Online Servers and Schedule

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Online Servers

Recent Changes:

NUCS - > micethins -> there has been some discussion of changing the name – suggest micenopi01 -> micenopi 08?

MICEIOC's – I'm assuming Pierrick will discuss this but this requires adding several small machines to the system – No technical problems envisaged.

Note: We don't know what the long term reliability is of the NUC's so we will carry a few spare.

Nagios (Test) Server - > Up and running in a basic fashion but needs quite a lot more attention. Also requires a backup on Heplnm

DAQ machines -> Yordan has installed several new machines. I'm assuming that he will discuss the details in his presentation.

OS SL6.4 Installation - > People have been adding documentation to this – Thank you!

Ed's script is now complete– but who is going to keep the script up to date?

Schedule

The main categories for the online schedule are:

- MLCR Upgrade - 75% complete, we are functional
- Nagios and System Health - System for monitoring the other machines
- Backups and Spares
- Documentation
- DAQ
- Online commissioning run - Planned runs that will be useful.
- Network Switches - Aim to replace current network stack.
- On-call Rotas - To be focused on early next year
- Online Monitoring - Need more information

Nagios and System Health

As the online group is only too well aware of (!)we have a Nagios system that currently checks whether each machine is up and running.

I/we intend to add to this functionality over the forthcoming months.

It has surprised at how often machines are going up and down
- Reduce the amount of nagging – message every 12 hours

We want a second Nagios system on the heplnm system that monitors the first Nagios machine and a few sample machines on micenet – likely to use NSCA (passive checking). This will tell us that Nagios/micenet is up.

Also need to integrate Nagios with Pierrick's EPICS system – As I understand a good/not good signal will be sufficient but need to discuss further.

There is a longer term aim to add Cacti and Ganglia but I consider these less critical. (Nice to have)

Nagios and System Health

8.0	**Nagios and System Health**	**168**	**Wed 23 Jul 14**	**Sun 15 Mar 15**		
8.1	Is Nagios Compatible with what we want?	NA	Mon 15 Sep 14	Fri 10 Oct 14	PJS	100%
8.1.1	Install OS on spare machine	0.1	Mon 15 Sep 14	Fri 10 Oct 14	MR	100%
8.1.2	Install Nagios on Spare Machine	0.1	Mon 15 Sep 14	Fri 10 Oct 14	MR	100%
8.1.3	Install basic Checks on local host	0.25	Mon 15 Sep 14	Fri 10 Oct 14	PJS	100%
8.1.4	Install HOST list	2	Mon 15 Sep 14	Fri 10 Oct 14	PJS	100%
8.1.5	Limited check that we see Hosts Fall Down – See 4.1	NA	Mon 15 Sep 14	Fri 10 Oct 14	PJS	100%
8.1.6	Backup of Critical Nagios Files	0.1	Mon 15 Sep 14	Fri 10 Oct 14	MR/PJS	100%
8.2	Determining List of system checks that we require		Mon 15 Sep 14	Sun 15 Mar 15	PJS/ALL	0%
	(Dynamic List can appear here as it is confirmed)					
8.2.1	SSH or Ping service check for all hosts	2	Mon 15 Sep 14	Fri 10 Oct 14	PJS	100%
8.3	Check each machine is picked up by Nagios when it falls over (Host)	1	Mon 15 Sep 14	Fri 19 Dec 14	PJS /EO	
8.6	Backup Nagios system on HepLNM	1	Mon 15 Sep 14	Fri 31 Oct 14	PJS EO	0%
8.7	EPICS interface with Nagios	2	Mon 15 Sep 14	Fri 31 Oct 14	PJS EO PH	0%
8.5	Addition of GANGLIA and CACTI	2	Mon 15 Sep 14	Fri 19 Dec 14	PJS/MR/EO	0%

Backups and Spares

The current situation with Backups is

From Chris Rogers:

1) Software on onrec machines is transient (i.e. the master software copy is in bzr somewhere). If the hard drive fails, it would take a couple of hours to restore the installation of latest version.

2) PPD stuff I handle

3) CDB is backed up to PPD by rsync; and from PPD to heplnm069. We take monthly and weekly snapshots.

4) The archiver data is the main thing that needs backing up. This is backed up but there is no snapshot done. So if the data becomes corrupted, the corruption will be replicated to the backups and the data can be lost. The archiver data is on one of the miceecserv machines. It needs some thought about how we handle things (e.g. how do we handle loss of connectivity to R9?)

