What is New from Mr. nmon!
New stuff in POWER & AIX/Linux
June 2020

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Advanced Technology Support, EMEA

nag@uk.ibm.com
Twitter @mr_nmon & on LinkedIn
https://www.linkedin.com/in/nigelargriffiths/
https://www.youtube.com/nigelargriffiths
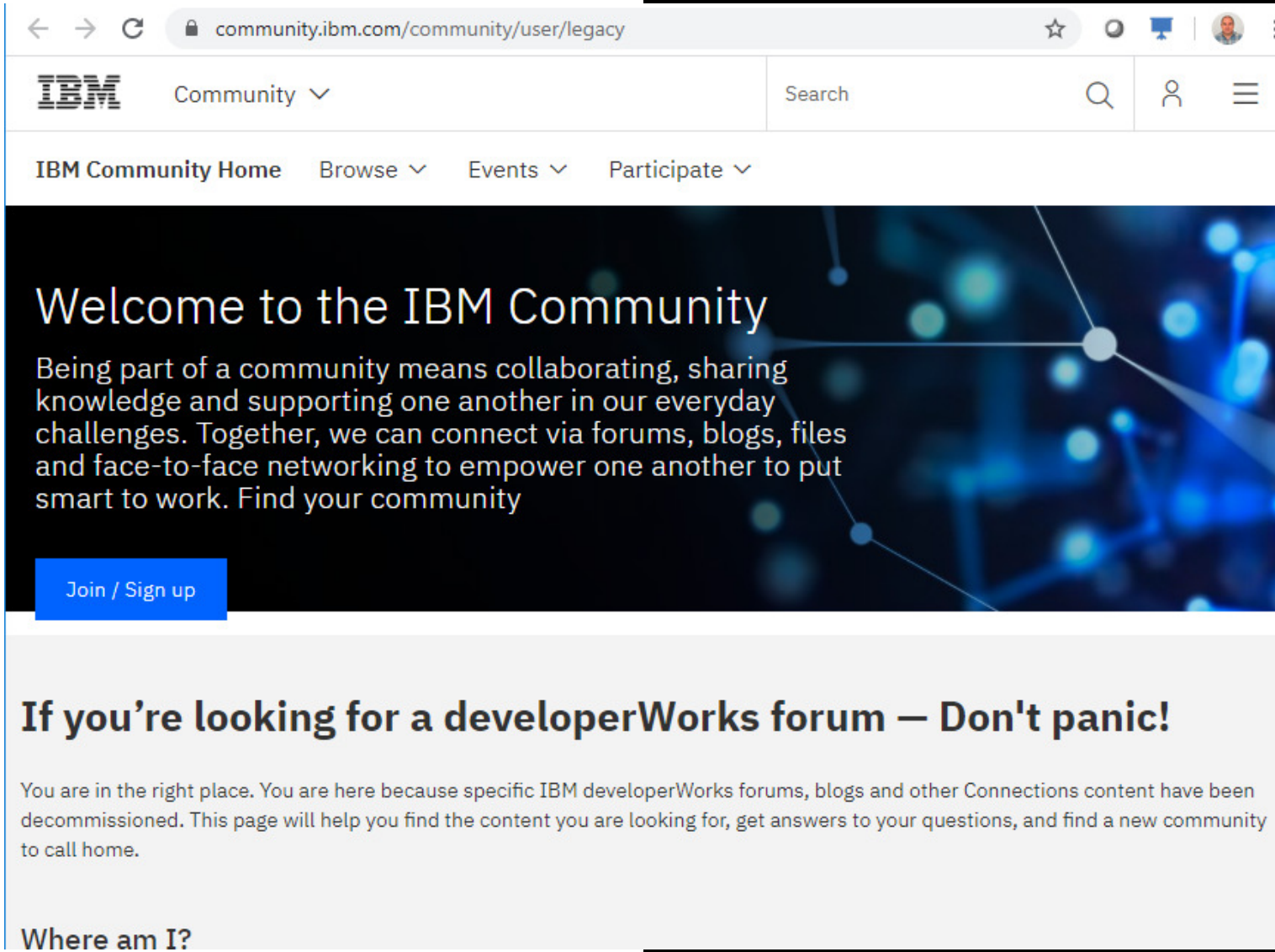https://ibm.biz/AIXpertBlog

Caveats:

- Nigel is not an IBM spokes person

- All these opinions are Nigel's and his alone

- Major releases of AIX, VIOS, Firmware & HW scheduled for November – December
so think pickings in June

- But things keep moving on in the IT World

- Between POWER9 & POWER10 hardware releases

Content

1. DeveloperWorks RIP

2. AIX Open Source Toolbox

3. Ansible

4. Keeping informed

5. Virtual I/O Server dates

6. AIX Memory Expansion AME

7. AIX Marketing

8. AIX Technical Education

9. AIX Strength to Strength

10. Redbook update

11. Linux on POWER review

12. AIX on POWER review

13. njmon project update

DeveloperWorks RIP
and many URLs now redirect

community.ibm.com/community/user/legacy

IBM Community ∨

Search

IBM Community Home   Browse ∨   Events ∨   Participate ∨

Welcome to the IBM Community

Being part of a community means collaborating, sharing knowledge and supporting one another in our everyday challenges. Together, we can connect via forums, blogs, files and face-to-face networking to empower one another to put smart to work. Find your community

Join / Sign up

If you're looking for a developerWorks forum — Don't panic!

You are in the right place. You are here because specific IBM developerWorks forums, blogs and other Connections content have been decommissioned. This page will help you find the content you are looking for, get answers to your questions, and find a new community to call home.

