

TriggerTool Training for Run-2

Understanding the Trigger Configuration

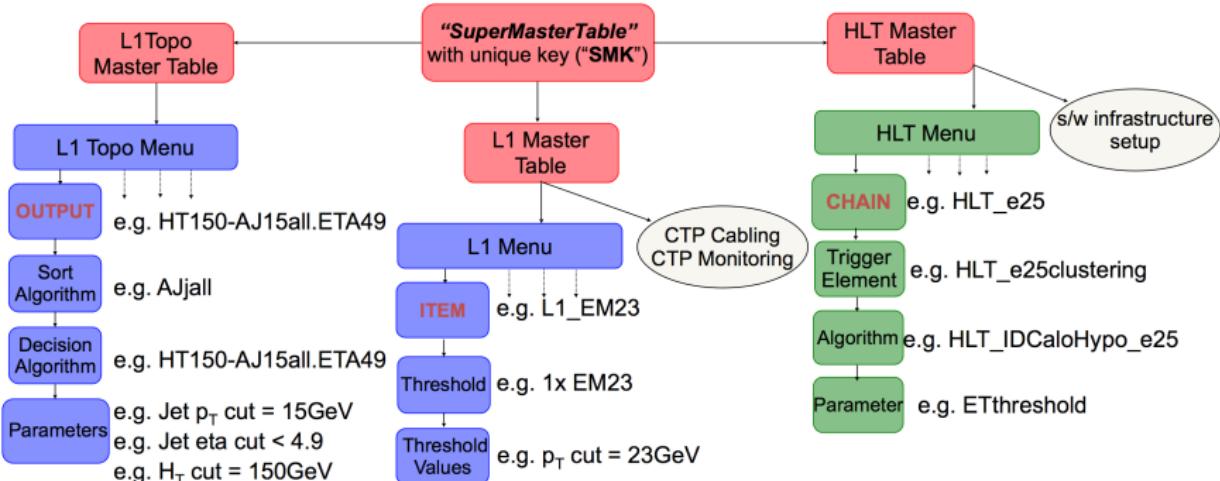
C. Barajas, M. Giannelli, A. Martyniuk,
J. Stelzer, M. Stockton, W. Vazquez
on behalf of
The Trigger Configuration Group

Outline

- 1 TrigDB and the configuration keys
- 2 Starting up the TriggerTool
- 3 The MainPanel
- 4 Upload/Download
- 5 Common Shifter Tasks
 - Prescale editing
 - Menu Commenting
 - OverviewPanel: Menu viewing/editing
 - Diffling SMKs/Tables for information
- 6 Summary

The TrigDB

- The TrigDB stores the L1Topo, L1 and HLT menus and setups
- Combined these define the configuration of the L1 hardware and HLT software
- Its basic layout can be visualised as three sections



- The TriggerTool is the sole user interface to the TrigDB
- It loads, views, edits, downloads menus defined in the TrigDB

The 3 (4) Keys

- **Supermaster key (SMK)**: defines a unique configuration, i.e. points to a set of master tables:
 - L1Topo Master
 - L1 Master
 - HLT Master
- Each L1/HLT Menu has a selection of possible **Prescale Set Keys** that can be apply pre scales to the menu
- The full (ATLAS side) configuration is therefore defined by,
 - **Supermaster key**: Defines the L1Topo/L1/HLT menus
 - **L1 prescale set key**: Defines the L1 prescale set
 - **HLT prescale set key**: Defines the HLT prescale set
- The L1Topo provides direct inputs into the L1 CTP, therefore it does not have a prescale key of its own
- A fourth key, the **L1 Bunch Group Key**, defines the current LHC fill pattern

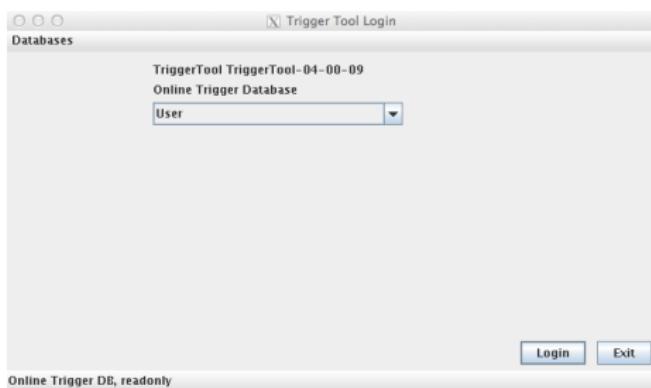
Disclaimer

- The Run-2 TriggerTool is currently a work in progress due to major upgrades before Run-2
- A stable version for Run-2 is ready at P1
- However if you are running the Run-2 version and find any feature is not working/missing, please report it on JIRA
- The team will endeavour to solve the issue a.s.a.p.
- The Run-1 TriggerTool is archived in versions less than 04-00-00



Starting the TriggerTool at the Trigger Desk

- If the previous shifter did not leave the TriggerTool (TT) open for you then you need to load it
- Default version can be found in the Trigger menu on the toolbar



- Should pop up like this
- Select your user level
 - This defines the features you can access
 - 'Shifter' is the default for shifters
- Hit login to connect to the P1 TrigDB

Starting the TriggerTool on lxplus

- If you have a private database/the P1 DB replica you want to connect to you can do so running from the script on afs
 - `source /afs/cern.ch/user/a/attrgcnf/TriggerTool/run_TriggerTool_Run2.sh`
- If you follow the same instructions for P1, you will be connected to a read only replica of the online P1 DB
- Here you can browse the loaded menus without causing any damage



- When you start up the TT from a terminal it goes to looks for a .triggertool file in your \$HOME
- This defines the DBs you have access to one line at a time in the format
 - DB Tech, DB location, username, dbname, password
 - e.g. Oracle, DEVDB11, MARTYNIU, MARTYNIU, *****

MainPanel: The Hub of the TT

The screenshot shows the TriggerTool's MainPanel. At the top, a status bar reads "TriggerTool trunk Sun Nov 16 23:29:20 CET 2014 : Expert trigger shifter using oracle (MARTYNIU@oradev11.cern.ch)". Below is a menu bar with File, Menu, Work, Level 1, Load/Save, View, Help. A toolbar includes "SuperMaster", "Find all", "Search", "Hide", "Show hidden S...", "Advanced Search", and "Find Paren...". The main area is a table with columns: ID, Name, Version, Comment, Origin, Releases, Status, Menu Consistency, Creator, and Date. Data rows are: 4 Physics_pp_v5 4 pp_v5 20.0.0 xml upload 20.0.0 OnL Not Run trigger shifter 2014-11-17 16:02...; 3 Physics_pp_v5 3 pp_v5 19.3.0.1: Fir. xml upload 19.3.0.1 OnL Not Run trigger shifter 2014-11-17 15:58...; 2 Physics_pp_v5 2 pp_v5 19.3.0 xml upload 19.3.0 OnL Not Run trigger shifter 2014-11-17 15:53...; 1 Physics_pp_v5 1 pp_v5 19.1.3 xml upload 19.1.3 OnL Not Run trigger shifter 2014-11-17 15:45.... Two red callouts point to the table rows: one pointing to row 1 with the text "Single click on a row selects a menu", and another pointing to row 1 with the text "Double click to load the overview panel". The bottom navigation bar has tabs for Tree and Menu, with "status" selected.

