

Status of 250 GeV MC production

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MC2020 sample production

Summary page : <https://ild.ngt.ndu.ac.jp/mc-prod/prodmon/prodsum-mc2020.html>

Process	Statistics		Status
$2f_l, 2f_h$	$eL.pR / eR.pL$ $5 ab^{-1}$	$eL.pL / eR.pR$ $1 ab^{-1}$	Done 2021 Jul. 08
all $4f$	$eL.pR / eR.pL$ $5 ab^{-1}$	$eL.pL / eR.pR$ $1 ab^{-1}$	Done Middle of Apr.
all $6f$	10 k		GEN not ready
$e\gamma / \gamma e / \gamma\gamma$ process ($3f, 5f, aa_2f, aa_4f$)	$1 ab^{-1}$		Done
$e\gamma$ ($1f$)	$1 ab^{-1}$		GEN not ready
$h \rightarrow inclusive$	Each 500 k ($> 1 ab^{-1}$)		Done
$h \rightarrow each\ decay$ (5x9 channels)	Each 100 k or 500 k		Done
$Z \rightarrow qq, Zh \rightarrow vvqq$ for LCFI	50 k		Done
$Z \rightarrow qq$ (91 GeV) for LCFI	50 k		Done

All planned $2f, 4f$, Higgs, $3f, 5f, aa_2f, aa_4f$ have completed in early Jul. 2021
 Remaining productions are $6f$ and $e\gamma$. still waiting for GEN sample