Where am I?
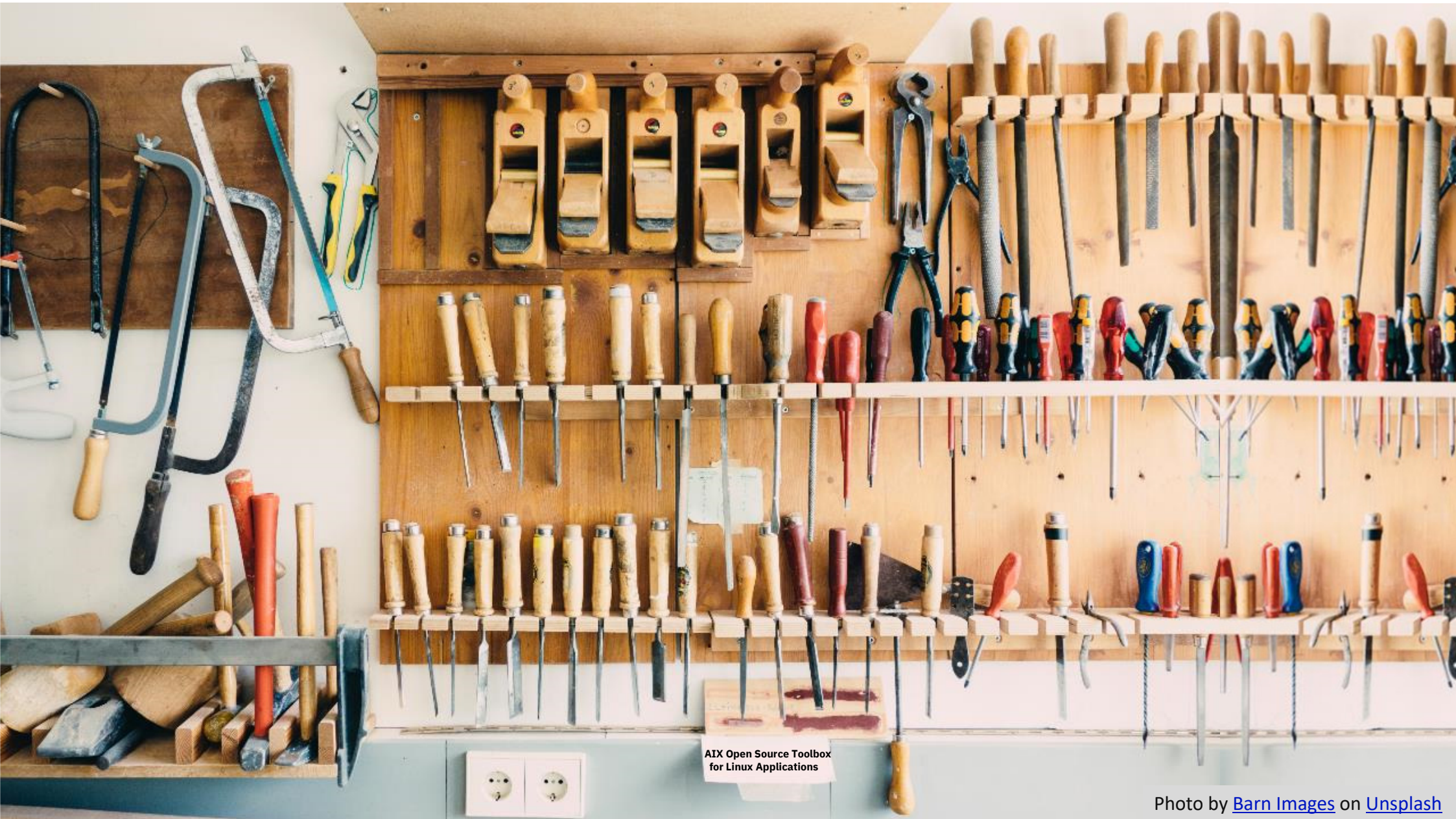
AIX Open Source Toolbox
for Linux Applications

Photo by Barn Images on Unsplash

AIX Open Source Toolbox for Linux Applications

Currently 870 packages
Regular refreshes
Recommend taking ALL your
** open sources packages**
** from the Toolbox via yum**
Problems=Remove every RPM
** & reinstall from the toolbox***
No Support = "oh, yes there is"
** Use the Forum/Discussion**

AIX Open Source Toolbox for Linux Applications

ansible	logrotate	Samba++
cloud-init	MariaDB+++	squid
Community MySQL	MySQL	sudo
filebeats	nagios	Tightvnc
Ganglia +++	perl	tcl + tk
GCC + GCC-go	php ++	unrar
git	postgresql ++	unzip
golang	ptpd	vim
gzip	Python3 +++++	VNC
httpd (Apache)	R	wget
jansson	Rrdtool	xz
json-c	Ruby	yum+++
kubenetes	salt++	zip

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json-c	ruby	yum+++
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Ansible

Nigel's take on the growing buzz

Ansible

Ansible tool = central server only

- Inventory of endpoints

  Servers
  Virtual Machines
  Containers

- ssh to endpoints

- YML files to get to a "known state" (re-runable)

- Tasks can be

  - Default = Python2 (ek!)

  - Raw = UNIX commands

  - Script = shell script (bash)

Python2 officially dead at the end of the year. Long live Python3!

"Automated Programs to do your System Admin"

Red Hat Enterprise Support for

- **Ansible Engine** – command line

- **Ansible Tower** – Graphical Interface

- Each has a cost per endpoint/year

- Support priced for 100 endpoints

- ansible.com is a Red Hat website

AIX Toolbox for Linux® Applications

GNU and open source tools for AIX

Official site for Downloading Packages

For easy yum installation use yum.sh script to download and install rpm.rte and all the packages needed for yum.

Important: The AIX Toolbox packages are not supported through IBM AIX support cases.

- You can search existing, or report new issues and suggestions on the AIX Open Source Forum
- Support cases created in error will be closed
  - See the following for more details
    - AIX Toolbox Frequently Asked Questions
    - Resolving AIX Open Source Package and Application Issues

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Alphabetical listing for packages-Letter A

Package	Version	License	Binary RPM	Source RPM	Description
a2ps	4.13	License	RPM	SRPM	'GNU a2ps is an Any to PostScript filter.'
aix-x11-pc	1.0	License	RPM	SRPM	'pkg-config files for AIX X11 libraries'
ansible	2.9.4	License	RPM	SRPM	'SSH-based configuration management, deployment, and task execution system'
apr-devel	1.5.2	License	RPM	SRPM	'APR library development kit'
apr-util-devel	1.5.4	License	RPM	SRPM	'APR utility library development kit'
apr-util	1.5.4	License	RPM	SRPM	'Apache Portable Runtime Utility library'
		License	RPM	SRPM	'Apache Portable Runtime library'

ansible

https://public.dhe.ibm.com/aix/freeSoftware/aixtoolbox/SRPMS/ansible/ansible-2.9.4-1.src.rpm

Ansible

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AIX Open Source Toolbox

"ansible" = Open Source version of Red Hat Ansible Engine

Red Hat Ansible Tower (GUI) has a open source version called ansible AWX (sort of beta project)

- AWX is not in the AIX toolbox

Ansible and AIX

Perform common AIX specific tasks across multiple AIX endpoints

- ssh so no login/password required

- Without deep AIX skills

Free community written YML files in "Ansible Galaxy"

Or YML file certified & supported from Red Hat Ansible Automation Hub (subscription required)

