

General (Stefan/Kin)

- During our single beam test (yellow) today, the most significant change was when Angelika did more collimation (esp. ~ 4 mm horizontal) which is possible because of reduced beam size, we saw considerably fewer "errors" in MVTX readout. Angelika thinks that we can do this ~3 hours after a store starts. It's not clear whether collisions have additional (harmful effect). We can test this during a store whenever the MVTX group is ready.
- 56 MHz group wants 5 hour commissioning time.
- vacuum now better than pre-maintenance
- continuous gap cleaning at 1 Hz will be turned on from the next store by default

Current Priority Items (PC)

- TPC: turn on and run as much as possible (expert operation for now)
- MVTX: turn on and run as much as possible (expert operation for now); background studies
- Calorimeter: increase read-out speed with goal to move closer to taking a physics data set

Work Control Coordinators (Chris/Joel)

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Plan of the Day (Stefan/PC/all—to be revisited at end of meeting)

- INTT timing scan (4 h) Requires INTT experts
- beam data with HCal + EMCal in high gain, ~1 million events
- Big partition running with LL1, GL1, MBD, ZDC, HCal, EMCal, sEPD, INTT
- no beam time HCal cosmics trigger threshold scan. Can be run between fills. 1 h.
- HCal only cosmics if no beam
- Verify Z vertex location (+/- 5cm of IP) and have MCR move it as needed.

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Evening (Takao)

- We inherited a store from the previous shift, which was dumped at 17:30. Before that, there was a short dip in zdc rate and increase in background, which came from trip of a power supply. They seem to have recovered from this by correcting the orbit.
- We called Sean for EMCal LV trip recovery after the dump, which was successful.
- Next fill came in at 18:10, whose scheduled dump time was 2:00am. Z-vertex is -3cm. It turned out that this was slowly drifting to -4cm at the end of shift. We didn't call MCR about this.
- One of the HCal pin diode currents had red. Called Virginia, and she said that oit is OK as long as the data looks OK. We left as they are.
- Another power-trip happened in RHIC at 23:30 that caused a dip in zdc rate and background. They recovered in 5min. Then the beam was passed to the next shift.
- We took HCal LED runs once an hour.

Night (Rosi)

- Inherited Fill 34025 with zdc rate 3.6 kHz, and a vertex position of -3.8 cm. Beam dumped at 2:12 am.

- Beam abort before physics around 2:50 am.
- Another beam abort around 3:46 am.
- New fill 34029 started at 4:48 am with ZDC rate of 10.3 kHz, background $\sim 5/ZDC$, with a scheduled dump of 12:46 and an MBD vertex of -2.7 cm.
- We have been taking runs with the big partition with LL1, GL1, MBD, ZDC, HCal, EMCal, sEPD, INTT. We took MBD laser runs and HCal LED runs. We have not been successful with taking HCal cosmics.

Day (Tristan)

- INTT LAD1 showed minor fault and flow dropped to 4.6 Lpm, we removed it until flow recovered above 5 Lpm
- LL1+GL1+MBD+ZDC+sEPD+HCal+EMCal data taking
- Tim worked with the daq to remove seb1 and seb6, they were limiting the data rate
- Jaebeom took over and did some daq development working on seb1 and seb6
- Around noon, we dropped the blue beam for MVTX tests with Angelika steering the beam from the sPHENIX control room
 - Searched the x-y plane for the spot with lowest background
 - Experimented with moving the collimators in further
- After dumping yellow beam, MCR called and let us know they need to continue working on the injector and offered us a half hour access
 - Hugo entered for TPOT work: [Run 2023:2746](#)

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Magnet (Kin)

- Nothing new to report.

MBD (Mickey, Lameck)

- Nothing new to report.