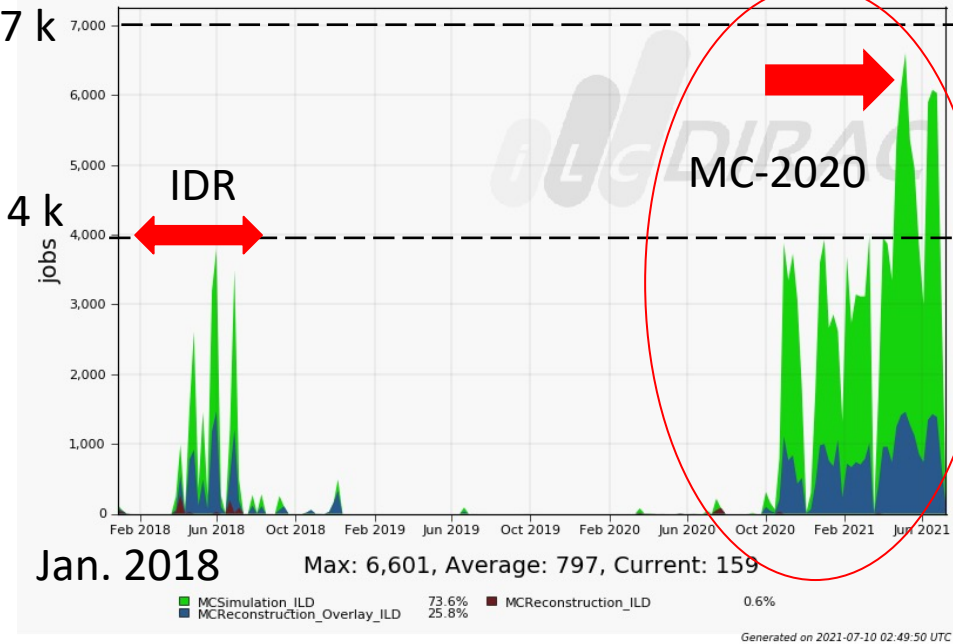
MC2020 production status

1st stage : SIM kept, REC partially kept
 2nd stage : SIM/REC all removed

Instantaneous

Running jobs by JobType

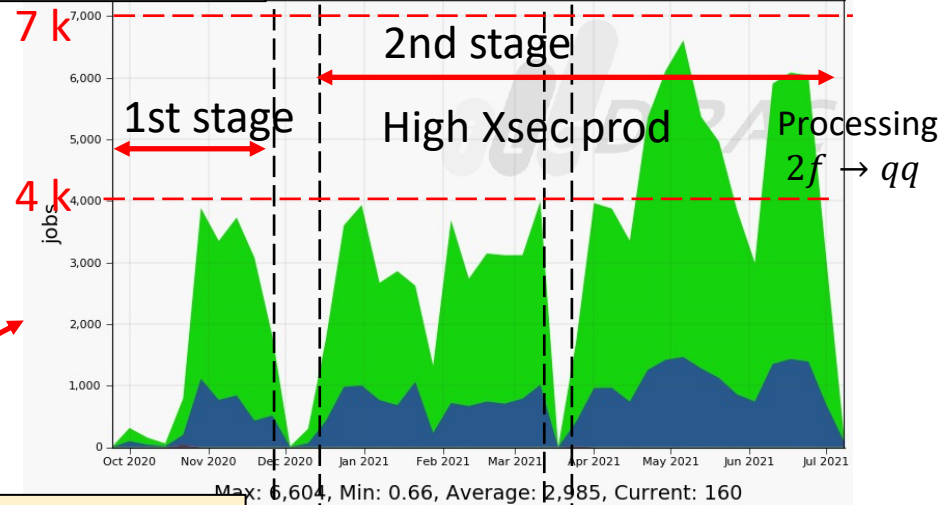
184 Weeks from Week 52 of 2017 to Week 27 of 2021



Now 6 to 7 k jobs are concurrently running

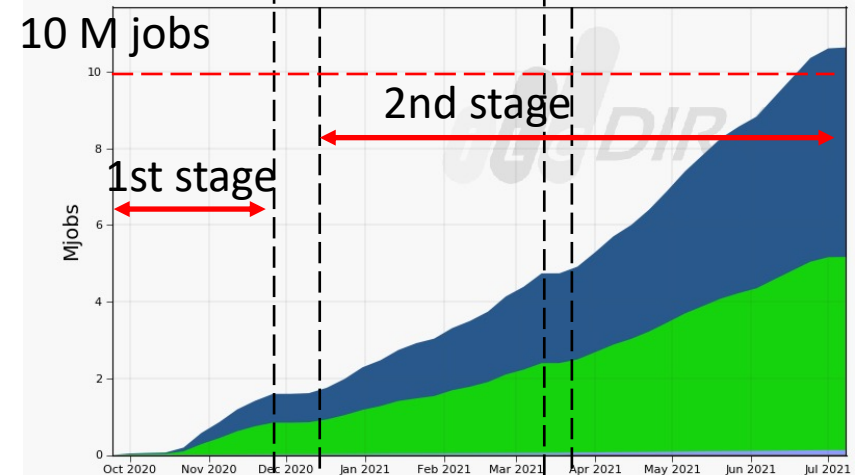
ILCDirac fully utilized since IDR production

Instantaneous



Cumulative

41 Weeks from Week 38 of 2020 to Week 27 of 2021



Generated on 2021-07-09 11:51:48 UTC



MC2020 production summary

MC2020 production information is summarized following page

<https://ild.ngt.ndu.ac.jp/mc-prod/prodmon/prodsum-mc2020.html>

Link for "Generator sample info" ELOG (processID, cross section etc)

Link for "Production info" ELOG (merged-DST info etc)

250-SetA, ILD_I5_o1_v02

process_type	pol	processID	NbEvents	int.lumi(1/fb)	Done %	ElogID(s)	ProdIDs of DST and REC files
higgs_inclusive : Produced rate 99.96% (N_Prod/N_Gen = 6997400/7000000)							
e1e1h	eL.pL	402013	500000	801943	100.0	348	DST=15095,15096;REC=15095
e1e1h	eL.pR	402001	500000	28294	100.0	347	DST=15089,15090;REC=15089
e1e1h	eR.pL	402002	500000	44887	100.0	347	DST=15089,15090;REC=15089
e1e1h	eR.pR	402014	498800	800018	99.8	348	DST=15095,15096;REC=15095
e2e2h	eL.pR	402003	500000	29462	100.0	347	DST=15089,15090;REC=15089
e2e2h	eR.pL	402004	500000	46001	100.0	347	DST=15089,15090;REC=15089
e3e3h	eL.pR	402005	500000	29514	100.0	347	DST=15089,15090;REC=15089
e3e3h	eR.pL	402006	500000	46110	100.0	347	DST=15089,15090;REC=15089
n1n1h	eL.pR	402007	499600	8278	99.9	347	DST=15089,15090;REC=15089
n1n1h	eR.pL	402008	499000	23248	99.8	347	DST=15089,15090;REC=15089
n23n23h	eL.pR	402009	500000	7450	100.0	348	DST=15095,15096;REC=15095
n23n23h	eR.pL	402010	500000	11647	100.0	348	DST=15095,15096;REC=15095
qqh	eL.pR	402011	500000	1457	100.0	348	DST=15095,15096;REC=15095
qqh	eR.pL	402012	500000	2278	100.0	348	DST=15095,15096;REC=15095
higgs_exclusive : Produced rate 100.00% (N_Prod/N_Gen = 29399200/29400000)							




