

Interactive Monitoring of LoadLeveler Controlled Cluster with **LLview**

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1. June 2005
ScicomP, Edinburgh

LLview: Contents



Part I:

- Motivation
- LLview features and overview
- Components and Dataflow
- Availability, Installation and Implementation

Part II:

- Online Demonstration

The screenshot displays the LLview: JUMP application interface. The main window shows a grid of task progress bars for various nodes (j01f to j38f) and a table of task details. A smaller window titled "LLview: Option panel" is open in the foreground, showing settings for data source, verbosity, height, width, and update frequency.

CPU	Userid	cpuh	wall	U	class	spec	tend
1.	320	ecy002	0.0h	of	1:30	m_med	n10_p02.t1 12:09
2.	320	ecy002	0.2h	of	1:30	m_med	n10_p02.t1 12:32
3.	64	jif0002	0.5h	of	4:00	m_med	n2_p02.t1 14:41
4.	64	jcam0007	1.5h	of	4:00	m_med	n2_p02.t1 12:40 40
5.	32	hms091	4.2h	of	22:00	V_n_long	n1_p02.t1 +05:56
6.	32	hl0061	7.5h	of	4:00	m_med	n1_p02.t1 11:40
7.	32	hdf011	1.4h	of	4:00	m_med	n1_p02.t1 13:50
8.	24	hb1132	5.7h	of	10:00	c_long	n1_p24.t1 15:29
9.	16	hbw091	15.5h	of	24:00	c_long	n1_p1.t16 19:52
10.	16	hbw142	6.1h	of	12:00	c_long	n1_p16.t1 17:06
11.	16	hbw142	10.6h	of	12:00	c_long	n1_p16.t1 12:16
12.	16	hbw142	11.0h	of	12:00	c_long	n1_p16.t1 12:10
13.	16	hch028	0.0h	of	9:00	V_c_long	n1_p16.t1 20:11
14.	16	hch028	0.4h	of	9:00	V_c_long	n1_p16.t1 12:34
15.	16	hch028	1.5h	of	9:00	V_c_long	n1_p16.t1 16:39
17.	16	hch028	2.2h	of	9:00	V_c_long	n1_p16.t1 17:59
18.	16	hch028	2.8h	of	9:00	V_c_long	n1_p16.t1 17:54
19.	16	hch028	3.0h	of	9:00	V_c_long	n1_p16.t1 17:12
20.	16	hms055	0.0h	of	4:00	c_med	n1_p16.t1 15:11
21.	16	hms055	0.1h	of	4:00	c_med	n1_p16.t1 15:08
22.	16	hms055	0.1h	of	4:00	c_med	n1_p16.t1 15:05
23.	16	hms055	0.4h	of	4:00	c_med	n1_p16.t1 14:49
24.	16	hms055	0.7h	of	4:00	c_med	n1_p16.t1 14:32
25.	12	jif0209	12.5h	of	24:00	c_long	n1_p1.t12 22:56
26.	8	hds071	0.2h	of	4:00	V_c_med	n1_p1.t8 15:00
27.	8	hl1111	1.9h	of	2:45	c_med	n1_p0.t1 13:01
28.	6	jif0801	0.8h	of	4:00	c_med	n1_p1.t6 14:26
29.	6	jif0801	1.4h	of	4:00	c_med	n1_p1.t6 13:48
30.	5	hms070	1.7h	of	4:00	c_med	n1_p5.t1 19:28
31.	4	hac051	1.9h	of	10:00	c_long	n1_p4.t1 19:17
32.	4	hac051	0.6h	of	2:00	c_med	n1_p4.t1 10:21
33.	4	hac051	1.2h	of	2:00	c_med	n1_p4.t1 12:02
34.	1	bor04in	0.2h	of	3:00	c_serial	n1_p1.t1 13:54
35.	1	bor04in	0.2h	of	3:00	c_serial	n1_p1.t1 13:51