Trigger (Dan)

- Threshold scan for cosmics trigger

GTM/GL1 (Martin/Dan/John K)

- V45 under test, looking good so far.
- Plan: install on GTM0 tomorrow

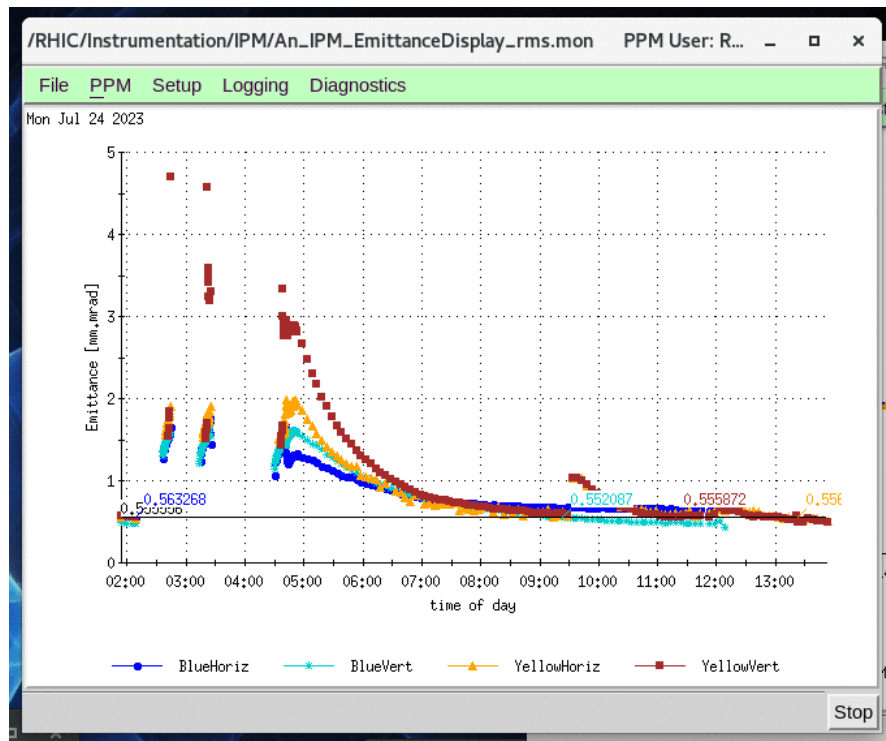
DAQ (Martin/John H)

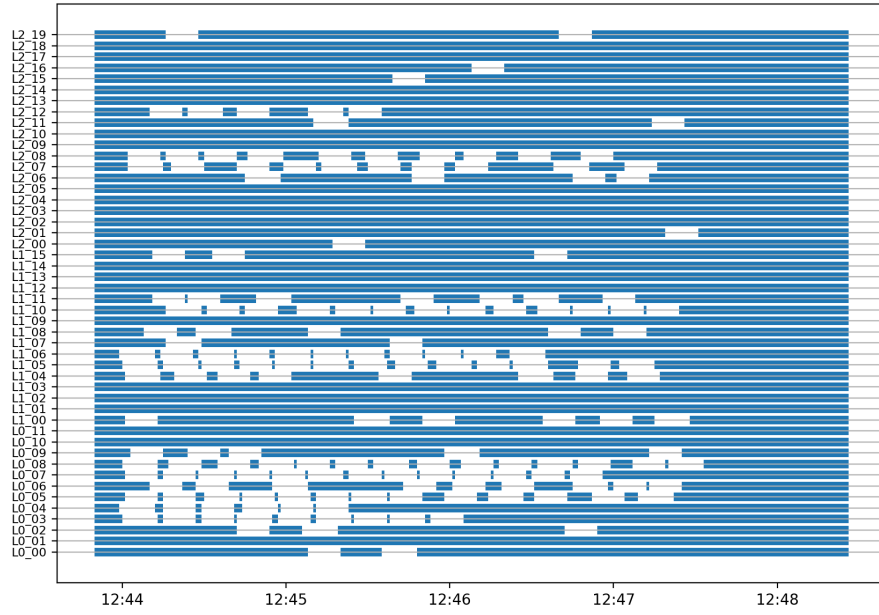
- I installed the new versions of RCDAQ and Run Control today (no one seems to have felt a thing)
- Next version has to come in sync with the gl1/gtm firmware/software upgrade
- Verifying the new GL1 logging (looks good so far, see above)
- Do we have a decision to drop to 16 samples for emcal/HCal? We just need to know...
 - Yes!
- One general thing: please do not dump large files (such as root file output) to the backed-up-daily home disk. After 7 weeks we just have our backup system back at