Example Tasks

1. Initial Install of AIX

2. AIX patching (i-fixes, service packs)

3. AIX updates (TLs, AIX version upgrades)

4. User and group management

5. Filesystems management (LVM, JFS2)

6. File operations (create, update, edit, search, etc.)

7. AIX open source package install/update (yum/pip)

8. AIX configuration (for performance tunables, etc.)

9. Boot management, including inittab details

10. Ad-hoc commands for specific AIX admin tasks

11. Create Ansible playbooks to run a workflow with multiple actions via available modules

Ansible and AIX

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Future

1. Expect an IBM Ansible announcement soon

2. Also I intend trying it, so expect Blogs and videos

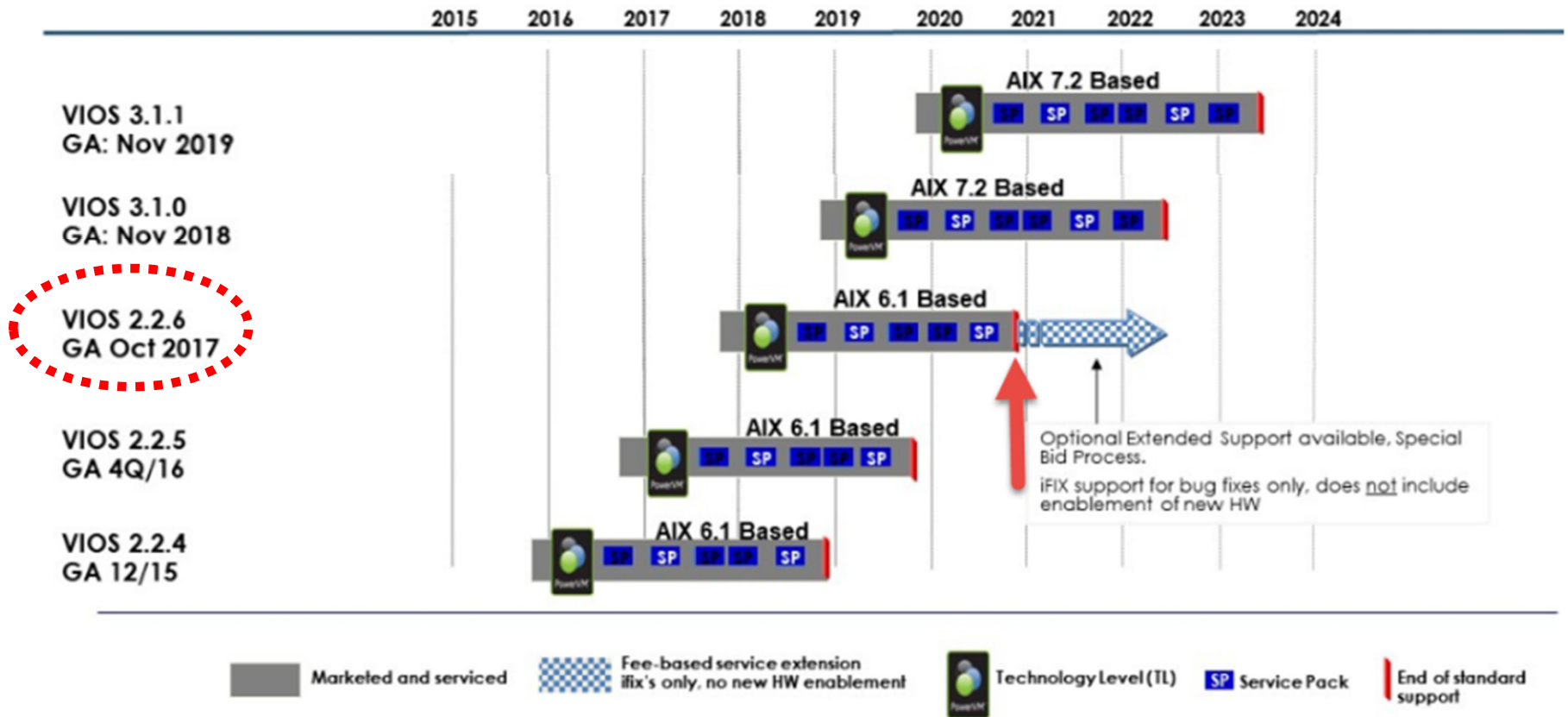3. My 1st task will be to install and start njmon/nimon ☺

Are you keeping yourself informed?

Twitter & LinkedIn

Twitter
LinkedIn

Are you keeping informed?

Virtual I/O Server

Virtual I/O Server

VIOS Releases & Lifecycle

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |

VIOS 3.1.1
GA: Nov 2019 — AIX 7.2 Based

VIOS 3.1.0
GA: Nov 2018 — AIX 7.2 Based

VIOS 2.2.6
GA Oct 2017 — AIX 6.1 Based

Optional Extended Support available, Special Bid Process.

iFIX support for bug fixes only, does not include enablement of new HW

VIOS 2.2.5
GA 4Q/16 — AIX 6.1 Based

VIOS 2.2.4
GA 12/15 — AIX 6.1 Based

Marketed and serviced | Fee-based service extension ifix's only, no new HW enablement | Technology Level (TL) | SP Service Pack | End of standard support

- A new VIOS Release / Technology Level is typically released once per year
- Service model is 3 years of standard support (service packs and i-fixes) for each VIOS release
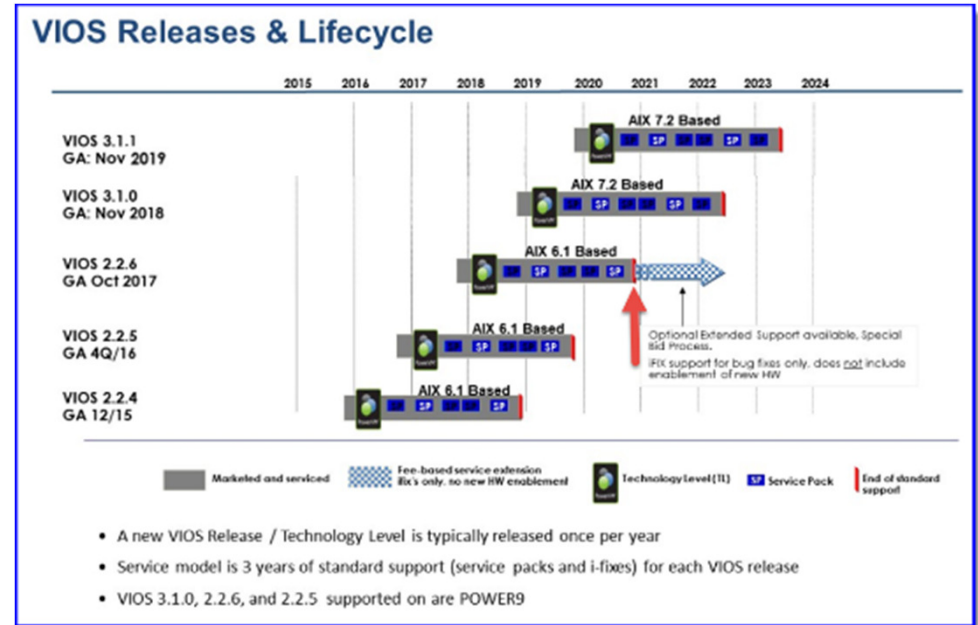- VIOS 3.1.0, 2.2.6, and 2.2.5 supported on are POWER9

Virtual I/O Server

Migrate to 3.1 NOW
VIOS 2.2 → 3.1
AIX   6.1 → 7.2
     2007   2015
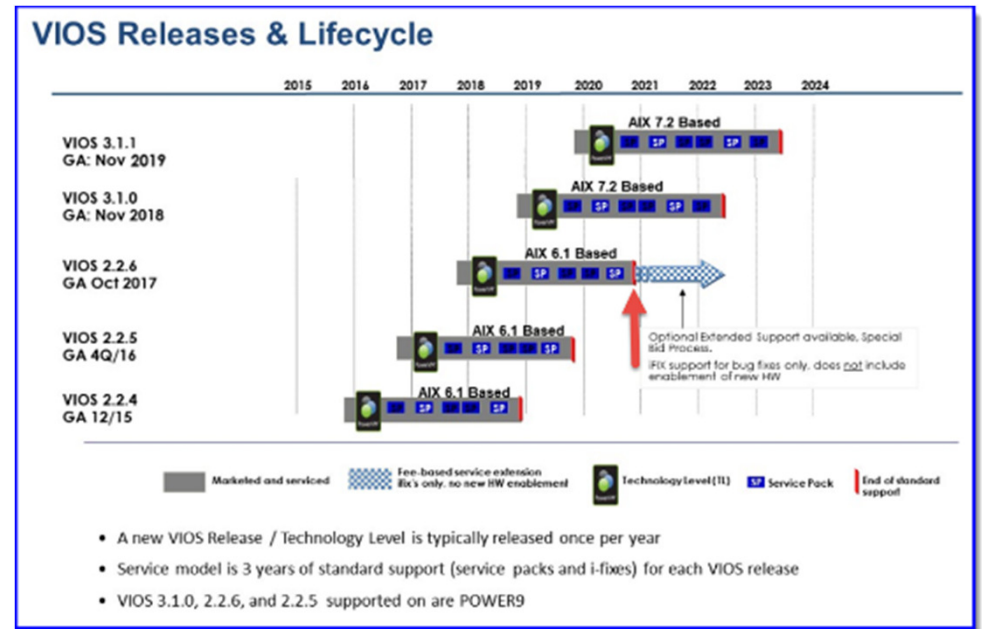= 8 year technology jump

