

# MySQL Database Interface Scripts

<http://hallaweb.jlab.org/experiment/E02-013/DB/>

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# Outline

## Filling

Unix - like utility set

Directory structure

Example commands

MySQL table structure

## Examining

Web forms construct  
and launch commands

Examples:

- 1) Monitoring tables
- 2) Stripcharts

# Filling

## Directory Tree Structure

```
config  lib  mod  pod  rrdimg  scripts  
docs   logs  php  rrdfiles  runlists  tools
```

# Filling

## Directory Tree Structure

```
config  lib    mod    pod    rrdimg  scripts  
docs    logs   php    rrdfiles  runlists  tools
```

## Example Commands

```
~/scripts> echo '4588' | create_epics_list
```

```
~/scripts> echo '4588\n4589\n' | get_times -l ../logs/times.log
```

```
~/scripts> cat '../runlists/kin3.txt' | get_epics | insert EPICS
```

# MySQL Table Structure

## 'general' table

```
CREATE TABLE general (  
    run_start timestamp PRIMARY KEY DEFAULT "0000-00-00 00:00:00",  
    run_stop timestamp NOT NULL DEFAULT "0000-00-00 00:00:00",  
    run_number VARCHAR(32) DEFAULT 'NULL'  
);
```

# MySQL Table Structure

## 'general' table

```
CREATE TABLE general (  
    run_start timestamp PRIMARY KEY DEFAULT "0000-00-00 00:00:00",  
    run_stop timestamp NOT NULL DEFAULT "0000-00-00 00:00:00",  
    run_number VARCHAR(32) DEFAULT 'NULL'  
);
```

## 'EPICS' table

```
CREATE TABLE EPICS (  
    time timestamp PRIMARY KEY DEFAULT "0000-00-00 00:00:00"  
);
```

# MySQL Table Structure

## 'general' table

```
CREATE TABLE general (  
    run_start timestamp PRIMARY KEY DEFAULT "0000-00-00 00:00:00",  
    run_stop timestamp NOT NULL DEFAULT "0000-00-00 00:00:00",  
    run_number VARCHAR(32) DEFAULT 'NULL'  
);
```

## 'EPICS' table

```
CREATE TABLE EPICS (  
    time timestamp PRIMARY KEY DEFAULT "0000-00-00 00:00:00"  
);
```

*'insert' fills table dynamically:*

```
ALTER TABLE EPICS ADD 'var' (VARCHAR(32) / FLOAT;  
UPDATE EPICS SET 'var' = 'val' WHERE time = 'current time'
```

# Examining: Tables

## Monitoring Tables

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### Select MySQL Table

Select the database table which contains the variable of interest along with the range of data you wish to consider.

Table:

EPICS ▾

Data to search:

All data

Manual range of times

Manual range of run numbers

Kin. 1

Kin. 2

Kin. 3

Kin. 4

Manual Range (Optional):

Lower time/run number

Upper time/run number

4500

4590

Define Limits



# Examining: Tables

## Monitoring Tables

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### Create Table

Enter the parameters for the table to be created. All instances for which the variable is outside the given range will be listed.

'View Table' creates the chart, while 'Add Cut' allows additional requirements to be defined.

Data to search: **All data**

Table: **EPICS**

Column:

Lower limit:

Upper limit:

The contents of additional variables may be displayed by selecting them below.

Additional variables:

- IPM1H04A\_XPOS
- IPM1H04A\_YPOS
- IPM1H04B
- IPM1H04B\_XPOS
- IPM1H04B\_YPOS
- IPM1C08\_XPOS
- IPM1C10

# Examining: Tables

## Monitoring Tables

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### Create Table - Add Cut

Enter the additional requirements. Only those records for which this variable is within the range will be displayed.

Table: **EPICS**

Column:

Lower limit:

Upper limit:

# Examining: Tables

## Monitoring Tables

---

### View Table

MBIGBOXM	IPM1H04B_XPOS	IPM1H04B_YPOS	hac_bcm_average	Time of Value
706.569	0.0416054	-0.126009	5.88728	2006-05-06 06:03:23
706.569	0.0416054	-0.126009	5.81793	2006-05-06 06:08:30
706.569	0.0416054	-0.126009	5.81246	2006-05-06 06:17:31
706.569	0.0416054	-0.126009	5.83033	2006-05-06 06:31:39
706.569	0.0271462	-0.149213	5.72999	2006-05-06 06:49:11
706.569	0.0357576	-0.145623	5.82046	2006-05-06 07:10:40
706.569	0.0357576	-0.145623	5.78243	2006-05-06 07:15:44
706.569	0.0357576	-0.145623	5.84964	2006-05-06 07:19:40
706.569	0.0357576	-0.145623	5.82827	2006-05-06 07:23:41
706.569	0.0550495	-0.138284	5.7726	2006-05-06 07:27:05
706.569	0.0550495	-0.138284	5.81684	2006-05-06 07:27:39
706.569	0.0550495	-0.138284	5.85972	2006-05-06 07:31:36
706.569	0.00294453	-0.133586	5.86845	2006-05-06 07:40:39
706.569	0.0606641	-0.139727	5.78579	2006-05-06 07:55:58
706.569	0.0319729	-0.144469	5.8335	2006-05-06 08:23:48
706.537	0.0397528	-0.0938488	5.82193	2006-05-06 08:27:10
706.569	0.0397528	-0.0938488	6.02966	2006-05-06 08:35:05
706.569	0.0512534	-0.122726	5.94293	2006-05-06 08:51:58
706.569	0.0559765	-0.114703	5.88654	2006-05-06 08:56:27
706.569	0.0559765	-0.114703	5.786	2006-05-06 08:57:35
706.569	0.0504221	-0.129763	6.12327	2006-05-06 10:10:06

# Examining: Stripcharts

## Monitoring Stripcharts

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### Create Stripchart

Specify the variable to be plotted along with the run number and vertical axis boundaries.

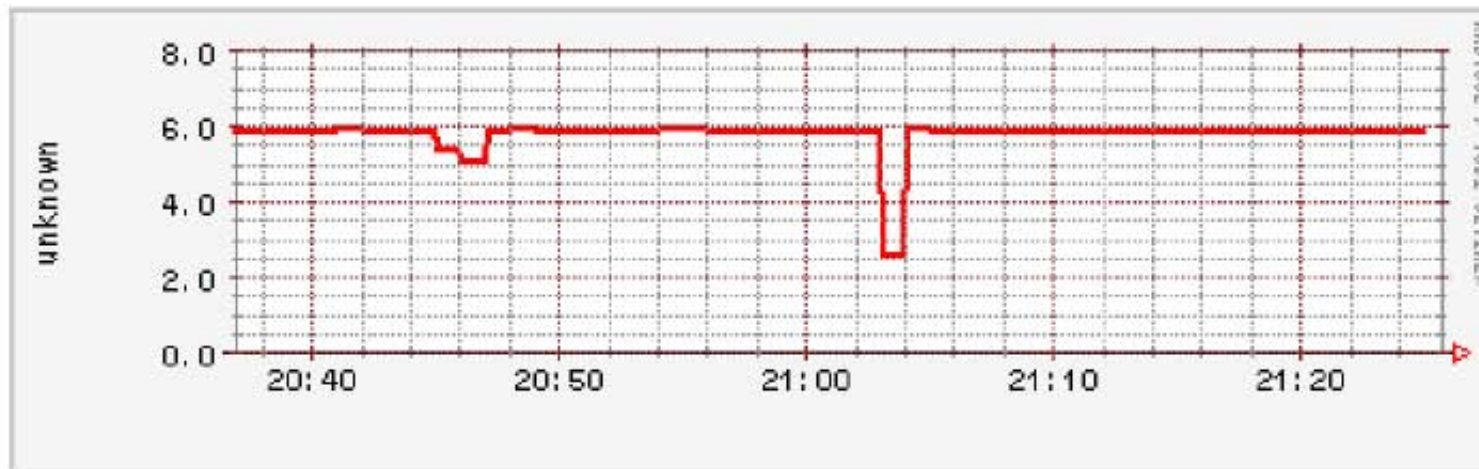
Table:	EPICS
Column:	<input type="text" value="hac_bcm_average"/>
Run Number:	<input type="text" value="4582"/>
Y-axis Minimum:	<input type="text" value="0"/>
Y-axis Maximum:	<input type="text" value="8"/>

# Examining: Stripcharts

## Monitoring Stripcharts

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### View Table



Run 4592

<http://hallaweb.jlab.org/experiment/E02-013/DB/>

**Insertion of EPICS data at few seconds / event**

<http://hallaweb.jlab.org/experiment/E02-013/DB/>

**Insertion of EPICS data at few seconds / event**

**HTML monitoring charts created dynamically**

<http://hallaweb.jlab.org/experiment/E02-013/DB/>

**Insertion of EPICS data at few seconds / event**

**HTML monitoring charts created dynamically**

**Single-variable stripcharts created using RRD**