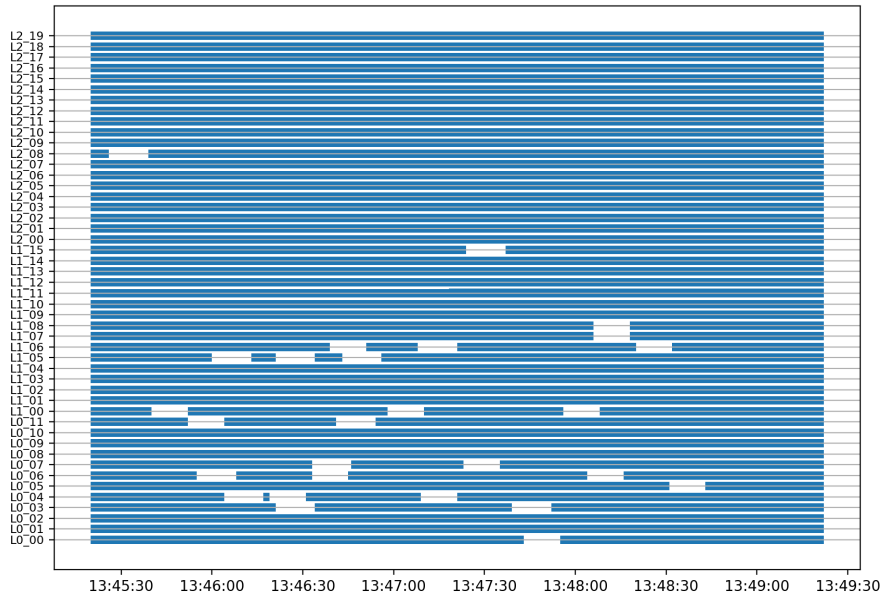
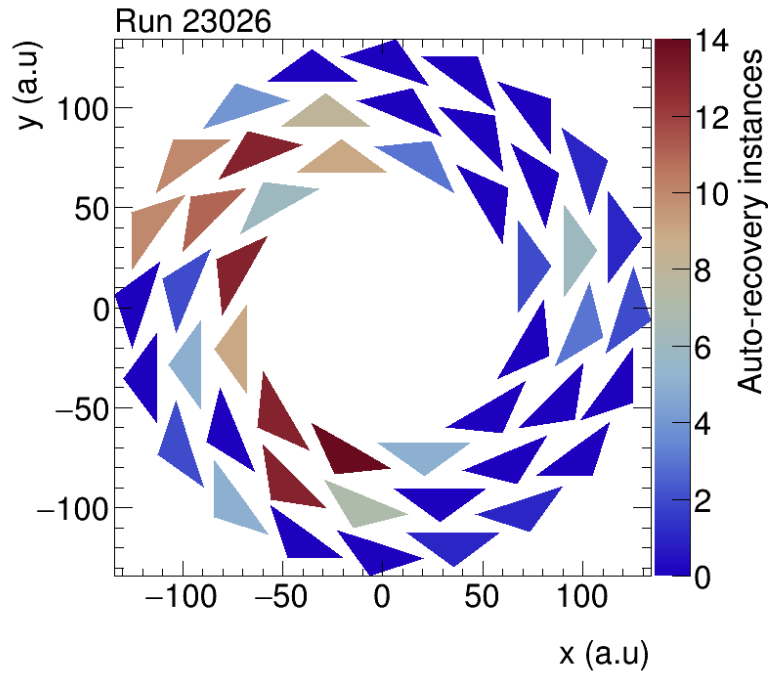
~90% capacity, it can run full at any minute again. We have a million-dollar /bbox file system here, please use it. And in doubt, please ask!