VIOS Releases & Lifecycle

Power Systems run Dual VIOS with dual paths for Reliability & allows VIOS Upgrades

VIOS 2.2.* are ALL end-of-standard Support ~November 2020

- Please help my pension fund by **paying IBM for Extended VIOS Support**
- Please don't upgrade to a **faster VIOS 3.1 to take less CPU cycles**
- Please don't read https://ibm.com/support/pages/upgrading-vios-31

Virtual I/O Server

VIOS 2.2 → 3.1
AIX 6.1 → 7.2
2007 2015
= 8 year technology jump

VIOS Releases & Lifecycle

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
VIOS 3.1.1 GA: Nov 2019							AIX 7.2 Based			
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VIOS 2.2.6 GA Oct 2017			AIX 6.1 Based							
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VIOS 2.2.4 GA 12/15	AIX 6.1 Based									

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This was a joke!

Best Practice
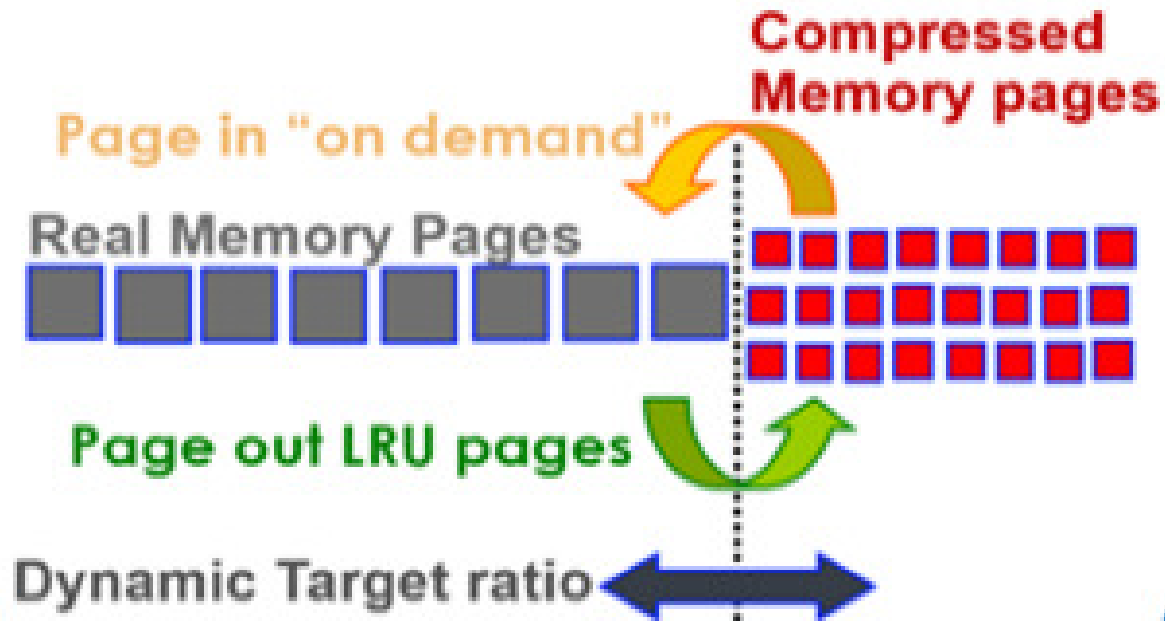
My YouTube Video
https://youtu.be/W85ZRln-2hA
18 minutes long

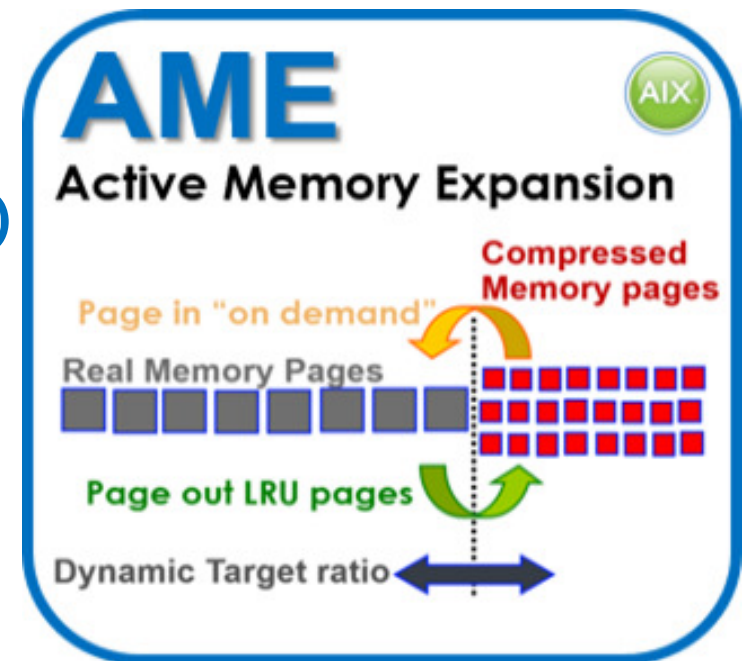# Active Memory Expansion (AME)

What year was this released?
    2005, 2007, 2009, 2011, 2013, 20015

Which POWER version?
    POWER5, POWER6, POWER7, POWER8, POWER9

**Answers in the Chat, please.**

# Active Memory Expansion (AME)

First released in 2009 – POWER6 days

Summary:

1 Expands memory to a larger effective memory by compressing some memory pages

2 Expansion Factor (EF) target can be dynamically set
- My thoughts were 1.2 to 1.5
- Typical values on customer serves are 1.75 to 2.25 or higher
- Run AIX command "amepat" to find out ← can try this without purchasing AME
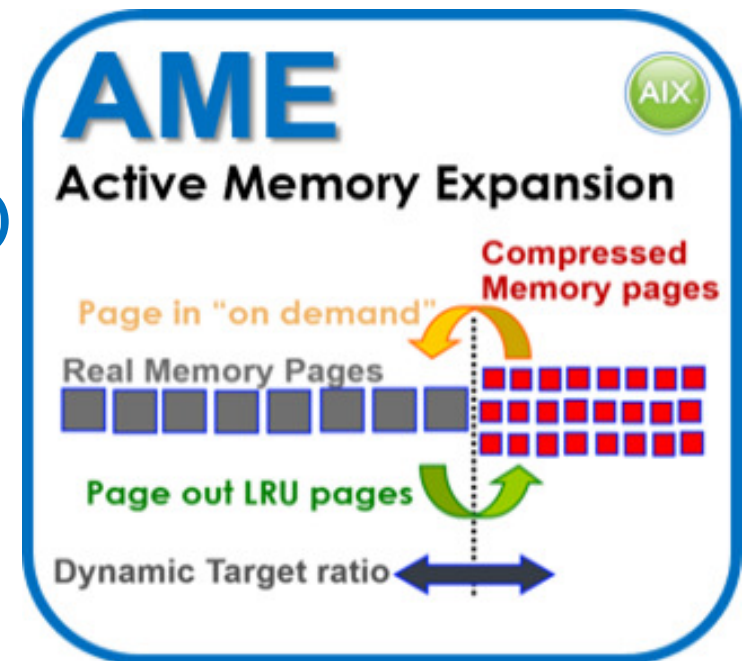
Active Memory Expansion (AME)
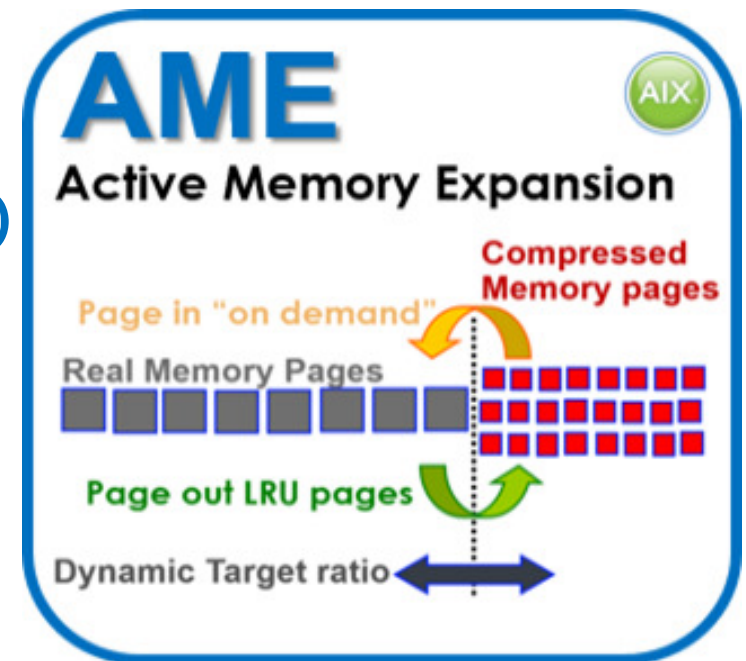
Bad news: You have to purchase AME

Good news: Many clients with it, find it useful & use it all day

New features since the original release:

1) **Supports 64 KB memory pages – good for databases**
2) **POWER8 some HW support for compression**
3) **POWER9 accelerator now does the Compression/Expansion much faster**

Bargain of the decade:
Active Memory Expansion (AME)

From what I can find out:

Price has not changed for 11 years. **WHAT!!**

Middle of the range server examples:
- **2009 = POWER6 p570 32 cores, max RAM= 0.7 TB**
- **2020 = POWER9 E950 36 cores, max RAM=12.0 TB (can have 48 cores)**

Example, Expansion Factor of 2:
- **2009 = POWER6 p570 EF=2 → 0.75 TB RAM + 0.75 TB AME = 1.5 TB**
- **2020 = POWER9 E950 EF=2 → 12.0 TB RAM + 12.0 TB AME = 24.0 TB**

x 16

x 16 more effective RAM at the same cost
Or a ~94% price reduction over 11 years
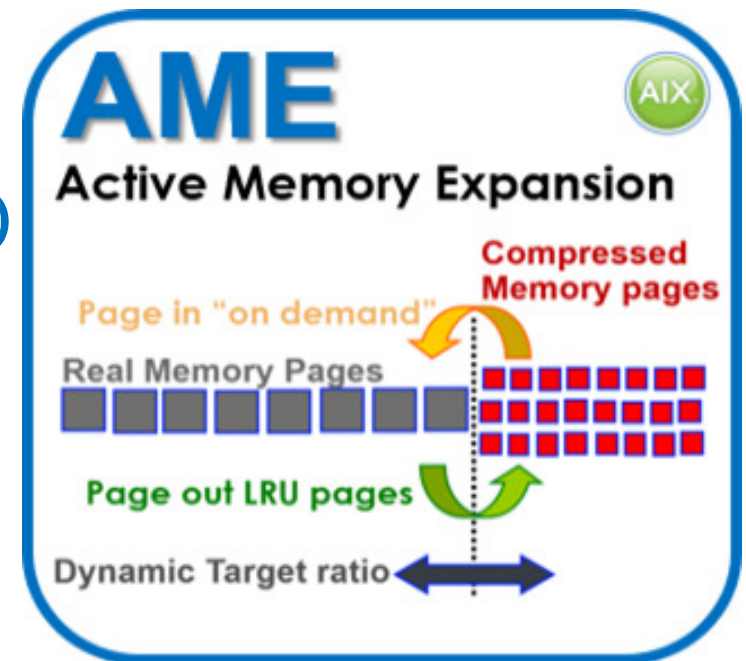
AIX Marketing Budget

What is the yearly budget on AIX marketing?

$0, $1K, $1M, $1B

Answers in the Chat, please.

AIX Marketing Budget

What is the yearly budget on AIX marketing?

€$£ 0

As far as I can tell!

AIX Best Bits:2017 poll

AIX 32 Best Bits: https://ibm.biz/AIXpertBlog
then find "AIX Best Bits" Intro & Results

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Top 8 features

Observations:

Some are POWER hardware features that AIX fully exploits!

Had a few 1000 votes but in 2020 conferences cancelled!

Questions:
**How to raise
AIX's profile in 2020?**

**How to explain all the
brilliant features of AIX
to newbies?**

**How to remind the "old guys"
who take a lot for granted!**

Project: **AIX in Focus**

AIX
RS/6000

OS400
AS400

POWER
AIX & IBM i

Project: **AIX in Focus**

How do people in 2020 learn stuff?

Go language, github, Prometheus

Project: **AIX in Focus**

How do people in 2020 learn stuff?

Answer: ▶ **YouTube**

Project: **AIX in Focus**

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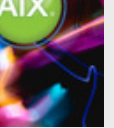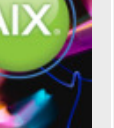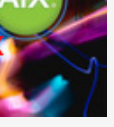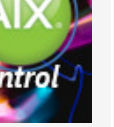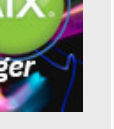
Answer: ▶ **YouTube**

~200 videos on POWER, performance & AIX

Reviewed my YouTube videos:

- 18 AIX topics covered as those new features arrived
- 6 core AIX topics missing