LLview: Features and Overview

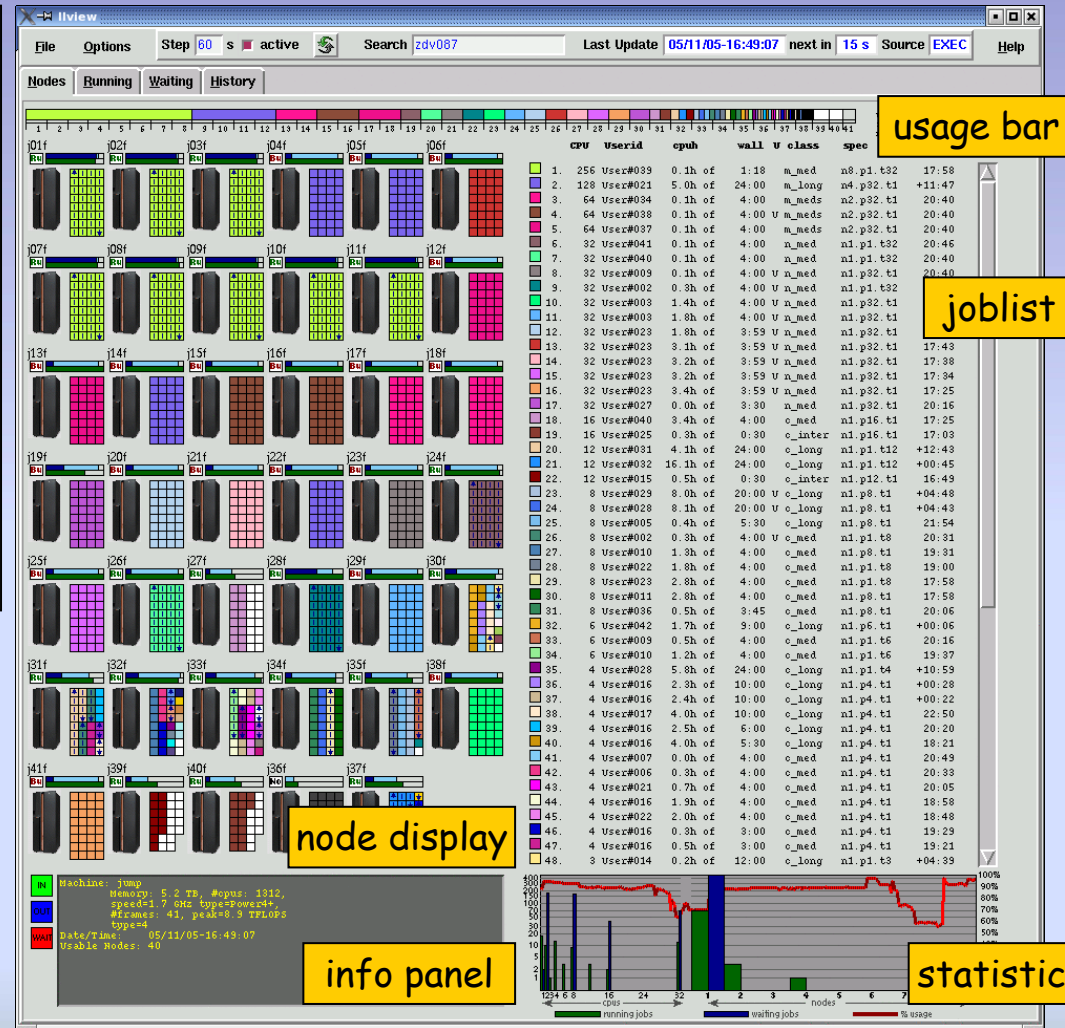


Features of LLview:

- shows mapping between Job and Node
- efficient supervision of running and waiting jobs in one window
- snapshot of the current status
- shows statistics/history of cluster usage
- interactive, mouse sensitive information
- extremely configurable, fast and portable
- Client-Server application
 - direct access
 - web access
 - recorded data



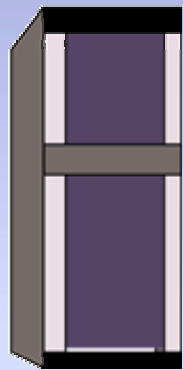
- 41 p690 nodes (32 PE, 128 GB)
- 1312 PE, 5.2 TByte Memory
- 50 TByte (disk)
- 2.2 PetaByte (tape)
- ~ 100 running jobs (on 1-512 PE)



LLview: Components and data flow



WWW-Server



SSH, Cron
1/min

IBM Cluster, LoadLeveler

llqxml

XML

LL data
access API

MasterD

SchedD

SchedD

SchedD

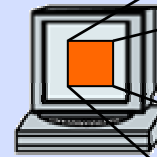
SchedD



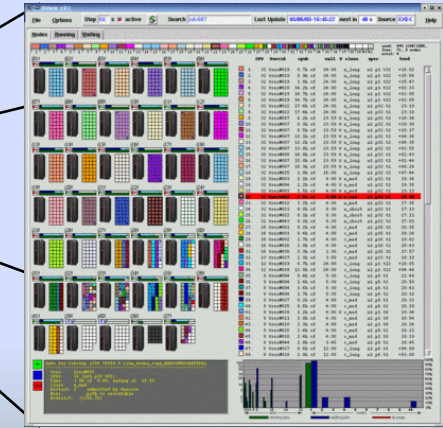
Execute
(SSH)

LLview

HTTP



Recorded data
flat files or compressed tar files



LLview: Miscellaneous



- Availability: Version 1.02
 - Free download, Public license, registration:
<http://www.fz-juelich.de/zam/llview>
- Implementation:
 - Client is written in Perl/Tk
 - running on AIX, Linux, Windows
 - llqxml is written in C and uses LLapi
 - Running on AIX, Linux (?)
- Prerequisites:
 - LLapi, Perl with some additional modules
 - precompiled modules in the distribution