Backups and Spares

The current situation with Backups is

From Matt Robinson

"I need the people responsible for various machines to give me a list of file-system locations on each machine which should be backed up."

There is a mirrored raid (1TB) NAS in the MLCR where we can store backups as long as they are not too big. Currently 2/3 of this space is free. Note that there is no off-site storage for this kind of backup at present! The only machines that are currently utilising this backup drive is the Nagios Test Server and the Target machines.

Matt has added instructions on how to back your data up to this drive. Note that it is not the online responsibility to back up your machines/data/software unless you have explicitly asked!

If you want to take advantage of backup facilities offered by the online group it is the system owners responsibility to let us know and to ensure that what we are offering is suitable.

Backups and Spares

9.0	**Backups and Spares**	**140**	**Mon 1 Sep 14**	Sun 15 Mar 15		
9.1	Understand and document what machines are backed up, when and how	2	Mon 15 Sep 14	Fri 19 Dec 14	??	0%
9.2	Successfully demonstrate that we can restore machines from backups	2	Mon 15 Sep 14	Fri 19 Dec 14	??	0%
9.3	Understand what data is being backed up, when and how	2	Mon 15 Sep 14	Fri 19 Dec 14	??	0%
9.4	Successfully demonstrate that we can restore data from backups	2	Mon 15 Sep 14	Fri 19 Dec 14	??	0%
9.5	Risk Assessment for Backups – Produce a Document	4	Mon 15 Sep 14	Fri 19 Dec 14	PJS	0%
9.6	Determine which machines need upgrading	0.25	Mon 15 Sep 14	Fri 31 Oct 14	PJS HN PH CMW	50%
9.7	Swap over Tgt1 and Tgt2 and Document	1	Mon 15 Sep 14	Mon 15 Sep 14	PJS EO	0%
9.8	Determine Computing Spares	0.25	Mon 15 Sep 14	Fri 31 Oct 14	PJS CMW	50%
9.9	Review Implementation of Backup Procedures on fallback machines	?	Mon 15 Sep 14	Fri 31 Oct 14	ALL	0%
9.10.	Spare NUC with OS installed – ready to go	0.1	Mon 15 Sep 14	Sun 15 Mar 15	PJS EO	0%

I have toured the MLCR with Craig and Henry and I have a list of the spares situation. I have summarised this in a document but it has not yet been checked published.

I don't think we are in too bad a position – The main conclusion is that we may need to buy a few additional servers, depending on whether we feel we can tolerate the risk (or not) of the current ones failing. A more comprehensive list will be available soon.

Spares on DAQ – Yordan has specified that we need one spare TDC and one spare digitiser. I understand that the funds for these items have been found.

Documentation

The documentation needs improving, I see several areas:

Hardware
Processes and Checks
Nagios

Online On-call

An additional large portion of documentation will be required for the online on-call but this will rely upon the technical documentation being improved.

The timing for the completion of the documentation is when we require online on-call experts to be trained.

I will say more about the on-call in a few slides time.

DAQ & DAQ/MICE Commissioning Run

As Yordan will undoubtedly detail there has been some progress here:

7 new DAQ machines installed in the MLCR – OS and software installed.
5 are for active use, 2 are spares. 1 is earmarked as a tracker DAQ spare (it is in the tracker rack) and 1 is for general DAQ spare.