AIX in Focus *Smitty*	**AIX** in Focus *smit GUI* *the Running Man* From 2016	**AIX** in Focus *nmon for AIX* *Starter Pack* *Data Capture* From 2014	**AIX** in Focus *ASO* *Active Systems Optimiser* From 2012	**PowerBasics** **AIX** in Focus *Live Partition Mobility* From 2008
AIX in Focus *JFS2*	**AIX** in Focus *Encrypted* *JFS2* From 2008	**AIX** in Focus *nmon for* *AIX & Linux* *Analyser* From 2014	**AIX** in Focus *"aixpert"* *System Hardening* From 2008	**PowerBasics** **AIX** in Focus *Install AIX from DVD* From 2008
AIX in Focus *mksysb*	**AIX** in Focus *JFS2* *No-Log option* From 2008	**AIX** in Focus *nmonchart* *for AIX & Linux* From 2016	**AIX** in Focus *RBAC* *Roll Based Access Control* From 2008	**PowerBasics** **AIX** in Focus *Install AIX from NIM* From 2008
AIX in Focus *LVM*	**AIX** in Focus *JFS2* *Snapshots* From 2008	**PowerBasics** **AIX** in Focus *Real-time Security Alerts* From 2013	**AIX** in Focus *FPM* *File Permission Manager* From 2009	**AIX** in Focus *Memory Protection Keys* From 2008
AIX in Focus *LKU* *Live Kernel Update*	**Flash Cache** **Accelerator** **Next**	**AIX** in Focus *AME* *Active Memory Expansion* From 2010	**AIX** in Focus *Probevue* *Advanced Live Diags* From 2008	**AIX** **???**

New

Project: **AIX in Focus**

Have HW (which AIX fully exploits) videos on
- PowerVM Series (Power Basics)
- PowerVC series
- PowerSC
- Dynamic LPAR*
- Simplified Remove Restart*
- Loads on performance/tuning + nmon*

AIX related topics Series
- Shared Storage Pools
- Workload Partitions (WPAR)

Not covered
- PowerHA (no skills)

Missing Best Bits:

- AIX Open Source Toolbox
- Advanced 'o' commands

- Scalability

- Field Hardening

- First Failure Data Capture

- Enterprise Pools (don't have one)

- Ideas Welcome

Project: **AIX in Focus**

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AIX Rebel Alliance – IBM = Its been moved

AIX Strength to Strength

- Original Supplied by Jay Kruemcke
- 2016 went missing …
- 2017 updated by me covering 18 months
- 2020 missing again!
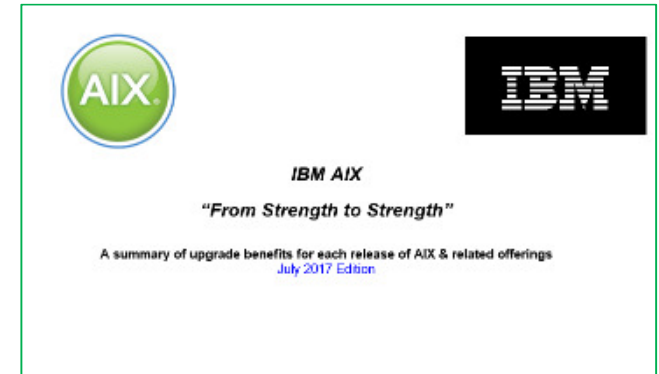
Wikipedia has good AIX content but not down to the TL level

1 Do you still want it?

- Never seen it, Don't care, May be, Useful reference

2 Which format?:

- Document or Blog.
- In the Chat, please.

RedBooks

IBM Power System IC922 Technical Overview and Introduction
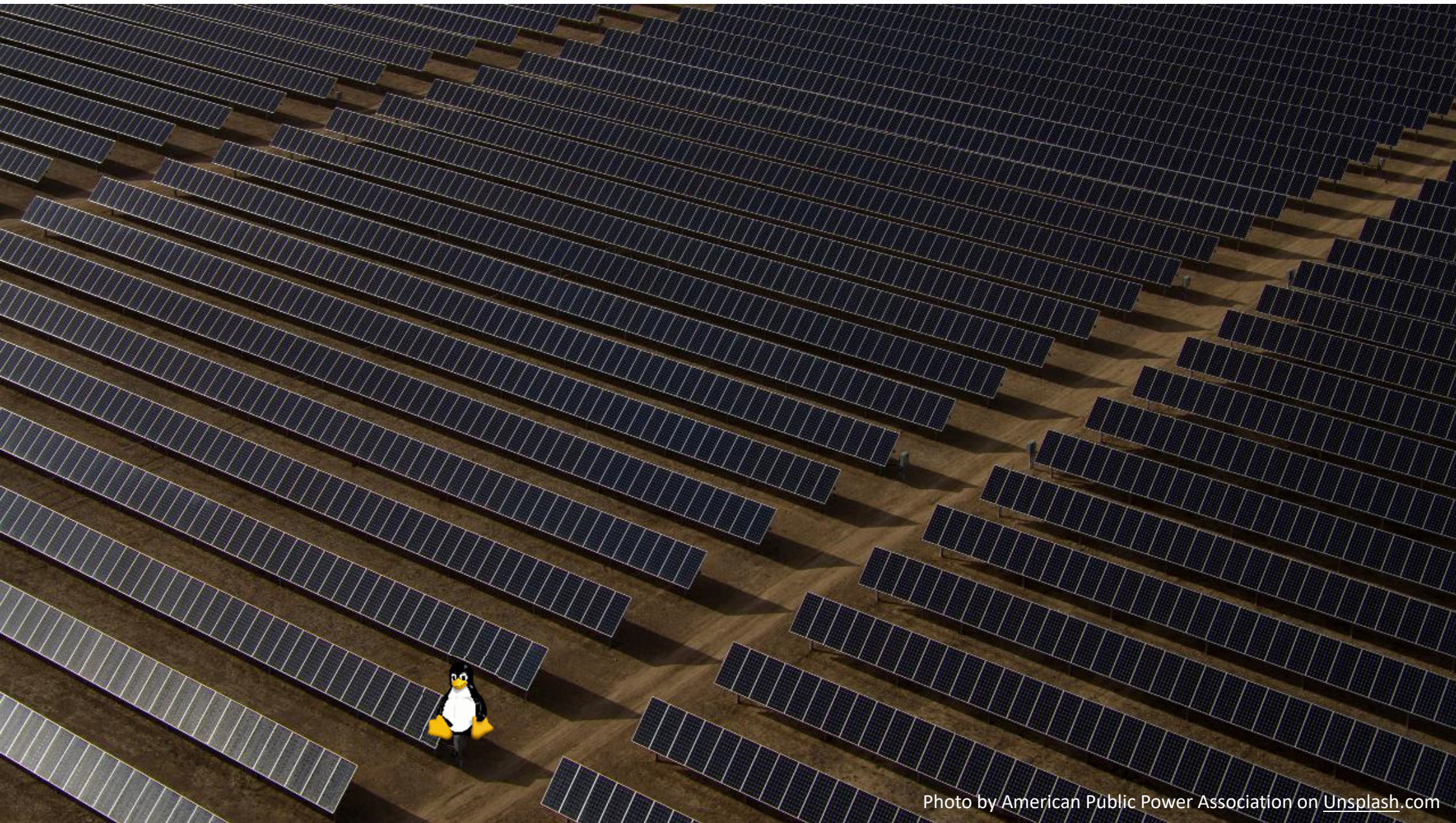http://www.redbooks.ibm.com/redpapers/pdfs/redp5584.pdf

IBM Power System AC922 Technical Overview and Introduction
http://www.redbooks.ibm.com/abstracts/redp5494.html?Open

IBM Power Systems LC921 & LC922* Technical Overview and Introduction
http://www.redbooks.ibm.com/redpapers/pdfs/redp5495.pdf

IBM Power Systems S922, S914, & S924 Technical Overview & Introduction
http://www.redbooks.ibm.com/abstracts/redp5497.html?Open

IBM Power System L922 Technical Overview and Introduction
http://www.redbooks.ibm.com/abstracts/redp5496.html?Open

