1P | 313T | 8,3P | 4% | /mnt/narwhal |
| tmpfs | 50G | 8,0K | 50G | 1% | /run/user/1002 |

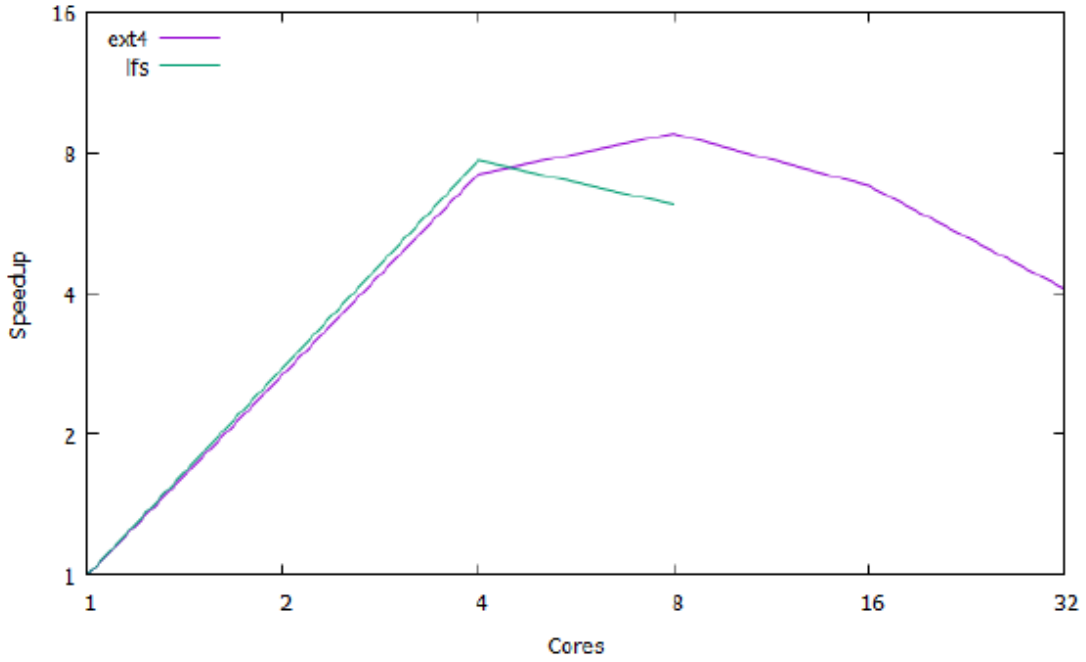
DZA

# CASA Imaging Workflow

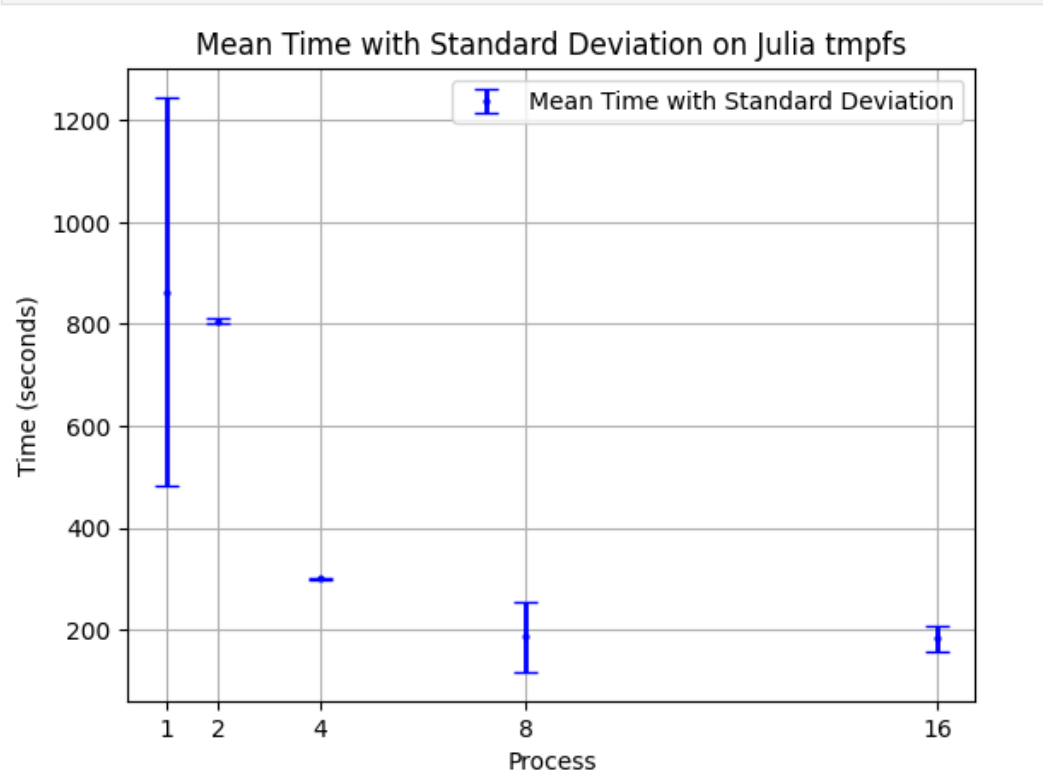



Iterative Image Reconstruction - Major and Minor Cycles

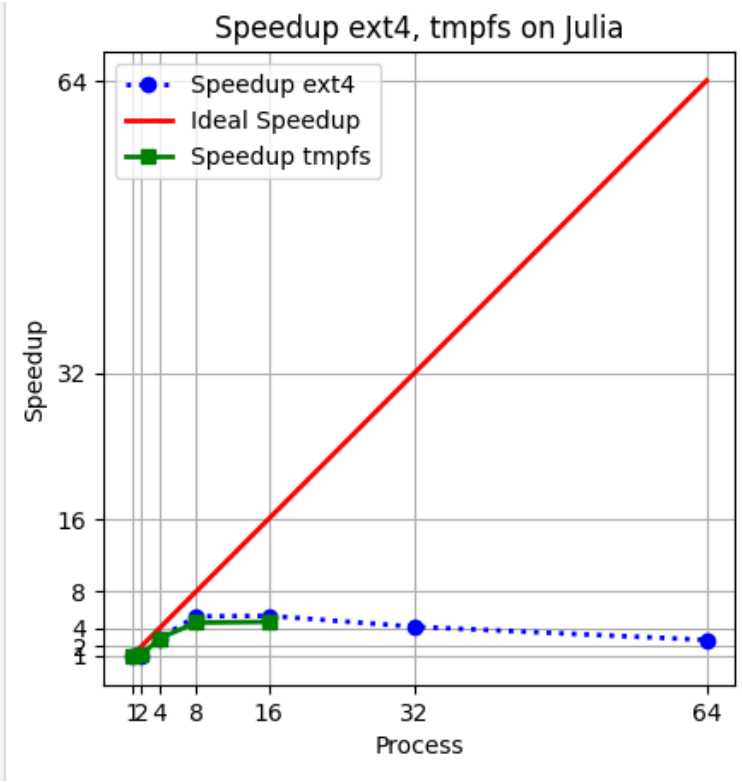
# CASA Imaging Workflow in the year 2020



# CASA Imaging Workflow on Julia DZA



# CASA Imaging Workflow on Julia DZA



# Backup

# Memory-based Computing with Julia DZA

- Shared Memory System with HPE Superdome Flex Server one rack with eight Chassis
- One Chassis has four nodes
  - Intel(R) Xeon(R) Platinum 8276M CPU @ 2.20 GHz
  - 28 physical cores
    (28 x 4 = 112 per Chassis)
  - 12 x 128 GB DDR4-2933 MT/s per socket (48 x 128 GB = 6.144 GB per Chassis)
- DZA Partition includes two Chassis
  - SLES 15 SP6 is bound to a varying subset of nodes.
  - A certain amount of working memory is bound as ram drive via tmpfs.