ID	Name	Version	Comment	Origin	Releases	Status	Menu Consistency	Creator	Date
4	Physics_pp_v5	4	pp_v5 20.0.0	xml upload	20.0.0	OnL	Not Run	trigger shifter	2014-11-17 16:02...
3	Physics_pp_v5	3	pp_v5 19.3.0.1: Fir.	xml upload	19.3.0.1	OnL	Not Run	trigger shifter	2014-11-17 15:58...
2	Physics_pp_v5	2	pp_v5 19.3.0	xml upload	19.3.0	OnL	Not Run	trigger shifter	2014-11-17 15:53...
1	Physics_pp_v5	1	pp_v5 19.1.3	xml upload	19.1.3	OnL	Not Run	trigger shifter	2014-11-17 15:45...

- The MainPanel is the central panel of the TT
- It displays basic information for tables in the TrigDb
- By default it loads the SMKs loaded into the current DB
- Can use the search functionality to narrow down the list of SMKs (or any other TrigDb table)
- Can hide/show obsolete/incorrect SMKs to avoid them being used accidentally

MainPanel: Visualising SMKs (Simple)

The screenshot shows the TriggerTool interface. At the top, there's a menu bar with File, Menu, Work, Level 1, Load/Save, View, Help. Below the menu is a search bar with 'Find all' and 'Search' buttons, and a 'Show hidden S...' button. There are also 'Advanced Search' and 'Find Parent...' buttons.

The main area contains a table with columns: ID, Name, Version, Comment, Origin, Releases, Status, Menu Consistency, Creator, and Date. The table lists four entries:

ID	Name	Version	Comment	Origin	Releases	Status	Menu Consistency	Creator	Date	
4	Physics_pp_v5	4	pp_v5 20.0.0	xml upload	20.0.0	OnL	Not Run	trigger shifter	2014-11-17 16:02..	
3	Physics_pp_v5	3	pp_v5 19.3.0.1: Fir...	xml upload	19.3.0.1	OnL	Not Run	trigger shifter	2014-11-17 15:58..	
2	Physics_pp_v5	2	Click here...	pp_v5 19.3.0	xml upload	19.3.0	OnL	Not Run	trigger shifter	2014-11-17 15:53..
1	Physics_pp_v5	1	pp_v5 19.1.3	xml upload	19.1.3	OnL	Not Run	trigger shifter	2014-11-17 15:45..	

Below the table, there's a section titled 'L1 Prescale Sets' with a list: 3 Physics_pp_v5_default_..., 8 Physics_pp_v5 / 8, 4 Physics_pp_v5 / 4, 3 Physics_pp_v5 / 3. It also shows 'L1 and HLT Prescale Sets' and 'Loads here....' with a red box around it.

The right side of the interface shows a tree structure under 'HLT Prescale Sets'. A node labeled 'L1_EM3' has several children: 'L1_Items' (with a red box around it), 'HLT_noalg_L1EM3', 'HLT_e5_looseL', 'HLT_e5_lhlooseL', 'HLT_e5_etcutL', 'HLT_g5_etcutL', 'HLT_e0_perf_L1EM3', and 'HLT_e0_L2Star_perf_L1EM3'. A red box highlights the 'L1_Items' node, and text above it says 'HLT Chains seeded from the linked L1 Item'.

- Selecting a SMK entry on the MainPanel gives you a graphical overview of the menu contents
- Shows you the associated prescale sets
- Shows the L1->HLT seeding of chains

MainPanel: SMKs contents (Simple)

TriggerTool trunk Tue Nov 11 13:15:10 CET 2014 : Expert trigger shifter using oracle (MARTYNIU@oradev11.cern.ch)

File Menu Work Level 1 Load/Save View Help

SuperMaster Find all Search Hide Show hidden S... Advanced Search Find Paren...

ID	Name	Version	Comment	Origin	Releases	Status	Menu Consistency	Creator	Date
4	Physics_pp_v5	4	pp_v5 20.0.0	xml upload	20.0.0	OnL	Not Run	trigger shifter	2014-11-17 16:02...
3	Physics_pp_v5	3	pp_v5 19.3.0.1: Fir...	xml upload	19.3.0.1	OnL	Not Run	trigger shifter	2014-11-17 15:58...
2	Physics_pp_v5	2	pp_v5 19.3.0	xml upload	19.3.0	OnL	Not Run	trigger shifter	2014-11-17 15:53...
1	Physics_pp_v5	1	pp_v5 19.1.3	xml upload	19.1.3	OnL	Not Run	trigger shifter	2014-11-17 15:45...

3: Physics_pp_v5 v3
└ L1 MASTER: ID=3, Name=Physics_pp_v5, Version=3
 ├ L1 MENU: ID=3, Name=Physics_pp_v5, Version=3
 ├ L1 MUON: ID=1, Name=Unasigned, Version=1
 ├ L1 MUCY: ID=1, Name=Unasigned, Version=1
 ├ L1 RANDOM: ID=1, Name=null, Version=null
 └ L1 PRESCALED CLOCK: id=1, name=psc01, version=1

Select a table

Field	Value
CTP Files ID	1
CTP SMX ID	1
CTP Safe	0
ID	3
Name	Physics_pp_v5
Phase	lumi
Version	3

Displays selected table's contents

Tree Menu

status Click for tree view...

- Selecting the "Tree" option gives you a file browser/tree view of the menu contents
- It allows you to select individual tables in the TrigDb
- Shows you the full content of those tables

MainPanel: Loading SMKs

The screenshot shows the TriggerTool interface. At the top, there's a menu bar with File, Menu, Work, Level 1, Load/Save, View, Help. The Load/Save menu is highlighted with a red oval and labeled "Click here...". Below the menu is a toolbar with buttons for Load/Save, Upload from XML (highlighted with a red oval and labeled "Select upload"), Download as XML, Search, Hide, Show hidden S..., Advanced Search, and Find Parent... .

The main area contains a table with columns: ID, Name, Comment, Origin, Releases, Status, Menu Consistency, Creator, and Date. The table lists four entries:

ID	Name	Comment	Origin	Releases	Status	Menu Consistency	Creator	Date
4	Physics_pp_v5	pp_v5 20.0.0	xml upload	20.0.0	OnL	Not Run	trigger shifter	2014-11-17 16:02...
3	Physics_pp_v5	pp_v5 19.3.0.1 Fir...	xml upload	19.3.0.1	OnL	Not Run	trigger shifter	2014-11-17 15:58...
2	Physics_pp_v5	pp_v5 19.3.0	xml upload	19.3.0	OnL	Not Run	trigger shifter	2014-11-17 15:53...
1	Physics_pp_v5	pp_v5 19.1.3	xml upload	19.1.3	OnL	Not Run	trigger shifter	2014-11-17 15:45...

On the left, there's a tree view showing a hierarchy under "3: Physics_pp_v5 v3": L1 MASTER, L1 MENU, L1 MUON THRESHOLD SET, L1 MUCTPI INFO, L1 RANDOM, and L1 PRESCALED CLOCK. On the right, there's an "Upload Panel" with fields for CTP Files ID, CTP SMX ID, CTP Safe, ID, Name, Phase, and Version.

- Not really a shifter task but you might want to populate a private DB
- If you want to load a SMK hit the Load/Save menu
- Select Upload from XML
- This will load the Upload Panel

Upload Panel: Loading Menu XMLs

XML Upload

Select the levels you want to upload

Topo only Topo & CTP Topo, CTP & HLT

Topo

Use **Topo xml file** rn.ch/user/m/martyniu/TriggerSplit/TrigDb-02-00-01-branch/XML/L1Topoconfig_Physics_pp_v5_19.3.0.1.xml

Use existing Topo Key Physics_pp_v...

Can browse for local XML files

L1

Use **L1 xml file** /cern.ch/user/m/martyniu/TriggerSplit/TrigDb-02-00-01-branch/XML/LVL1config_Physics_pp_v5_19.3.0.1.xml

Use existing L1 Key 2 Physics_pp_v...