IBM Power Systems H922 & H924 Technical Overview and Introduction
http://www.redbooks.ibm.com/abstracts/redp5498.html?Open

IBM Power System E950: Technical Overview and Introduction
http://www.redbooks.ibm.com/abstracts/redp5509.html?Open

IBM Power System E980: Technical Overview and Introduction
http://www.redbooks.ibm.com/abstracts/redp5510.html?Open

* No longer available in some countries

Most updated in 2020

RedBooks

Draft Redbook - Updated March 2020
IBM AIX Enhancements and Modernization
http://www.redbooks.ibm.com/redbooks/pdfs/sg248453.pdf
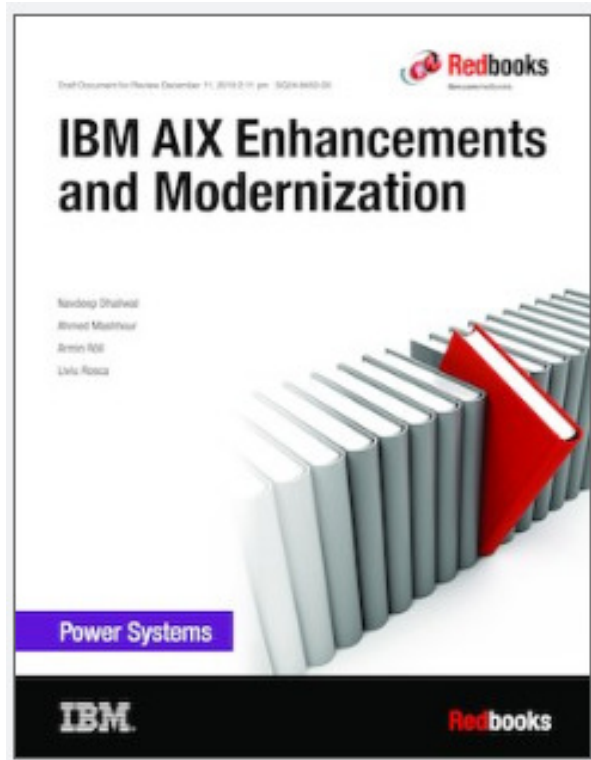
AIX 7.2 TL4 includes
nmon Current Variable MHz
          was Nominal MHz

and **XIVE**

Linux on Power

Red Hat

SUSE

Ubuntu

- Red Hat Enterprise Linux (RHEL) fully supported on POWER9
  - Purchase with your server + ongoing support
- RHEL7, RHEL8, RHEL for SAP and Red Hat OpenShift Container

- For best support upgrade to RHEL 8.1

Linux on Power

Red Hat

SUSE

Ubuntu

Warning:

- RHEL 7.6 ALT was always a temporary "stop-gap" for the AC922/IC922 → POWER9 with GPUs (no KVM support) with NVLink, specific HPC & AI libraries

- Upgrades to 7.7/7.8 - not supported

- Support for RHEL 7.6 ALT stops at the end of the year (2020)

- Please Upgrade to RHEL 8.1 - this year Check your specific libraries are available before upgrading

Linux on Power

Red Hat

SUSE

Ubuntu

- SLES 12 & SLES 15 full supported on POWER9
  - Purchase with your server + ongoing support

- Primary focus is SAP & SAP HANA
  - Significant performance + cost benefits over x86 and now Persistent Memory

- Not supported on AC922/IC922

Linux on Power

Red Hat

SUSE

Ubuntu

You can purchase Ubuntu Support with your POWER9 server

- L922/S92x Ubuntu 16

- AC922   Ubuntu 18

But not for

- IC922 or Enterprise E950/E980

If you purchased support from IBM, it is good for the contract duration

Linux on Power

Red Hat

SUSE

Ubuntu

IBM not selling Ubuntu 20 Support

- Client's did not want it from IBM

- Not surprising for a "free" OS

Using a free Ubuntu OS & now want to upgrade to Enterprise Support?

- Ask Canonical

- The details/prices are here: https://ubuntu.com/pricing/infra

- Does not mention HW platform!

Linux on Power

Red Hat

SUSE

Ubuntu

Personal note:
- I recently could not get Ubuntu 20 to
    install on POWER9 into an LPAR!
-    May be, I did something wrong
-    The download image is called
    → ubuntu-20.04-live-server-ppc64el.iso
        I am not clear what "live" means
-    Perhaps, it is for non-IBM OpenPOWER

- I could install Ubuntu 18 + upgrade to 20
- Then it works fine but no support from IBM

- Hint try POWER8 or
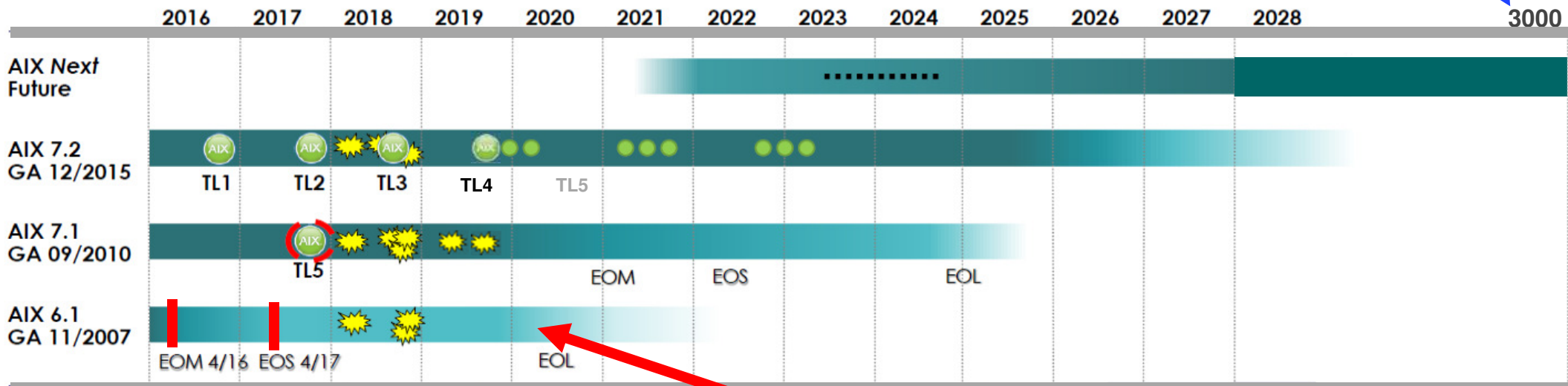   POWER9 in POWER8 mode

AIX

Some slides from Miss AIX -Petra Bührer

New AIX Offering Manager -Maria Ward

AIX Release Roadmap View

Timeline years: 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 ... 3000

AIX Next Future

AIX 7.2 GA 12/2015 — TL1, TL2, TL3, TL4, TL5

AIX 7.1 GA 09/2010 — TL5, EOM, EOS, EOL

AIX 6.1 GA 11/2007 — EOM 4/16, EOS 4/17, EOL

Legend:
- Marketed and serviced
- Serviced only
- Fee-based service extension
- (AIX) Technology Level (TL)
- (AIX) Last TL
- P9 Enablement SPs

Next slide

All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

EOM End of marketing = Can't be purchased nor install media downloads.
EOS End of support = Regular support not available. Extended Support may be available at a price.
EOL End of life = Don't even ask for support.

