

# **HV Online monitor**



## Outline

- I made **HV online monitor** using **Grafana** provided by sPHENIX
- I provided plots of current and voltage in grafana

# 

#### Example of grafana

### Grafana - Display data in time using SQL database

If you want to check plots, check this url in which you can know how to access Grafana <a href="https://wiki.sphenix.bnl.gov/index.php?title=Operation\_Analytics\_Site\_(Grafana)">https://wiki.sphenix.bnl.gov/index.php?title=Operation\_Analytics\_Site\_(Grafana)</a>

## SQL(Structured Query Language)

### PostgreSQL prepared by sPHENIX is used.

			p	public	gtm_scheduler	table	phnxrc								
			p	public	hcal_daq_info	table	phnxrc		⊿aq=> ∖d int	t_mpodlog	g				
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	hvard	table	phnxrc (6	62 rows)											
blic   glîp_s <u>witc</u>		000020													
ublic   glip_switc				· · · · ·											

table

ohnxro

Total number of channel = 256

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# SQL(Structured Query Language)

### Table

[daq=> SELE	CT*FR0M	intt_mpod	llo	og LIMIT 10;									
	time		1	ip	1	mpod_channel	1	sta	itus	1	voltage	1	current
2024-05-0	9 17:58	:02.04443	-+- 	10.20.34.151	1	 511	+	00	01	+-	0.041092	1	e
2024-05-0	9 17:58	:02.04443		10.20.34.151		512	I	00	01	I	0.238066		e
2024-05-0	9 17:58	:02.04443	I	10.20.34.151		513	I	00	01		0.234433		e
2024-05-0	9 17:58	:02.04443	I	10.20.34.151		514	I	00	01		0.102066		e
2024-05-0	9 17:58	:02.04443	I	10.20.34.151		515	I	00	01		0.105791		e
2024-05-0	9 17:58	:02.04443		10.20.34.151		600	I	00	01	I	0.045119		e
2024-05-0	9 17:58	:02.04443	I	10.20.34.151		601	I	00	01		0.042518		e
2024-05-0	9 17:58	:02.04443	I	10.20.34.151		602	I	00	01	I	0.045129		e
2024-05-0	9 17:58	:02.04443		10.20.34.151		603		00	01		0.046687		e
2024-05-0	9 17:58	:02.04443		10.20.34.151		604		00	01		0.048815		6
(10 rows)													



### Table detail

daq=> \d intt_mpodlog											
Table "public.intt_mpodlog"											
Column I Type IC	Collation   Nullable   Default										
time   timestamp without time zone   ip   character varying(32)   mpod_channel   smallint   status   character varying(12)   voltage   real   current   real   Indexes: "pkey" PRIMARY KEY, btree ("time", ip, mpod	I not null     not null     not null                     										

# HV Online monitor in grafana



You can check this plot http://localhost:3000/d/isBT031lz/intt-monitor?orgId=1

## **HV Voltage**



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Time

### Code

lp = '10.20.34.150'

#### lp = '10.20.34.151'

<ol> <li>SELECT</li> <li>cast(mpod_channel as text),</li> <li>time AT TIME ZONE 'America/New_York' as time,</li> <li>voltage</li> <li>FROM</li> <li>intt_mpodlog</li> <li>intt_mpodlog</li> </ol> <ul> <li>SELECT</li> <li>cast(mpod_channel as text),</li> <li>time AT TIME ZONE 'America/New_York' as time,</li> <li>voltage</li> <li>FROM</li> <li>intt_mpodlog</li> </ul>			
<pre>2 cast( mpod_channel as text ), 3 time AT TIME ZONE 'America/New_York' as time, 4 voltage 5 FROM 6 intt_mpodlog 6 intt_mpodlog</pre> 2 cast( mpod_channel as text ), 3 time AT TIME ZONE 'America/New_York' as time, 4 voltage 5 FROM 6 intt_mpodlog 7 NUEDE	SELECT	SELECT	SELECT – Data selection to be displayed
3 time AT TIME ZONE 'America/New_York' as time, 4 voltage 5 FROM 6 intt_mpodlog 3 time AT TIME ZONE 'America/New_York' as time, 4 voltage 5 FROM 6 intt_mpodlog FROM 6 intt_mpodlog	<pre>cast( mpod_channel as text ),</pre>	cast( mpod_channel as text ),	OLLEON Data sciection to be displayed
4 voltage 5 FROM 6 intt_mpodlog 6 intt_mpodlog	<pre>time AT TIME ZONE 'America/New_York' as time,</pre>	time AI IIME ZUNE 'America/New_York' as time,	
5 FROM 5 FROM 6 intt_mpodlog 7 NUSPS	voltage	VOLTAGE	FROM – Database Selection
6 intt modlog	FROM	rKUM intt modlog	
	intt mpodlog		
7 v WHERE 8 s timeFilter(time AT TIME ZONE 'America/New York') WHERE - Cutting	WHERE	s timeFilter(time AT TIME ZONE 'America/New York')	WHERE – Cutting
8 \$ timeFilter(time AT TIME ZONE 'America/New York') 9	<pre>\$ timeFilter(time AT TIME ZONE 'America/New York')</pre>		
9 AND in = '10.20.34.150' 10 AND in = '10.20.34.151'	$\Delta ND$ in = '10 20 34 150'	AND ip = '10.20.34.151'	
10 /*AND voltage >101*/ ORDER - Sequence setting	/* MD voltage $>101*/$	/*AND voltage >101*/	ORDER – Sequence setting
$\frac{10}{7 \times \text{AND}} = \frac{1}{7 \times \text{AND}} = \frac{1}{7 \times \text{ACC}} = \frac{1}{7 \times \text$	(TAND VOLIDE - 101A)	ORDER BY time ASC:	1 8
11 ORDER BY LINE ASC; / ASC - IN ascending order /	URDER BT LINE ASC; / ASC - In ascending order /		1

## **HV Current**

#### Last 3 hours



Code

lp = '10.20.34.150'

lp = '10.20.34.151'

### Time

	·p _00.0		·b	
1	SELECT	1	SELECT	
2	<pre>cast(mpod_channel as text),</pre>	2	<pre>cast(mpod_channel as text),</pre>	SEL
3	<pre>time AT TIME ZONE 'America/New_York' as time,</pre>	3	<pre>time AT TIME ZONE 'America/New_York' as time,</pre>	
4	current	4	current	
5	FROM	5	FROM	FRC
6	intt_mpodlog	6	intt mpodlog	
7	WHERE	7	WHERE	
8	<pre>\$timeFilter(time AT TIME ZONE 'America/New_York')</pre>	8	<pre>\$ timeFilter(time AT TIME ZONE 'America/New York')</pre>	WH
9	AND ip = '10.20.34.150'	9	$\frac{1}{10} = \frac{10}{20} = \frac{34}{151}$	
10	/* AND mpod_channel < 100*/	10	(1  AND  mode shows  1 + 100  ()	
11	ORDER BY	10	/* AND mpod_cnannel < 100*/	ORI
12	time ASC;	11	ORDER BY	••••
		12	time ASC;	

SELECT – Data selection to be displayed

**FROM** – Database Selection

WHERE – Cutting

**ORDER** – Sequence setting

## **HV Online Monitor**

Now, I and Yui Ishigaki modify the HV plot channel by channel made by Genki



If you have idea of the plot setting and design, let me know. ex) color, graph style...etc. 8/9

# Discussion

### Current of mpod\_channel=209 of ip = '10.20.34.150' is very high and unstable.