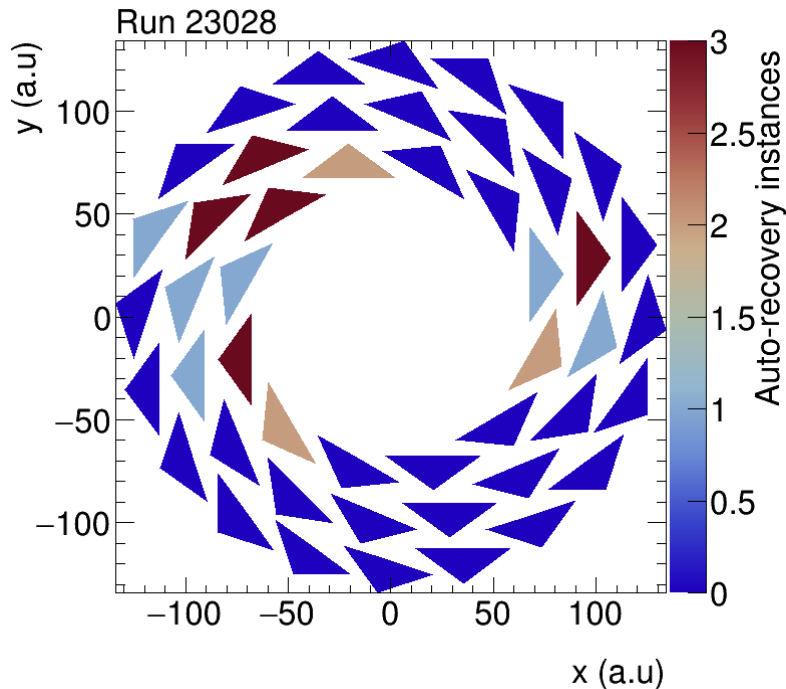
MVTX (written by Cameron, work by Hao-Ren and Michael)

- We took single yellow beam data before and after Angelika's work
 - As Kin mentioned, we saw lots of errors accumulated on the east side before testing (looked to be as frequent as other tests). Several staves (12) went into error after a few seconds
 - After tightening the collimators we saw significantly less errors (1 or 2 staves typically, I think the highest was 3 staves)
 - I think we need to optimize the value of beam emittance needed to tighten the collimators before taking data. 3 hours is a good start and we can work back in 30 minute increments and try to settle on a value
 - Figures: Top - beam emittance through the last store. Middle and bottom - staves in error recovery as a function of time **before** (middle, 179 recoveries) and **after** (bottom, 27 recoveries) collimator change (no error in blue, stave in error in white). Middle and bottom figures by Michael Peters









TPC (Tom Hemmick, Jin, Takao, Evgeny, Charles, Bob, Ross, Nick, Thomas, Adi, John K.)

- Long meeting today discussing plan
- Besides the on-going spark detection system production, we plan to
 - (1) turn on HV as much as possible at a safe low-gain setting. Exercise data taking with a below-MIP gain
 - (2) use one sector for the new FEE firmware test (zero-suppression, sync to RHIC clock, etc.)
 - Both are expert operation (shift crew does not need to worry about it)
- Other plans this week:
 - Possible diffuse laser test, Wednesday or later
 - TPC crew discussing what we need to do and the best time to do it.

HCal (Virginia)

- Part (1/2 of one sector) of inner HCal was stuck in high gain last evening. No good way to catch this with our current monitoring instructions because it was reading as normal gain- need to know what to look for in online monitoring
 - Instructions have been updated on our standing orders page for data monitor and will talk to shift crews
- Request: no beam time HCal cosmics trigger threshold scan. Can be run between fills. Should take ~1hr total once everything is set up
 - Dan is working on setup right now
- Request: beam data with HCal + EMCal in high gain, ~1 million events

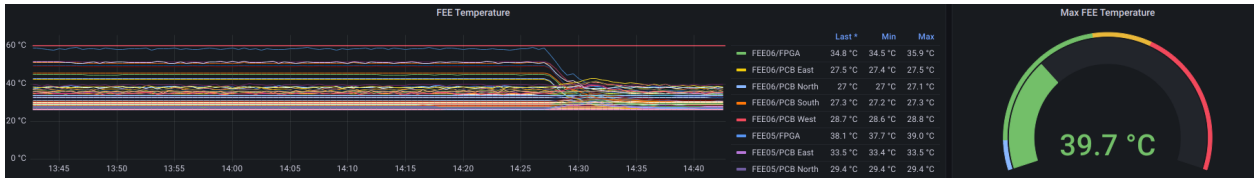
EMCal (Tim)

- Observed the emcal operating at a notably lower than expected rate in the big partition (~200 Hz)

- Diagnosis identified the behavior was caused by SEB01 and SEB06, after a reboot of the SEB machines rate was restored to ~800-900 Hz!
- Direct cause will be further investigated if behavior returns