Or select from ones in the DB

HLT

Use **HLT Menu** /cern.ch/user/m/martyniu/TriggerSplit/TrigDb-02-00-01-branch/XML/HLTconfig_Physics_pp_v5_19.3.0.1.xml

Use **HLT Setup** /afs/cern.ch/user/m/martyniu/TriggerSplit/TrigDb-02-00-01-branch/XML/HLTSetup_19.3.0.1.xml

Use existing HLT Key 2 Physics_pp_v...

Define the relevant release

Release

SW Release 19.3.0.1

Use existing Rel. Key 2 19.3.0

Define the menu name
(Automatic from the XML files)

Name and type of configuration

Predefined name Name: Physics_pp_v5

Online configuration
 Monte Carlo configuration

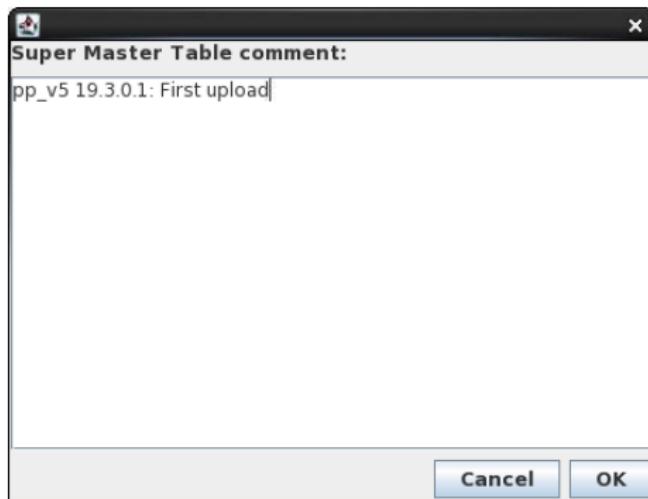
Online or MC menu?

Hit OK to save...
Then wait....

Upload finished



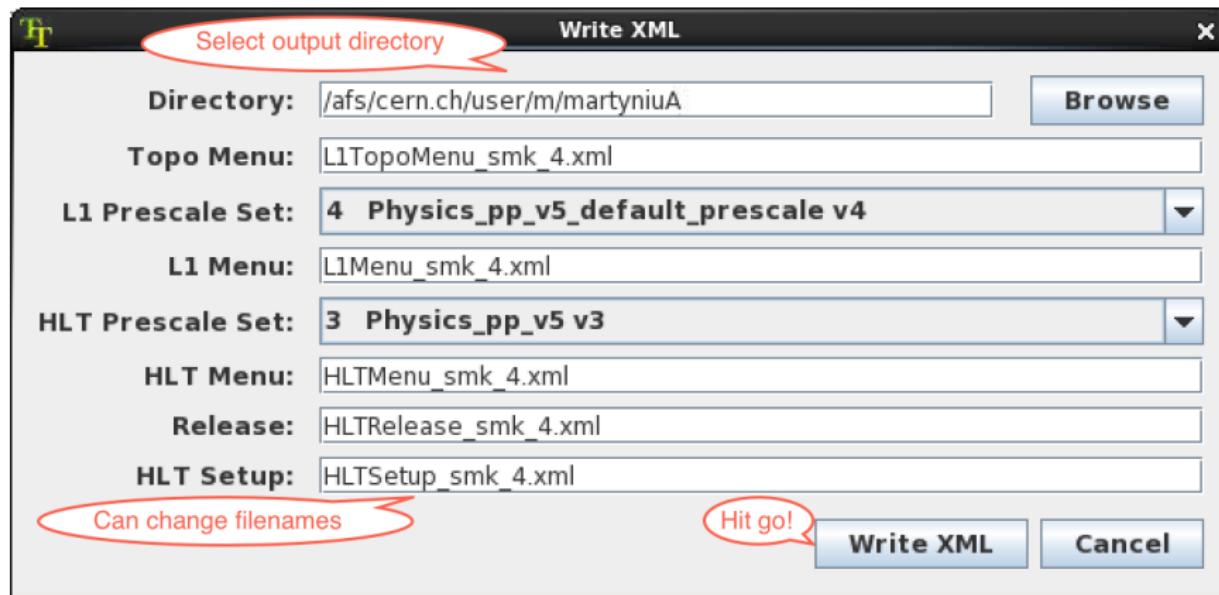
- Informs you if it saved a new SMK or returned an existing one from the DB
- Gives you the details of the keys associated with the SMK



- Gives you the opportunity to attach a human readable comment to the SMK (encouraged!)

Upload finished

- Can also download a selected SMK to XML files
- Simply select the desired SMK and hit “Download as XML” in the Load/Save menu



Common shifter actions with the TT

- The most common action is to change the prescales
 - Enable/disable Items/Chains from the L1/HLT menu
 - Alter prescale rate
 - During commissioning and data taking
 - *Only under instruction from the expert!*
- May also be asked to find information
 - Configuration of the streaming
 - Settings of a particular property
- Other shifter tasks:
 - Assign existing prescale sets to new menus (will be automated)
 - Describe configurations (comments)
 - Change properties to a certain extent, *as requested by the on-call trigger or menu expert*

MainPanel: Altering prescales

The screenshot shows the TriggerTool interface. The title bar reads "TriggerTool trunk Tue Nov 11 13:15:10 CET 2014 : Expert trigger shifter using oracle (MARTYNIU@oradev11.cern.ch)". The menu bar includes File, Menu Work, Level 1, Load/Save, View, and Help. The "Menu Work" option is highlighted. A red oval highlights the "Prescales" link in the left sidebar under the "Assign Prescale S..." section. The main area displays a table titled "Prescales" with columns: ID, Version, Comment, Origin, Releases, Status, Menu Consistency, Creator, and Date. Several rows are listed, such as Set Alias (version 5, comment pp_v5 20.0), Set Status (version 5, comment pp_v5 19.3.0.1), and View Algorithms (version 5, comment pp_v5 19.1.3). Below the table, a "Consistency Check" section is expanded, showing details for a Physics_pp_v5 menu. A detailed configuration panel is open, listing fields like CTP Files ID, CTP SMX ID, CTP Safe, ID, Name, Phase, and Version, each with its corresponding value.

- To alter the prescales, first select a menu
- Hit menu work
- Then prescales to load the prescales edit panel

L1 Prescale Panel: Overview

TT Prescale Editor: SMK 4: Physics_pp_v5 v4 Editable = true

L1 Prescales HLT Prescales Hit for HLT...

Available Sets Hide See hidden sets

4: Physics_pp_v5_default_pres... Hide selected PS set

Available L1 PS sets

Prescale Set Name: Physics_pp_v5_default_prescale

Filter list by Item name

Trigger type: All Types

Filter by trigger type

Reset Filter Diff Selected Sets

Can sort columns Asc/Desc

Comment Field for Set ID 4

null comment

Add a comment!