Generator sample summary ELOG

Generator sample information is also available (cross section, process ID, whizard version etc).

<https://ild.ngt.ndu.ac.jp/elog/genmeta/>

genmeta | dbd-prod2 | dbd-prod | worklog | simCPUSize | test-prod | opt-data

Generator meta data, Additional information will be found in [THIS LINK](#), Page 1 of 37 Not logged in 

List | Find | Login

Full | Summary | Threaded -- status -- -- process_name -- -- process_type -- -- Energy -- -- Polarization -- -- process_id -- -- JobDate -- **3613 Entries**

Goto page 1, 2, 3 ... 35, 36, 37 Next

ID	status	process_id	Energy	process_name	process_type	Polarization	xsect	NbEvents	IntLumi	JobDate	program	
3615	OK	500145	250	aa_4f_zznu_sl	aa_4f_ZZnunu_semileptonic	eB.pB	1.38904419e-06	1000	719919501	2020-10-26	whizard-2_8_5	
3614	OK	500308	250	2f-lcfi_z_uu	flavortag	eR.pL	4457.5213	250000	56.085	2020-11-18	whizard-2_8_5	
3613	OK	500306	250	2f-lcfi_z_uu	flavortag	eL.pR	10759.111	250000	23.2361	2020-11-18	whizard-2_8_5	
3612	OK	500312	250	2f-lcfi_z_ss	flavortag	eR.pL	1993.2056	250000	125.426	2020-11-18	whizard-2_8_5	
3611	OK	500310	250	2f-lcfi_z_ss	flavortag	eL.pR	7951.4427	250000	31.4408	2020-11-18	whizard-2_8_5	
3610	OK	500304	250	2f-lcfi_z_dd	flavortag	eR.pL	1993.2056	250000	125.426	2020-11-18	whizard-2_8_5	
3609	OK	500302	250	2f-lcfi_z_dd	flavortag	eL.pR	7951.4427	250000	31.4408	2020-11-18	whizard-2_8_5	
3608	OK	500316	250	2f-lcfi_z_cc	flavortag	eR.pL	4457.5213	250000	56.085	2020-11-18	whizard-2_8_5	
3607	OK	500314	250	2f-lcfi_z_cc	flavortag	eL.pR	10759.111	250000	23.2361	2020-11-18	whizard-2_8_5	
3606	OK	500320	250	2f-lcfi_z_bb	flavortag	eR.pL	1993.2056	250000	125.426	2020-11-18	whizard-2_8_5	
3605	OK	500318	250	2f-lcfi_z_bb	flavortag	eL.pR	7951.4427	250000	31.4408	2020-11-18	whizard-2_8_5	
3604	OK	500053	250	aa_2f_z_l	aa_2f_Z_leptonic	eB.pB	232601.785	536900000	2308.26	2020-11-06	whizard-2_8_5	
3603	OK	500057	250	aa_2f_z_h	aa_2f_Z_hadronic	eB.pB	42149.6384	97200000	2306.07	2020-11-06	whizard-2_8_5	
3602	OK	500204	250	ea_5f_ww_l	ea_5f_WW_leptonic	eR.pB	0.00057624793	1000	1.73536e+06	2020-10-26	whizard-2_8_5	
3601	OK	500192	250	ea_5f_ww_sl	ea_5f_WW_semileptonic	eR.pB	0.000740247204	1000	1.3509e+06	2020-10-27	whizard-2_8_5	
3600	OK	500188	250	ea_5f_zznu_sl	ea_5f_ZZnunu_semileptonic	eR.pB	1.12911829e-05	1000	88564680	2020-10-27	whizard-2_8_5	
3599	OK	500186	250	ea_5f_zznu_sl	ea_5f_ZZnunu_semileptonic	eL.pB	4.60469765e-05	1000	2.1717e+07	2020-10-26	whizard-2_8_5	
3598	OK	500176	250	ea_5f_ww_h	ea_5f_WW_hadronic	eR.pB	3.08828981e-05	1000	3.23804e+07	2020-10-26	whizard-2_8_5	
3597	OK	500174	250	ea_5f_ww_h	ea_5f_WW_hadronic	eL.pB	3.62876868e-05	1000	2.75576e+07	2020-10-26	whizard-2_8_5	
3596	OK	500240	250	ae_5f_zznu_l	ae_5f_ZZnunu_leptonic	eB.pR	0.000149092571	1000	6.70724e+06	2020-10-26	whizard-2_8_5	
3595	OK	500238	250	ae_5f_zznu_l	ae_5f_ZZnunu_leptonic	eB.pL	8.46458383e-05	1000	1.18139e+07	2020-10-26	whizard-2_8_5	
3594	OK	500228	250	ae_5f_zznu_sl	ae_5f_ZZnunu_semileptonic	eB.pR	4.83921986e-05	1000	2.06645e+07	2020-10-26	whizard-2_8_5	
3593	OK	500226	250	ae_5f_zznu_sl	ae_5f_ZZnunu_semileptonic	eB.pL	1.5815269e-05	1000	6.323e+07	2020-10-26	whizard-2_8_5	
3592	OK	500016	250	ea_3f_z_l	ea_3f_Z_leptonic	eR.pB	51302.6587	97800000	1906.34	2020-10-26	whizard-2_8_5	
3591	OK	500014	250	ea_3f_z_l	ea_3f_Z_leptonic	eL.pB	51367.7005	97800000	1903.92	2020-10-26	whizard-2_8_5	
3590	OK	500036	250	ae_3f_z_l	ae_3f_Z_leptonic	eB.pR	51557.8638	97800000	1896.88	2020-10-26	whizard-2_8_5	



