

NSF/IUCRC CAC PROJECT

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# INTEGRATED VISUALIZING, MONITORING, AND MANAGING HPC SYSTEMS

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01/15/2020

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# SCHEMA DESIGN

Table 1 - nodes metadata

id	node_name	node_ip	BMC	BMC_ip	...
1	compute1-1	10.10.1.	iDRAC8	10.101.1.1	...
2	compute1-2	10.10.1.	iDRAC8	10.101.1.2	
3	compute1-3	10.10.1.	iDRAC8	10.101.1.3	
...					
468	compute23-	10.10.1.	iDRAC9	10.101.23.1	...
469	compute23-	10.10.1.	iDRAC9	10.101.23.2	
470	compute23-	10.10.1.	iDRAC9	10.101.23.3	
...					

# SCHEMA DESIGN

Table 2 - jobs metadata

id	job_name	user_id	node_list	start_time	...
1	job_test1	43	[1,2,3]	1610676100	...
2	job_test2	36	[2,5,8]	1610676200	...
3	job_test3	76	[3,5,6,7]	1610676300	...
...					

# SCHEMA DESIGN

Table 3 - users metadata

id	user_name	nickname	department	jobs
1	name1	Apple	Computer Science	[2,5,8]
2	name2	Banana	Electrical Engineering	[3,5,6,7]
3	name3	Cabbage	Chemistry	[1,2,3]
...				

# SCHEMA DESIGN

Table 4 - iDRAC8

time	node_id	fan_1	fan_2	power	...
1610676100	1	4800	4500	362.2	...
1610676100	2	4800	4500	280.5	
1610676100	3	4800	4500	278.1	
...					
1610676160	1	6200	6000	340.5	...
1610676160	2	6200	6000	250.7	
1610676160	3	6200	6000	270.3	
...					

# SCHEMA DESIGN

Table 5 - iDRAC9

time	node_id	CPU1_Temp_Reading	CUPS_CPUUsage	CUPS_MemoryUsage	...
1610676100	468	32.0	1.0	0.4	...
1610676100	469	32.0	0.9	0.1	
1610676100	470	32.0	0.9	0.2	
...					
1610676160	468	34.0	0.9	0.1	...
1610676160	469	34.0	0.9	0.1	
1610676160	470	34.0	0.9	0.4	
...					

# SCHEMA DESIGN

Table 6 - iDRAC9 - GPU

time	node_id	MemoryTemperature	PowerConsumption	PrimaryTemperature	...
1610676100	708	32.0	362.0	28.0	...
1610676100	709	32.0	282.0	28.0	
1610676100	710	32.0	323.0	28.0	
...					
1610676160	708	34.0	362.0	29.0	...
1610676160	709	34.0	362.0	29.0	
1610676160	710	34.0	362.0	29.0	
...					



# SCHEMA DESIGN

Table 6 - node-jobs

time	node_id	job_list
1610676100	1	[3,5,6,7]
1610676100	2	[2,5,8]
1610676100	3	[1,2,3]
...		
1610676160	1	[3,5]
1610676160	2	[2,5,8]
1610676160	3	[2,3]
...		