Positive == Active
Negative == Disabled

Flips active-disabled

CTP Item Prescale Value Prescale cut In/Out

CTP Item	Prescale Value	Prescale cut	In/Out
CTP ID: 0 / L1_EM3	100	000001	✓
CTP ID: 1 / L1_EM7	100	000001	✓
CTP ID: 2 / L1_EM12	100	000001	✓
CTP ID: 3 / L1_EM8VH	100	000001	✓
CTP ID: 4 / L1_EM10VH	100	000001	✓
CTP ID: 5 / L1_EM13VH	100	000001	✓
CTP ID: 6 / L1_EM8I	100	000001	✓
CTP ID: 7 / L1_EM15	100	000001	✓
CTP ID: 8 / L1_EM15I	100	000001	✓
CTP ID: 9 / L1_EM15HI	100	000001	✓
CTP ID: 10 / L1_EM15VH	100	000001	✓
CTP ID: 11 / L1_EM18VH	100	000001	✓
CTP ID: 12 / L1_EM20VH	100	000001	✓
CTP ID: 13 / L1_EM20VHI	100	000001	✓
CTP ID: 14 / L1_EM22VHUL	100	000001	✓
CTP ID: 15 / L1_EM22VHUL	100	000001	✓
CTP ID: 16 / L1_EM22VHUL	100	000001	✓
CTP ID: 17 / L1_EM22VHUL	100	000001	✓
CTP ID: 18 / L1_EM22VHUL	100	000001	✓
CTP ID: 19 / L1_EM23ETA49	100	000001	✓
CTP ID: 20 / L1_MU4	100	000001	✓
CTP ID: 21 / L1_MU6	100	000001	✓

Update all Update comment for set ID 4 Multiple Prescales Enable All/Selection Disable All/Selection

load XML

Use to load PS XMLs

Save

Save changes

Close

L1 Prescale Panel: Filtering

TT Prescale Editor: SMK 4: Physics_pp_v5 v4 Editable = true

L1 Prescales HLT Prescales

Available Sets Hide See hidden ...

Prescale Set Name: Physics_pp_v5_default_prescale

Item name filtering
Item name: 2mu
Type: All Types Reset Filter

Compare sets
4: Physics_pp_v5_default_pres...
4: Physics_pp_v5_default_pres...

Diff Selected Sets

Type what you want to search here. The table will update as you type. Regex interpretation is available

Item	Prescale Value	Prescale cut	In/Out
CTP ID: 38 / L1_2MU4	1.00	000001	✓
CTP ID: 39 / L1_2MU6	1.00	000001	✓
CTP ID: 40 / L1_MU10_2MU6	1.00	000001	✓
CTP ID: 41 / L1_MU10_2MU4	1.00	000001	✓
CTP ID: 45 / L1_EM8VH_2MU6	1.00	000001	✓

All actions now possible on the sub set visible

Comment Field for Set ID 4
null comment

Update all Update comment for set ID 4 Multiple Prescales Enable All/Selection Disable All/Selection

load XML Save

Save will still save the full set

Close

TriggerTool trunk Tue Nov 11 19:15:10 CEST 2014 - Event

L1 Prescale Panel: Filtering

TT Prescale Editor: SMK 4: Physics_pp_v5 v4 Editable = true

L1 Prescales HLT Prescales

Available Sets Hide See hidden sets

Prescale Set Name: Physics_pp_v5_default_prescale

Item name filtering: Item name: []

Trigger type: Muonswbeam (136) []

Reset Filter Diff Selected Sets

Select all triggers of a certain type. Choose from a drop down box

Can be used in combination with an item name filter

Kill all active filters

CTP Item	Input Prescale	Actual Prescale	In/Out
CTP ID: 20 / L1_MU4	1.0	1.0	✓
CTP ID: 21 / L1_MU6	1.0	1.0	✓
CTP ID: 22 / L1_MU10	1.0	1.0	✓
CTP ID: 23 / L1_MU11	1.0	1.0	✓
CTP ID: 24 / L1_MU15	1.0	1.0	✓
CTP ID: 25 / L1_MU20	1.0	1.0	✓
CTP ID: 26 / L1_MU4_EMPTY	1.0	1.0	✓
CTP ID: 27 / L1_MU11_EMPTY	1.0	1.0	✓
CTP ID: 28 / L1_MU4_UNPAIR...	1.0	1.0	✓
CTP ID: 37 / L1_2MU4	1.0	1.0	✓
CTP ID: 38 / L1_2MU6	1.0	1.0	✓
CTP ID: 39 / L1_2MU10	1.0	1.0	✓
CTP ID: 40 / L1_MU10_2MU6	1.0	1.0	✓
CTP ID: 41 / L1_MU10_2MU4	1.0	1.0	✓
CTP ID: 42 / L1_3MU6	1.0	1.0	✓
CTP ID: 43 / L1_EM15 MU4	1.0	1.0	✓
CTP ID: 44 / L1_2EM8VH MU1010	1.0	1.0	✓
CTP ID: 45 / L1_EM8VH_2MU6	1.0	1.0	✓
CTP ID: 46 / L1_EM15VH MU1010	1.0	1.0	✓

Comment Field for Set ID 4
null comment

Update all Update comment for set ID 4 Multiple Prescales Enable All/Selection Disable All/Selection

load XML Save

Close

HLT Prescale Panel: Overview

TT Prescale Editor: SMK 4: Physics_pp_v5 v4 Editable = true

L1 Prescales HLT Prescales

Available Sets Hide See hidden ...

Prescale Set Name: Physics_pp_v5

Filters

Chain name: []

L1 seed: []

Groups: All Groups

Streams: All Streams

3: Physics_pp_v5 v3

3: Physics_pp_v5 v3

Diff Selected...

Similar features to L1

(Express) stream prescales (na means locked)

In/Out attached to PS only

Pass-through

Negative or 0 means off!

Re-run under development

Comment Field for Set ID 3

Comment should be useful:
E.g. 75kHz random trigger added
Not: For Nov.5th Run

Enable All/Selection Disable All/Selection

Save

Close

Chain	L1 seed	Counter	In/Out	PS	PT	Stream	Condition	ReRun
HLT mu4 cosmic L1MU4 EMPTY	L1 MU4_EMPTY	6010	<input checked="" type="checkbox"/>	1	0	na	na	-1:0
HLT mu4 cosmic L1MU11 EMPTY	L1 MU11_EMPTY	6011	<input checked="" type="checkbox"/>	1	0	na	na	-1:0
HLT mu4 msonly cosmic L1MU... L1 MU11 EMPTY		6012	<input checked="" type="checkbox"/>	1	0	na	na	-1:0
HLT mu4 cosmic L1MU4 EMPTY	L1 MU4_EMPTY	6553	<input checked="" type="checkbox"/>	1	0	na	na	-1:0
HLT mu4 msonly cosmic L1MU... L1 MU11 EMPTY		6552	<input checked="" type="checkbox"/>	0	0	na	na	-1:0
HLT mu4 cosmicEF ds1 L1MU4 L1 MU4		6550	<input checked="" type="checkbox"/>	1	0	na	na	-1:0
HLT mu4 cosmicEF ds2 L1MU4 L1 MU4		6551	<input checked="" type="checkbox"/>	0	0	na	na	-1:0
HLT mu0 muoncalib	L1 MU0	6554	<input checked="" type="checkbox"/>	0	0	na	na	-1:0
HLT j0 perf L1RDO EMPTY	L1 RDO EMPTY	6550	<input checked="" type="checkbox"/>	1	0	na	na	-1:0
HLT j0 perf L1MU10	L1 MU10	6550	<input checked="" type="checkbox"/>	1	0	na	na	-1:0
HLT j0 perf L1J12	L1 J12	6549	<input checked="" type="checkbox"/>	1	0	na	na	-1:0
HLT j0 perf bperf L1RDO EMPTY	L1 RDO EMPTY	6548	<input checked="" type="checkbox"/>	1	0	na	na	-1:0
HLT j0 perf bperf L1MU10	L1 MU10	6676	<input checked="" type="checkbox"/>	1	0	na	na	-1:0
HLT j0 perf bperf L1J12	L1 J12	956	<input checked="" type="checkbox"/>	1	0	na	na	-1:0
HLT e5 loose1	L1 EM3	6433	<input checked="" type="checkbox"/>	1	0	na	na	-1:0
		6677	<input checked="" type="checkbox"/>	1	0	na	na	-1:0