Production summary ELOG

Production information is summarized following page (Number of events, merged DST file location etc)

<https://ild.ngt.ndu.ac.jp/elog/dbd-prod/>

ID	Date	SimID	RecID	Ecm	ProcName	ProcID	Pol	ILDConfig	Detector	JobStatus	NEvents	Text
570	2021/07/08 11:54:07	15634	15635[recdst],15636[dst](ovl)	250	4f_WW_leptonic	500094	eL.pR	v02-02	ILD_I5_o1_v02	Done	4000000	2021-07-08 11:54:05 : Production for 4f_WW_leptonic.bww
569	2021/07/07 09:36:04	15632	15633[dst](ovl)	250	2f_Z_hadronic	500010	eL.pR	v02-02	ILD_I5_o1_v02	Done	12791600	2021-07-07 09:36:03 : Production for 2f_Z_hadronic.bww
568	2021/07/04 02:02:14	15630	15631[dst](ovl)	250	2f_Z_hadronic	500012	eR.pL	v02-02	ILD_I5_o1_v02	Done	4198000	2021-07-04 02:02:13 : Production for 2f_Z_hadronic.bww
567	2021/07/02 11:59:56	15628	15629[dst](ovl)	250	2f_Z_hadronic	500010	eL.pR	v02-02	ILD_I5_o1_v02	Done	12692000	2021-07-02 11:59:56 : Production for 2f_Z_hadronic.bww
566	2021/07/01 23:42:33	15626	15627[dst](ovl)	250	2f_Z_hadronic	500012	eR.pL	v02-02	ILD_I5_o1_v02	Done	7097200	2021-07-01 23:42:33 : Production for 2f_Z_hadronic.bww
565	2021/07/01 11:52:13	15624	15625[dst](ovl)	250	2f_Z_hadronic	500012	eR.pL	v02-02	ILD_I5_o1_v02	Done	7093600	2021-07-01 11:52:13 : Production for 2f_Z_hadronic.bww