TPOT (Hugo)

- Took advantage of a short control access to go check the TPOT cooling. After playing around a bit with the flow meters, things are back to normal:



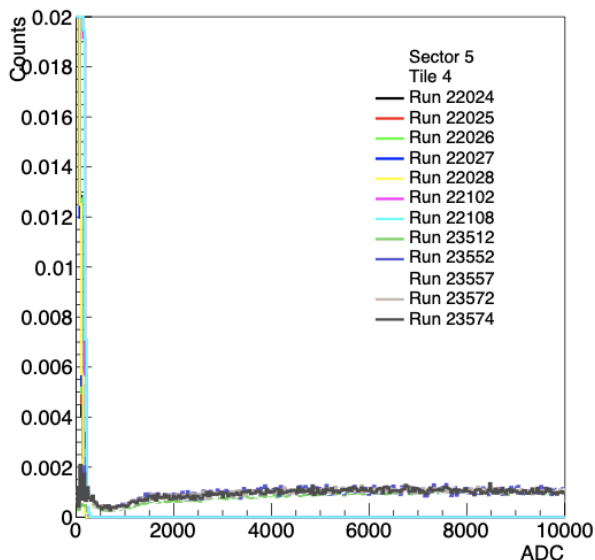
- Nothing else to report. Working on slow control.

INTT (Cheng-Wei/Rachid)

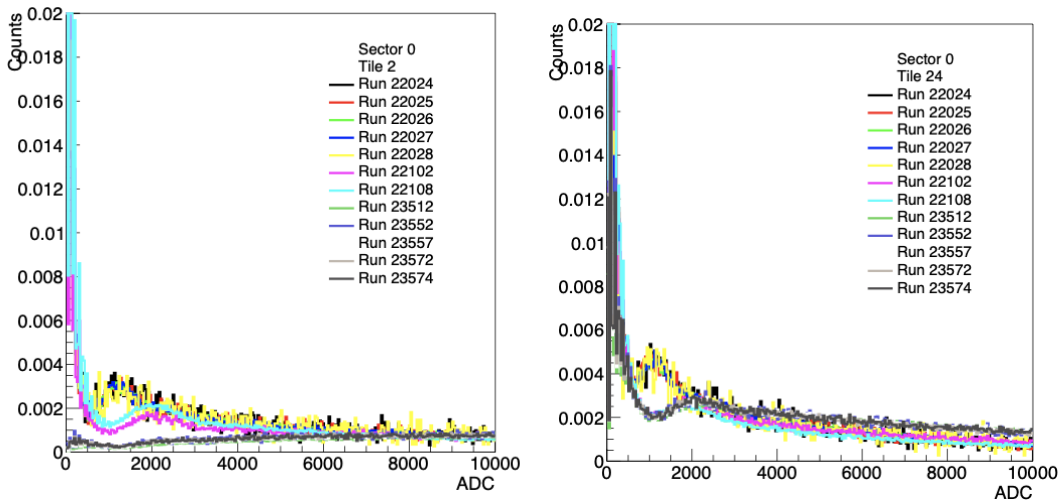
- There was work on the ladders cooling CDUs to isolate them from high humidity in the assembly hall (the work is done. We did not turn off INTT cooling, and we did not interrupt INTT data taking). We hope this work will fix cooling trips. We are monitoring closely the cooling situation.
- Based on last week's close monitoring of detector operation, the INTT ladder cooling flow condition is now set to 4.9 LPM (INTT instruction will be updated accordingly). This implies:
 - if the ladder's cooling ≥ 4.9 LPM, you can turn ON INTT LV and BV
 - If the ladder's cooling < 4.9 LPM turn OFF INTT power and call the expert.
- Since now the chiller flow rate is $>$ greater than 4.9 LPM, would like to request 4 ~ 6 hours (with beam, local mode) to continue the timing scan.

sEPD(Tristan/Rosi)