HLT Prescale Panel: Enable/Disable

Same principle applies to the L1 enable/disable
Works even when the table is filtered or sorted

Comment Field for Set ID 3

Can select regions before enable/disabling

Hitting buttons either enable/disable all or the current selection

Only affects region selected

Chain	L1 seed	Counter	In/Out	PS	PT	Stream	Condition	ReRun
HLT mu4_cosmic_L1MU4_EMPTY_L1_MU4_EMPTY	6010		<input checked="" type="checkbox"/>	1	0	na	na	-1;0;
HLT mu4_cosmic_L1MU11_EMPTY_L1_MU11_EMPTY	6011		<input checked="" type="checkbox"/>	1	0	na	na	-1;0;
HLT mu4_msonly cosmic_L1MU..._L1_MU11_EMPTY	6012		<input checked="" type="checkbox"/>	1	0	na	na	-1;0;
HLT mu4_cosmicEF_L1MU4_EM..._L1_MU4_EMPTY	6013		<input checked="" type="checkbox"/>	1	0	na	na	-1;0;
HLT mu4_cosmicEF_L1MU11_E_L1_MU11_EMPTY	6555		<input checked="" type="checkbox"/>	1	0	na	na	-1;0;
HLT mu4_msonly cosmicEF_L1..._L1_MU11_EMPTY	6553		<input checked="" type="checkbox"/>	-1	0	na	na	-1;0;
HLT mu4_msonly cosmicEF_L1..._L1_MU4_EMPTY	6552		<input checked="" type="checkbox"/>	-1	0	na	na	-1;0;
HLT mu4_cosmicEF_ds1_L1MU4_L1_MU4	6559		<input type="checkbox"/>	-1	0	na	na	-1;0;
HLT mu4_cosmicEF_ds2_L1MU4_L1_MU4	6558		<input type="checkbox"/>	-1	0	na	na	-1;0;
HLT mu0_muoncalib_L1_MU4	6556		<input type="checkbox"/>	-1	0	na	na	-1;0;
HLT J0_perf_L1RD0_EMPTY_L1_RD0_EMPTY	6551		<input type="checkbox"/>	-1	0	na	na	-1;0;
HLT J0_perf_L1MU10_L1_MU10	6550		<input type="checkbox"/>	-1	0	na	na	-1;0;
HLT J0_perf_L1J12_L1_J12	6549		<input type="checkbox"/>	-1	0	na	na	-1;0;
bperf bperf_L1RD0_EMPTY_L1_RD0_EMPTY	6548		<input checked="" type="checkbox"/>	1	0	na	na	-1;0;
bperf bperf_L1MU10_L1_MU10	6676		<input checked="" type="checkbox"/>	1	0	na	na	-1;0;
bperf bperf_L1J12_L1_J12	956		<input checked="" type="checkbox"/>	1	0	na	na	-1;0;
else1_L1_EM3	6433		<input checked="" type="checkbox"/>	1	0	na	na	-1;0;
else2_EM3	6557		<input type="checkbox"/>	1	0	na	na	-1;0;

TT Prescale Editor: SMK 3: Physics_pp_v5 v3 Editable = true

L1 Prescales HLT Prescales

Available Sets Hide See hidden ...

Prescale Set Name: Physics_pp_v5

Filters

Chain name:

L1 seed:

Groups: All Groups

Streams: All Streams

Compare sets

3: Physics_pp_v5 v3

3: Physics_pp_v5 v3

Diff Selected...

Reset

Update Comment

Load XML Prescales

Enable All/Selection

Disable All/Selection

Save

Close

HLT Prescale Panel: Diffing prescale sets

Prescale Set Name: Physics_pp_v5_muonandRD0filled

Filters Filtering also works here!

Chain name:

L1 seed:

Groups: All Groups

Streams: All Streams

Compare sets

3: Physics_pp_v5_TR12 v1

4: Physics_pp_v5_muonandRD...

Diff Selected...

Only chains with prescale differences between the sets will be shown

Can select any two sets associated to the current key to diff. Changing the sets reloads the diff table.

Chain Name	Counter	Prescale ...	Prescale ...	Passthru...	Passthru...	Stream: 1	Stream: 2	Condition...	Condition...
HLT_e5_etcut_L1EM3_EMPTY	1	1.0	-1.0	0.0	0.0				
HLT_g5_etcut	2	1.0	-1.0	0.0	0.0				
HLT_g5_etcut_L1EM3_EMPTY	3	1.0	-1.0	0.0	0.0				
HLT_j0_perf_L1RDO_EMPTY	4	1.0	-1.0	0.0	0.0				
HLT_j0_perf_L1MU10	5	1.0	-1.0	0.0	0.0				
HLT_j0_perf_L1J12	6	1.0	-1.0	0.0	0.0				
HLT_htt0_perf_L1J12	7	1.0	-1.0	0.0	0.0				
HLT_j0_perf_bperf_L1RDO_EMPTY	8	1.0	-1.0	0.0	0.0				
HLT_j0_perf_bperf_L1MU10	9	1.0	-1.0	0.0	0.0				
HLT_j0_perf_bperf_L1J12	10	1.0	-1.0	0.0	0.0				
HLT_mu4_cosmic_L1MU4_EMPTY	11	1.0	-1.0	0.0	0.0				
HLT_mu4_cosmic_L1MU11_EMPTY	12	1.0	-1.0						
HLT_mu4_msonly_cosmic_L1MU11_EMPTY	13	1.0	-1.0						
HLT_mu4_cosmicEF_L1MU4_EMPTY	14	1.0	-1.0						
HLT_mu4_cosmicEF_L1MU11_EMPTY	15	1.0	-1.0	0.0	0.0				
HLT_mu4_msonly_cosmicEF_L1MU4_EMPTY	17	1.0	-1.0	0.0	0.0				
HLT_mu4_msonly_cosmicEF_L1MU11_EMPTY	16	1.0	-1.0	0.0	0.0				
HLT_2mu4_bDimu	19	1.0	-1.0	0.0	0.0				
HLT_mu0_muoncalib	18	1.0	-1.0	0.0	0.0				

Differences are shown here, set 1 | set 2

Assign prescale sets

- Feature in same menu as prescale editing (as is aliasing on next slide)
- Will be automated once stable running is achieved

The screenshot shows a window titled "Assign prescale sets" with four main sections:

- All Available L1 Prescale Sets:** A list of prescale sets including tmp-ZDC/ver. 1, RD0_50kHz_for RND157/ver. 1, RD0_75kHz_for RND157/ver. 1, RD0_10Hz_for RND157/ver. 1, and various J5+EM3+... combinations.
- Available L1/HLT sets:** An annotation pointing to the first three items in the L1 list.
- Currently Linked L1 Prescale Sets:** A list of prescale sets including tmp-ZDC/ver. 1, RD0_50kHz_for RND157/ver. 1, RD0_75kHz_for RND157/ver. 1, RD0_10Hz_for RND157/ver. 1, and various J5+EM3+... combinations.
- Currently assigned L1/HLT PSSs for this menu:** An annotation pointing to the first three items in the L1 list.