File location on KEKCC/DESY-NAF

Production conditions

Whizard 2.8.5
ILCSoft, ILDConfig : v02-02
Detector : ILD_I5_o1_v02

File location via local batch system

Merged-DST files (Disk only location, **Total 132 TB**)

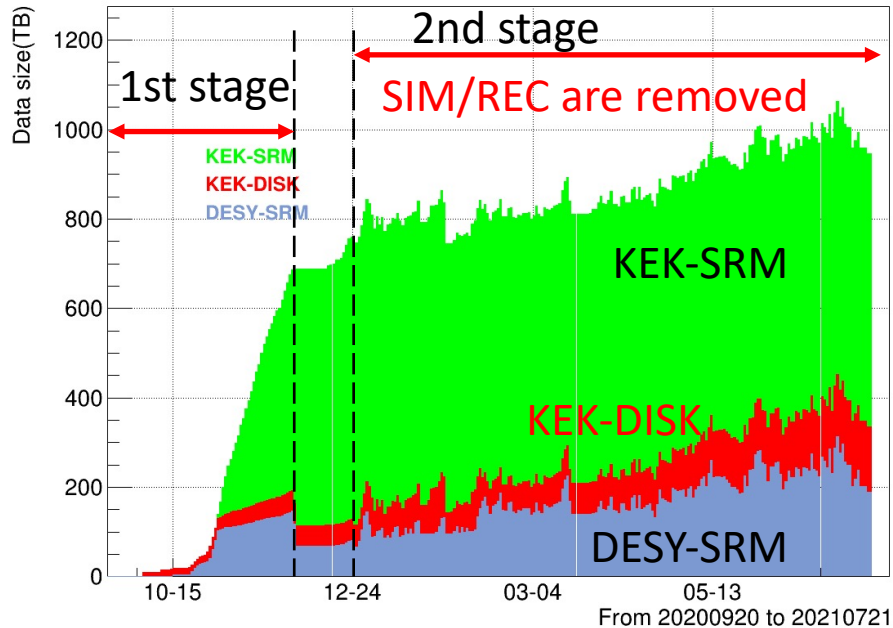
DESY-NAF : /pnfs/desy.de/ilc/prod/ilc/mc-2020/ild/dst-merged
KEKCC : /group/ilc/grid/storm/prod/ilc/mc-2020/ild/dst-merged

SIM/REC files (Not fully kept, stored on TAPE)

DESY-NAF : /pnfs/desy.de/ilc/prod/ilc/mc-2020/ild/[sim,rec]
KEKCC : /hsm/ilc/grid/storm/prod/ilc/mc-2020/ild/[sim,rec]



Disk space usage



mc-2020 merged-DST total: 132 TB
(Kept on KEK-DISK, DESY-SRM disk area)

Path from local batch system

DESY : /pnfs/desy.de/ilc/prod/ilc/mc-2020/ild/dst-merged
KEK : /group/ilc/grid/storm/prod/ilc/mc-2020/ild/dst-merged

Add TAPE on KEK-SRM
~1.6 PB → 1.9 PB

<https://ild.ngt.ndu.ac.jp/mc-prod/prodmon/size.png>

	DISK area	Used (2021.07.11)	Available
KEK-DISK	300 TB (DISK)	147 TB	~150 TB
KEK-SRM	1.9 PB (TAPE)	1.1 PB (610 TB for MC-2020)	~800 TB
DESY-SRM	600 TB (DISK)+TAPE	201 TB (DISK mc-2020)	~300 TB? (DISK)

Summary of disk space usage <https://ild.ngt.ndu.ac.jp/mc-prod/prodmon/mcprod.html>



Next step

- ILDProd tool update for python3 following the ILCDirac update
- ELOG version update for maintenance