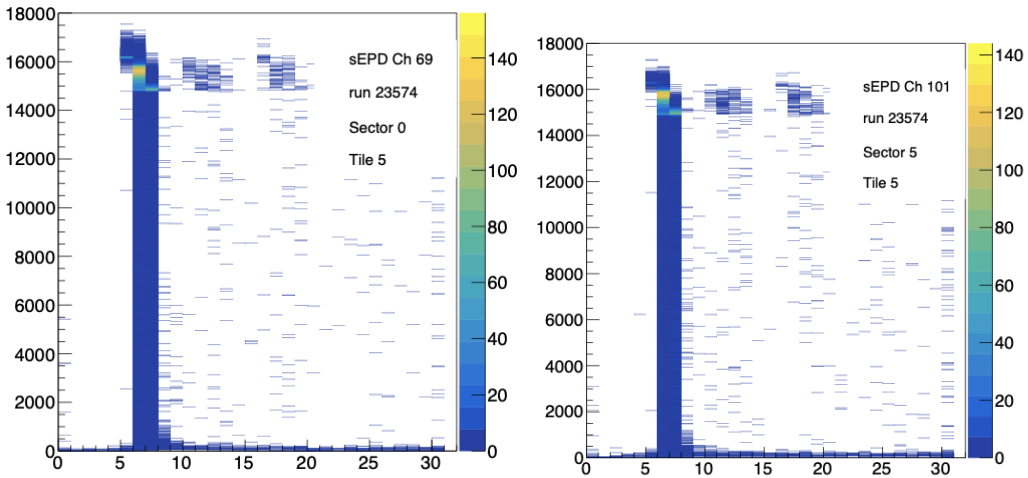
- Looking at one of the channels fixed in the access, we see signal now:



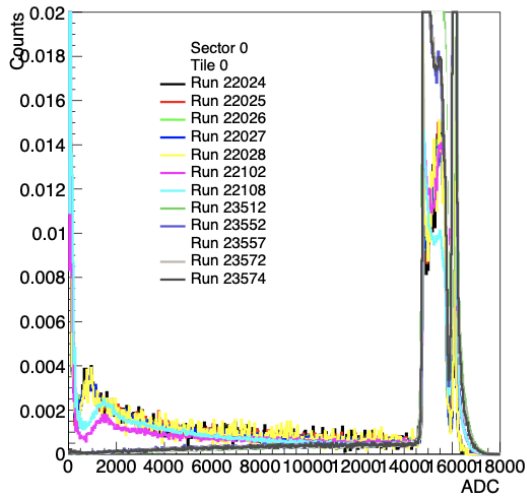
- This means we see signal in 61 out of 62 expected signals. However there was a change in between as well, the inner tiles look like they're being saturated more, and there is some strange saturation happening. We will check the waveforms.



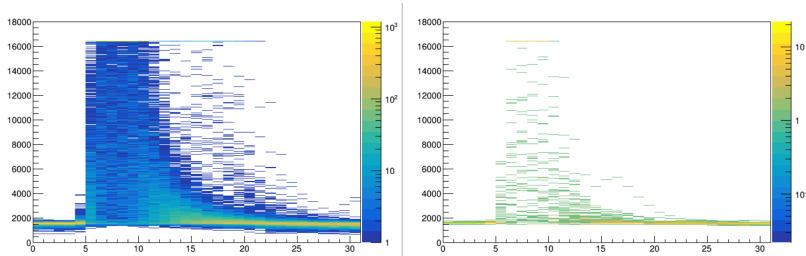
- You can see the change in the mip peak position with the switch from 57 to 63 V, but then the distribution on the left for this inner tile looks like we're just being hit with particles. On the right, it looks ok, you can see the shift expected from the bias increase.



- Not much evidence for significantly different cross talk between shielded (left) and unshielded (right).
- We can see the signal below - it is under investigation.



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- Waveforms above Big signal? (shown is overlay of ~100 events)

Gas/Cooling ()

- We made a mod to the INTT CDU's. We are now purging the units with dry air. We are sometimes running below the dew point in the AH. This should help keep the 2 units dry during those times.
 - From Cameron: Should we do the same to the MVTX CDUs? We run 4 - 5 C warmer than the INTT

ZDC (Ejiro/John H)

- SMD commissioning continues
 - John H will get techs to terminate the remainder 8 cables for the SMD
 - Signal in live channels under investigation
- ZDC calibration close to finalization

Background Counters ()

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Online Monitoring (Chris)

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