The bottom section contains two more lists:

- All Available HLT Prescale Sets:** A list of prescale sets including CosCalo+CaloFilt+CosMuRPC+Phys+calibnoRPCps+muonEF+e5SW+, CosCalo+CaloFilt+CosMuRPC+Phys+calibnoRPCps+muonEF+e5SW+, CosmicCalo+CaloFilter+CosMuRPC+Physics+calibnoRPCps+muone, CosCalo+CaloFilt+CosMuRPC+Phys+calibnoRPCps+muonEF+e5SW+, CosCalo+CaloFilt+CosmicRPC+Phys+calibnoRPCps+muonEF+e5SW+, CosmicCalo+CaloFilter+CosmicRPC+Physics+calibnoRPCps+muonEF, CosmicCalo+CaloFilter+CosmicRPC+Physics+calibnoRPCps+muonEF, hltweek_15.0.1.4_0507_step5p1/ver. 1, and CosmicCalo+CaloFilter+CosmicRPC+Physics+calibnoRPCps+muonEF.
- Currently Linked HLT Prescale Sets:** A list of prescale sets including CosmicCalo+CaloFilter+CosmicRPC+Physics+calibnoRPCps+muonEF and HLT Cosmic Week, final test of 15.0.1.3 menu/ver. 1.

An annotation at the bottom right points to the "Add" button in the HLT section with the text: "Add selected PS set to the menu. Any missing chains in the menu but not the PSS will get a default value."

Buttons at the bottom right include "Add" (under L1 and HLT lists), "Done" (under HLT list), and a large "Done" button at the bottom right corner.

Prescale Aliasing: New Run-2 feature

Prescale Set Aliases

L1 PSK	HLT PSK	Comment	Lumi Min	Lumi Max
3: Physics_pp_v5_d...	3: Physics_pp_v5_v3	Lowest lumi range	200	100
3: Physics_pp_v5_d...	3: Physics_pp_v5_v3		100	200
3: Physics_pp_v5_d...	3: Physics_pp_v5_v3	3rd	200	250
3: Physics_pp_v5_d...	3: Physics_pp_v5_v3	4th	300	400
3: Physics_pp_v5_d...	3: Physics_pp_v5_v3	5th	400	500
3: Physics_pp_v5_d...	3: Physics_pp_v5_v3	6th	500	0
3: Physics_pp_v5_d...	3: Physics_pp_v5_v3	7th	1000	200
3: Physics_pp_v5_d...	3: Physics_pp_v5_v3	8th	2000	3000
3: Physics_pp_v5_d...	3: Physics_pp_v5_v3	9th	3000	4000
3: Physics_pp_v5_d...	3: Physics_pp_v5_v3	Highest lumi range	4000	5000

Select PSSs (Red oval)

Shows min>max (Red oval)

Shows lumi gap: (Red oval)

Can add rows (Red oval)

Select pre-existing aliases (Red oval)

Create a new alias set (Red oval)

Create a new alias (Red oval)

Comment (Red oval)

Make sensible comments (Red oval)

Make new ones (Red oval)

Load XML (Red oval)

Will be able to upload a block of PS XMLs and their lumi ranges. (Red oval)

Save

Browse

Close

Streams

- Experts/run-control/etc. might well ask what streams are running
- The "View Streams" option from the "Menu Work" menu on the main panel will load this panel
- Similar panels available for Algorithms and Groups

The screenshot shows a software interface titled "Stream View". On the left, there is a list of streams with their IDs and names:

- STREAM: ID=1, Name=jetTauEtmiss
- STREAM: ID=2, Name=express
- STREAM: ID=3, Name=egamma** (highlighted with a blue background)
- STREAM: ID=4, Name=muons
- STREAM: ID=5, Name=minbias
- STREAM: ID=39, Name=lDTracks
- STREAM: ID=50, Name=LAr

A red oval highlights the text "Streams in menu".

A red box contains the text: "Can also view this info through the prescale panel using the stream filter option".

A red oval highlights the text "Chains associated with the stream".

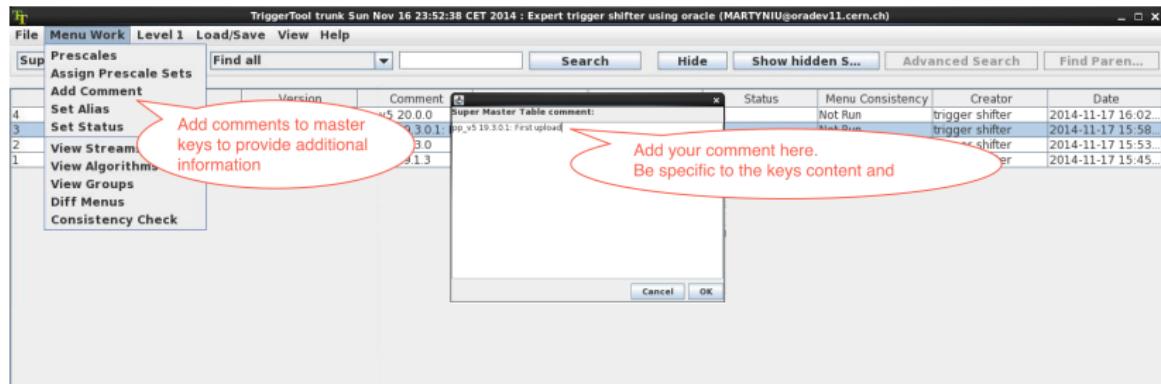
On the right, there is a table showing the chains associated with the selected stream (ID=3, Name=egamma). The table has columns: Chain Name, Level, Counter, Prescale, and Seed.

Chain Name	Level	Counter	Prescale	Seed
L2_e20_loose	L2	7	1.0	L2_e20_loose
L2_e20_loose	L2	8		
L2_e20_loose_passL2	L2	22		
L2_e20_loose_passEF	L2	23		
L2_e5_medium	L2	28		
L2_e10_medium	L2	30	1.0	
L2_g10_loose	L2	36	1.0	
L2_g20_loose	L2	39	1.0	
L2_g20_loose	L2	40	1.0	
L2_em20_passHLT	L2	47	1.0	
L2_em20_passHLT	L2	48	1.0	
L2_em105_passHLT	L2	50	1.0	
L2_e5_medium	L2	60	1.0	
L2_2g20_loose	L2	79	1.0	
L2_g25_loose_xe30	L2	243	1.0	
L2_e10_medium_SiTrk	L2	581	1.0	
L2_e20_loose_SiTrk	L2	583	1.0	
EF_e20_loose	EF	7	1.0	
EF_e20_loose	EF	8	1.0	
EF_e20_loose_passL2	EF	22	1.0	
EF_e20_loose_passEF	EF	23	1.0	
EF_e5_medium	EF	28	1.0	
EF_e10_medium	EF	30	1.0	

A red oval highlights the text "Seed of selected chain".