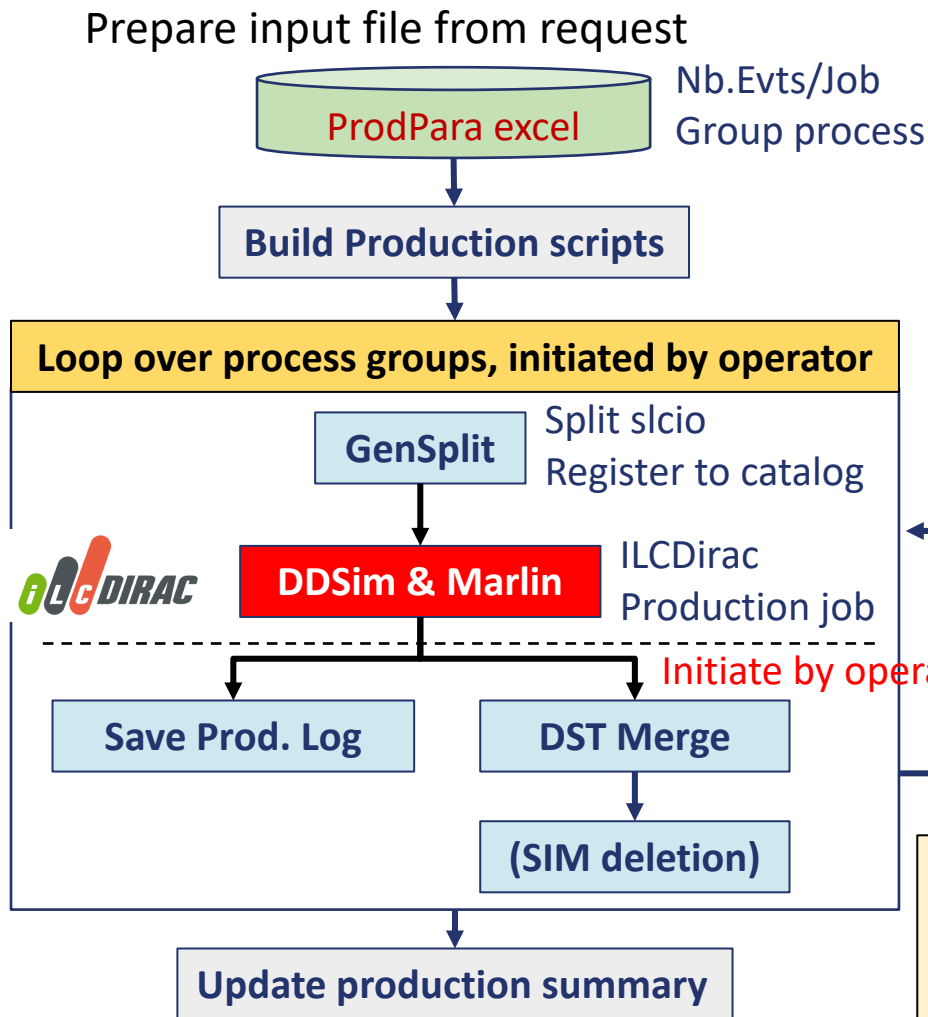
Next productions

- Remaining planned production after GEN ready
→ $6f, e\gamma$ samples
- Further evaluation of SDHCAL production request
→ Request has received and need to estimate required CPUtime, disk space (IN2P3CC will be used for location)
- Any other production for next step?

BACKUP



ILD MC production workflow (ildprod)



Operator task

- **Prepare** production scripts
Processes, # of Evt/job, # of files to process, etc.
- **Start** each production, adjust prod. parameters for better through put.
- **Terminate** ILCDirac production step when >99% files are processed
- **Monitor** the production comes to DONE status.

Manual intervention if error happens, stuck

Cron task

- Show progresses on web
- Add jobs controlled with param.
- Initiate sub-steps of DST merge and retrieve logs
- Monitor error



Record progress in each step

<https://ild.ngt.ndu.ac.jp/eelog/dbd-prod/>

ildprod new feature

- Automatic retry if jobs failed with error
- Set gensplit speed, # of running jobs (SIM/REC)

<https://ild.ngt.ndu.ac.jp/mc-prod/prodmon/prodsum-mc2020.html>