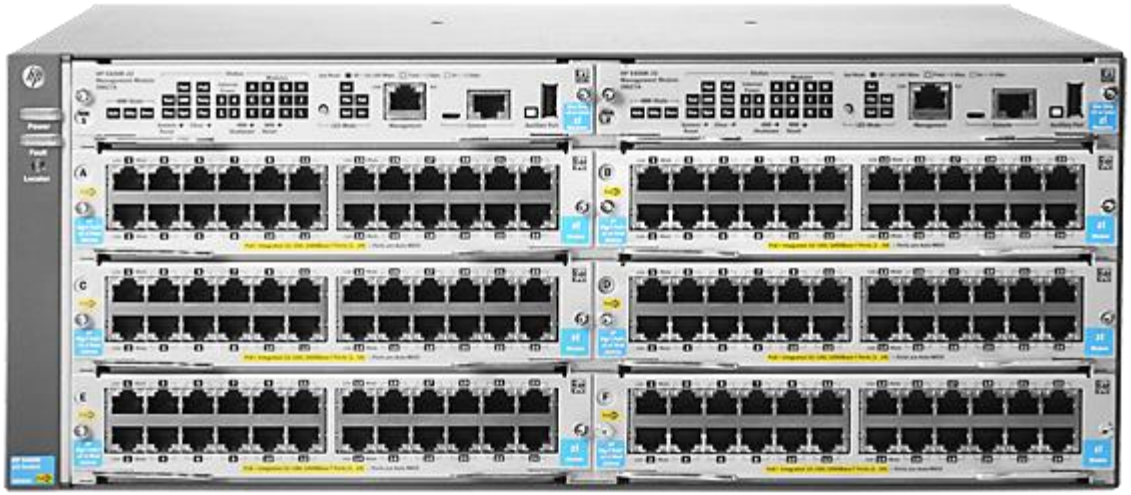
There will be a period in November (16^{th} -26^{th}) where the trackers will be tested. Most of the tracker DAQ group will be around at this time.

"We will want to connect waveguides to the solenoid… As for detectors, the most invasive thing I'd like to do is inject light into TOF1 (to trigger) at the same time as firing the tracker LEDs to get a sense for the triggering delays. It's not clear to me whether direct light injection into the TOFs has ever been done, or whether it is permitted." – D.Adey

I will try and use this time to become a bit more familiar with the DAQ, this may help highlight any potential holes in the schedule.

There is a final commissioning date of 21^{st} Jan for which the online group needs to be ready.

Network Switches



The order for the new network stack has gone in. It's a HP 5406R zl2

Should arrive by the end of October – we will then schedule an installation date.

We have ordered: 6 chassis unit (J9821A), with: - 2 x PSUs (J9828A) - 4 x 24 ports GigE (J9550A) - 2 x 20 port GigE with 2 x SFP+ slots (J9536A)

"The warranty is free next business day replacement for the lifetime of the product. We tend to buy a spare and have it on the shelf for a quick replacement whilst raising a ticket for the free replacement of the spare." – RAL Networks

On-Call Rota

A draft document has been produced, this includes:

1) Introduction – definition of what the On-Call responsibilities are in general terms
2) A list of responsibilities
3) Staffing – How do we staff? – share responsibility with other groups. Need for clear documentation and training.
4) Recruitment –Number of individuals required is not yet ascertained – requirement for some technical expertise.
5)Training. Defines the need to give enough time to write the documentation and train suitable and willing individuals.

Chris was in receipt of this document and has suggested and was kindly implementing some changes to it.

6.0.	**On-call Rota**		**130**	**Mon 15 Sep 14**	**Sun 15 Mar 15**				**0.00%**
6.1.	Define the Role		1	Mon 15 Sep 14	Fri 31 Oct 14			PJS ALL	75%
6.2.	Identify Suitable Individuals from Online Group		2	Mon 15 Sep 14	Fri 28 Nov 14			PJS	0%
6.3.	Produce the training Documentation		5	Mon 15 Sep 14	Fri 19 Dec 14			PJS	0%
6.4.	Train Suitable Individuals for the Role		5	Mon 15 Sep 14	Sun 15 Mar 15			ALL	0%

Online Monitoring

The Online Monitoring is working but there was a comment that users weren't getting anything useful out of it.

The system will be been changed to compare live plots with a set reference histograms

Rhys Gardener is in the process of finding out exactly what needs monitoring and how it can be turned into something that gives timely and useful information to the individuals who are on shift.

Rhys has commented that he can do some testing of the SW with empty plots i.e. the proposed January run - but ideally he requires beamline conditions. So the target activation run in Feb will be an ideal time to test this.

Conclusions

- Servers – There have been some additions to the server list with the MLCR upgrade, some changes with the DAQ machine upgrade, the Nagios (Test) Server and with the proposed changes to the way that the IOC's are handled by Pierrick.

- Urgently I believe that we need to address Backups – What is being backed up, is there enough backups, can we recover? Contact the online group if you have critical files that need backing up!

- The schedule is coming together. It's kind of evolved over the last couple of months into something that is representative of what needs to be accomplished for the Step IV run.

- The documentation requires some attention. However there is always something more urgent to do! But it is scheduled as it is important.

- Are there any unknown unknowns? The upcoming testing should help to answer this.

- I don't believe that the schedule is resource limited – but there are a lot of things to do!