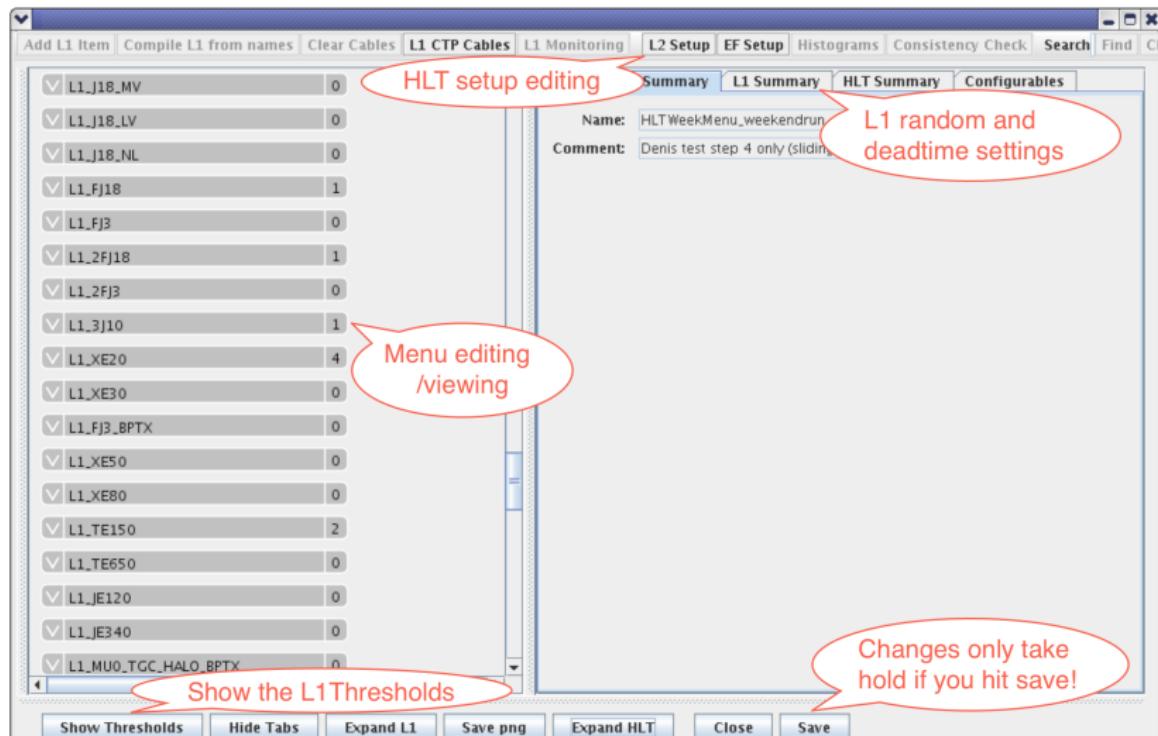
Commenting on tables

- Comments on the Super/Topo/L1/HLT master tables can be made at any point
- Altering these comments do not alter the configuration
- It is important to comment the Supermaster/TopoMaster/L1Master/HLTMaster as these can be seen by run-control
- You can convey useful information (one desk across) in this way



The OverviewPanel: Menu viewing/editing

- If you double click on a SMK in the MainPanel you get the OverviewPanel



The OverviewPanel: Menu viewing

- You can view the menu

The screenshot shows the OverviewPanel interface with several annotations:

- L1 Items:** A red oval highlights the "L1 Items" section at the top left.
- L2 Chains:** A red oval highlights the "L2 xe20" chain under the L1 items.
- Number of L2 chains seeded (Click to show):** A red speech bubble points to the number "4" next to the L2 xe20 entry.
- Number of EF chains seeded (Click to show):** A red speech bubble points to the number "1" next to the "EF_xe20_FEB" entry.
- Slow in Run-1 (this version). Will be overhauled in Run-2 version.**: A red box surrounds a note about the L2 xe20 chain.
- Unfold to show/hide info:** A red oval points to the "EF_xe20_FEB" entry, which has a small arrow pointing to a detailed info box.
- Comment: Comment**, **User Version: 1**, **Lower Chain: L2_xe20_FEB**, **Counter: 524**, **Rerun prescale: -1**: The detailed info box contains these fields.
- Signatures**, **Streams**, **Types**, **Groups**: Buttons in the info box.
- Output TE(s): EFID_mu6i, EF_mu6i, ...**: A checked checkbox in the info box.
- 2009-04-24 11:49:14.0 paul**: Date and user information at the bottom of the info box.
- EF Chains:** A red oval points to the "EFID_mu6i" entry in the info box.
- Can unfold for further information:** A red oval points to the "EFID_mu6i" entry in the info box.
- Hide other tables:** A red oval points to the "Hide other tables" button at the bottom left.
- Unfold full L1 info**: A red oval points to the "Expand L1" button at the bottom center.
- Unfold full HLT info**: A red oval points to the "Expand HLT" button at the bottom center.
- Show Thresholds**, **Show Tabs**, **Save png**, **Close**, **Save**: Buttons at the bottom of the panel.

The OverviewPanel: L1Thresholds

Add L1 item | Compile L1 from names | Clear Cables | **L1 CTP Cables** | L1 Monitor

Thresholds of items

<input checked="" type="checkbox"/> MU10
<input checked="" type="checkbox"/> MU11
<input checked="" type="checkbox"/> MU15
<input checked="" type="checkbox"/> MU20
<input checked="" type="checkbox"/> MU4
<input checked="" type="checkbox"/> MU6
<input checked="" type="checkbox"/> EM10VH
<input checked="" type="checkbox"/> EM12
<input checked="" type="checkbox"/> EM15
<input checked="" type="checkbox"/> EM15VH
<input checked="" type="checkbox"/> EM18VH
<input checked="" type="checkbox"/> EM20VH
<input checked="" type="checkbox"/> EM20VHI
<input checked="" type="checkbox"/> EM22VHUL
<input checked="" type="checkbox"/> EM3
<input checked="" type="checkbox"/> EM50V
<input checked="" type="checkbox"/> EM7
<input checked="" type="checkbox"/> EM8I

<input checked="" type="checkbox"/> L1_EM3
<input checked="" type="checkbox"/> L1_EM7
<input checked="" type="checkbox"/> L1_EM12
<input checked="" type="checkbox"/> L1_EM8VH
<input checked="" type="checkbox"/> L1_EM10VH
<input checked="" type="checkbox"/> L1_EM13VH
<input checked="" type="checkbox"/> L1_EM8I
<input checked="" type="checkbox"/> L1_EM15
<input checked="" type="checkbox"/> L1_EM15I
<input checked="" type="checkbox"/> L1_EM15HI
<input checked="" type="checkbox"/> L1_EM15VH
<input checked="" type="checkbox"/> L1_EM18VH
<input checked="" type="checkbox"/> L1_EM20VH
<input checked="" type="checkbox"/> L1_EM20VHI
<input checked="" type="checkbox"/> L1_EM22VHUL
<input checked="" type="checkbox"/> L1_EM50V
<input checked="" type="checkbox"/> L1_EM3_EMPTY
<input checked="" type="checkbox"/> L1_EM7_EMPTY
<input checked="" type="checkbox"/> L1_EM3_UNPAIRED_ISO

Can expand for more info; Cabling, window...

Show/Hide L1Thresholds

Hide Thresholds | Hide Tables | Expand L1 | Save png | Export

- You can view the L1Thresholds attached to the menu

The OverviewPanel: L1Summary Tab

- You can view the deadtime and random rate settings

The screenshot shows the OverviewPanel with the L1Summary tab selected. On the left, a tree view lists various L1 trigger paths with their status (e.g., L1_FJ18, L1_FJ3, L1_XE20). A red box highlights L1_XE20 with the note: "No longer responsibility of the TriggerShifter. Can still find the information here though." A red callout points to the "L1 Deadtime" section below.

The main panel contains the following configuration fields:

- L1 Master: SingleBeam_v1
- L1 Master Comment:
- L1 Menu: lumi01
- L1 Menu Phase: lumi
- Prescaled Clock: psc01
- Calo Info: CaloloInfo
- Muctpi Info: muctpi
- Random: rand01
- Random Rate 1: 157.2 kHz
- Random Rate 2: 157.2 kHz

A red callout points to the Random Rate fields with the text: "Alter random rates here".

The "L1 Deadtime" section includes:

- All Deadtime configs:
- Name: Commissioning
- Simple: 37
- Complex1 Rate: 400
- Complex1 Level: 8
- Complex2 Rate: 400
- Complex2 Level: 8

A red callout points to the "Complex1 Rate" field with the text: "Select deadtime from list". Another red callout points to the "Complex1 Rate" field with the text: "Can view the deadtime settings here".

At the bottom are buttons: Show Thresholds, Show Tabs, Expand L1, Save png, Expand HLT, Close, and Save.

The OverviewPanel: HLT Setup

- Only edit upon instructions from an expert!!!

Edit L2_Setup for HLTWeekMenu_weekendrun/1

L2 components of SM key HLTWee... Menu components (algorithms): 290 Infrastructure components: 407

Menu child components (algorithm tools): 589 Infrastructure child components: 22

Filter:

Parameter	Value
AcceptAll	False
AthenaMonTools	'!TrigTimeHistTool/L2JetHypo_Time', ...
AuditAlgorithms	True
AuditBeginRun	True
AuditEndRun	True
AuditExecute	True
AuditFinalize	True
AuditInitialize	True
AuditReinitialize	True
AuditRestart	True
AuditStart	True
AuditStop	True
Enable	True
ErrorCodeMap	()
ErrorCount	0
ErrorMax	1
Ecut_L2	5000.0
MonitorService	MonitorSvc
OutputLevel	3 INFO
doMonitoring_L2	False
doOperationalInfo	False

Add Component Done

T2CaloJet_JetT2CaloJet_Time (TrigTimeHistTool)
T2CaloJet_Jet.T2CaloJetCalibTool.T2SampCalibTool_Jet (T2sar)
L2Jethypo_j5 (TrigL2Jethypo)
L2Jethypo_j5.L2Jethypo_Time (TrigTimeHistTool)
L2Jethypo_j5.L2Jethypo_Online (TrigGenericMonitoringTool)
L2Jethypo_j70 (TrigL2Jethypo)
L2Jethypo_j70.L2Jethypo_Time (TrigTimeHistTool)
L2Jethypo_j70.L2Jethypo_Online (TrigGenericMonitoringTool)
L2Jethypo_fj18 (TrigL2Jethypo)
L2Jethypo_fj18.L2Jethypo_Time (TrigTimeHistTool)
L2Jethypo_fj18.L2Jethypo_Online (TrigGenericMonitoringTool)
TrigIDSCAN_Muon (TrigIDSCAN)
TrigIDSCAN_Muon.IDScanZFinder_Muon (DScanZFinder)
TrigIDSCAN_Muon.IDScanHitFilter_Muon (DScanHitFilter)
TrigIDSCAN_Muon.TrigIDSCAN_OnlineMonitoring (TrigGeneric)
TrigIDSCAN_Muon.Time (TrigTimeHistTool)
TrigSiTrack_Muon (TrigSiTrack)
TrigSiTrack_Muon.TrigSiTrack_OnlineMonitoring (TrigGeneric)

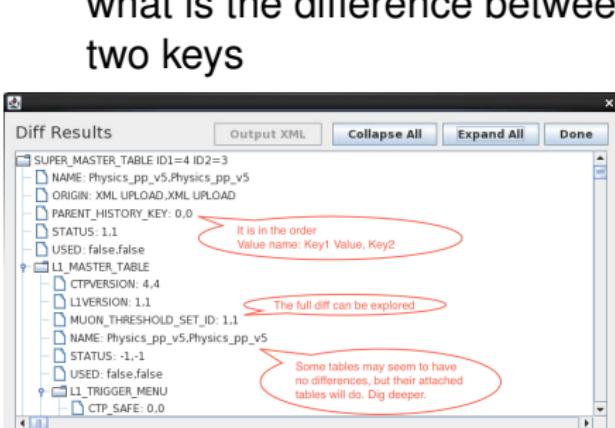
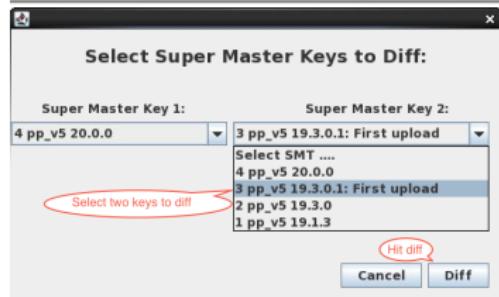
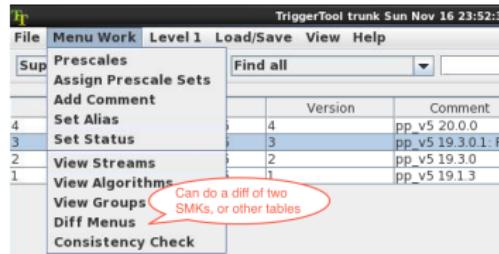
The OverviewPanel: HLT Setup

- Only edit upon instructions from an expert!!!

The screenshot shows the 'Edit L2_Setup for HLTWeekMenu_weekendrun/1' dialog box. The left pane lists components under 'L2 components of SM key HLTWee...', with a 'Filter' field set to 'IOVD'. A red oval highlights the 'Filter components here' text above the list. Another red oval highlights the list itself with the text 'Select component from filtered list'. The right pane displays a table of parameters and their values, with a red oval highlighting the table header and the text 'Can alter the parameters of the component here'. A red oval at the bottom right points to the 'Done' button with the text 'Hit done, then save in the overview panel to save changes'.

Parameter	Value
AuditFinalize	False
AuditInitialize	False
AuditReInitialize	False
AuditStop	False
CacheAlign	0
CacheRun	0
CacheTime	0
DumpKeys	False
Folders	'[<db>COOLNL_TRT/COMP200</db>]
FoldersToMetaData	[]
GlobalTag	COMCOND-HLTC-000-00
ManageConnections	True
ManagePoolConnections	True
MaxPoolFilesOpen	5
OnlineMode	
OutputLevel	
TimeStampStop	
dbConnection	

Diffing SMKs



Summary

- Hope this has given you a good overview of the TriggerTool (and less so of the TrigDb)
- If you find any issues with the Run-2 TT (versions 04-00-00 and higher) please report them to JIRA
- Or the atlas-triggertool-dev mailing list
- You are our valued customers, and guinea pigs

TriggerTool trunk Sun Nov 16 23:52:38 CET 2014 : Expert trigger shifter using oracle (MARTYNIU@oradev11.cern.ch)

ID	Name	Version	Comment	Origin	Releases	Status	Menu Consistency	Creator	Date
4	Physics_pp_v5	4	pp_v5 20.0.0	xml upload	20.0.0	OnL	Not Run	trigger shifter	2014-11-17 16:02...
3	Physics_pp_v5	3	pp_v5 19.3.0.1: Fir...	xml upload	19.3.0.1	OnL	Not Run	trigger shifter	2014-11-17 15:58...
2	Physics_pp_v5	2	pp_v5 19.3.0	xml upload	19.3.0	OnL	Not Run	trigger shifter	2014-11-17 15:53...
1	Physics_pp_v5	1	pp_v5 19.1.3	xml upload	19.1.3	OnL	Not Run	trigger shifter	2014-11-17 15:45...

L1 Prescale Sets HLT Prescale Sets L1_BCM_Wide_BGRP0 L1_noalg_L1Standby
8 Physics_pp_v5_default_... 7 Physics_pp_v5 / 7 6 Physics_pp_v5 / 6
7 Physics_pp_v5_default_... 5 Physics_pp_v5 / 5
6 Physics_pp_v5_default_... 3 Physics_pp_v5 / 3
5 Physics_pp_v5_default_...
4 Physics_pp_v5_default_...
L1_BCM_AC_CA_BGRP0
L1_BCM_Wide_EMPTY

HLT_noalg_L1MinBias
HLT_noalg_bkg_L1Bkg

Tree Menu
status