No Surprises

AIX 5.3 is not supported at all

AIX 6.1 first released in 2007
AIX 6.1 standard support stopped April 2017
   at an additional fee Extended Support ends April 2020
   at an additional fee Extended Support on
      POWER7   ends Sept 2020 (4 months)
      POWER7+ ends Dec 2021 (15 months)
      POWER8   ends April 2022 (19 months)

12 year overlap!

AIX 7.1 first released in 2010

[EOM within the next year, subject to change
Then Extended Support fees]

AIX 7.2 first released in 2015

[Already six years with many unique features not in 7.1
All new function are 7.2 and has been for years]

Please Run

AIX 5.3 → no

AIX 6.1 → no or moving off soon   [performance limited to SMT=4]

AIX 7.1 → TL5 only - latest is sp6

AIX 7.2 → TL2(until Oct 2020), TL3 or TL4
sp5   sp4   sp2

New in 2020

2019 end of service for POWER7 or older

Last TL for AIX 7.1 shipped 2017

Power Platform	AIX 6.1	AIX 7.1	AIX 7.2
POWER6 ✖	No Support ✖		Never Supported ✖
POWER7 ✖	Sept. 2020 ✖		
POWER7+	Dec. 2021 ✖		
POWER8	April 2022 ✖		
POWER9			

POWER7 mode	POWER8 mode	✖ Not Supported

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Power Systems VUG in December

What's new from Mr. nmon's Point of View

Content
- Live Partition Mobility (LPM)
  - Speed improvements, POWER9 Compression + Encryption
- AIX Live Kernel Update (LKU)
  - Evolution + TL4 enhancements
- AIX 7.2 TL3 Enhancements - reminder
- AIX 7.2 TL4 Enhancements - new
- AIX XIVE - eXternal Interrupt Virtualisation Engine (POWER9)
- Persistent Memory for SAP-HANA (SUSE Linux)

https://www.youtube.com/nigelargriffiths
- YouTube: POWER9 getting the Best Performance   5 Part Series
- YouTube: Advanced nmon Topics   5 Part Series

- Nigel's current Performance Tool project: njmon

Next Webinar on June 25th topic **AIX Roadmap** & **IBM i Roadmap**

http://ibm.biz/PowerVUG

Jyoti Dodhia

http://ibm.biz/powersystemsvug

Joe Armstrong

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Open Source from IBMers

So AIX benefits from the latest Time-Series database & graph engines
From Nigel "Mr nmon" Griffiths

njmon for AIX & Linux

VIOS

AIX

Linux

InfluxDB → **Grafana** → **Browser**

JSON output for ElasticSearch & Splunk
Line Protocol for InfluxDB & Prometheus

Recent updates:
- **New faster centralized collector**
- **New direct to InfluxDB version**
- **New YouTube videos for Sys Admins**
- **New Grafana graph templates**

See https://tinyurl.com/njmon

njmon + InfluxDB + Grafana for
AIX & Linux Performance data

Stats:
CPU
RAM
Disks
Paging
Volume Groups
Logical Volumes
Networks
Adapters
Kernel stats
Tapes
Uptime
User count
AIO
File systems
System Calls
Processes
NFS
GPFS Spectrum Scale
VIOS virtual disks
VIOS SEA
VIOS virtual networks
VIOS SSP
Linux NVIDIA GPUs
AIX rPerf

njmon + InfluxDB + Grafana for AIX & Linux Performance data

Ten-part series on Intro + set-up + using njmon to collect AIX & Linux performance data, store it in the InfluxDB time-series database and graph the stats with Grafana via a web browser.

Update: The three extra videos to the original sever, cover njmonchart, njmond.py (new replacement central data gathering service) and nimon sending the data straight to InfluxDB option).

YouTube

10 videos
11,000 Views
   up to June 2020
2 hours 20 minutes

1: Introduction to njmon — 14:37 — njmon + InfluxDB + Grafana Series 1: Introduction njmon — Nigel Griffiths

2: InfluxDB & Grafana Install — 10:25 — njmon + InfluxDB + Grafana Series 2: Installing InfluxDB & Grafana — Nigel Griffiths

3: njmon Install & Set-up — 22:31 — njmon + InfluxDB + Grafana Series 3: njmon Install & Set-up — Nigel Griffiths

4: Import Grafana Dashboards — 18:00 — njmon + InfluxDB + Grafana Series 4: Importing Grafana Dashboards for njmon — Nigel Griffiths

5: Your 1st few njmon Graphs — 18:50 — njmon + InfluxDB + Grafana Series 5: 1st njmon graphs — Nigel Griffiths

6: Templates to Switch Server/VM — 10:15 — njmon + InfluxDB + Grafana Series 6: Templates — Nigel Griffiths

7: Varying of No. of resources — 8:24 — njmon + InfluxDB + Grafana Series 7: Graphing Multiple Resources — Nigel Griffiths

8: njmonchart — 9:07 — njmon + njmonchart Series: 8 Graphing njmon's JSON data with njmonchart — Nigel Griffiths

9: njmon v50 with njmond.py — 16:13 — njmon + InfluxDB + Grafana Series 9: njmond Install & Set-up — Nigel Griffiths

10: nimon v60 Direct to InfluxDB — 11:31 — njmon + InfluxDB + Grafana Series 10: nimon Intro & Setup — Nigel Griffiths

njmon

for AIX & Linux

http:/tinyurl.com/njmon

Not an IBM product but Power Systems integrating with the best of open-source

njmon

PowerVM
VIOS

AIX

Linux

→ InfluxDB → Grafana → Browser →
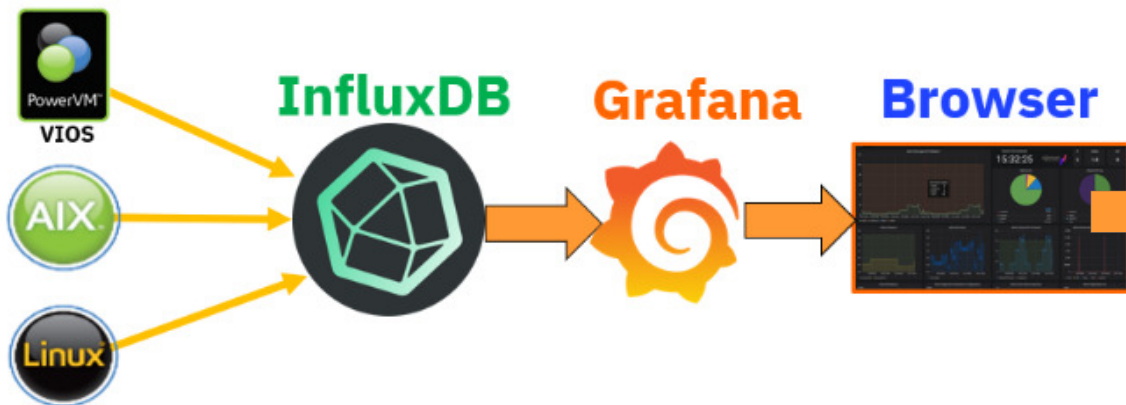
Small c code → JSON → central → inject → timeseries DB → graphing engine → browser
Other Time-Series engine are available & tested elastic(search) and Splunk

njmon

PowerVM™
VIOS

AIX

Linux

InfluxDB → **Grafana** → **Browser**
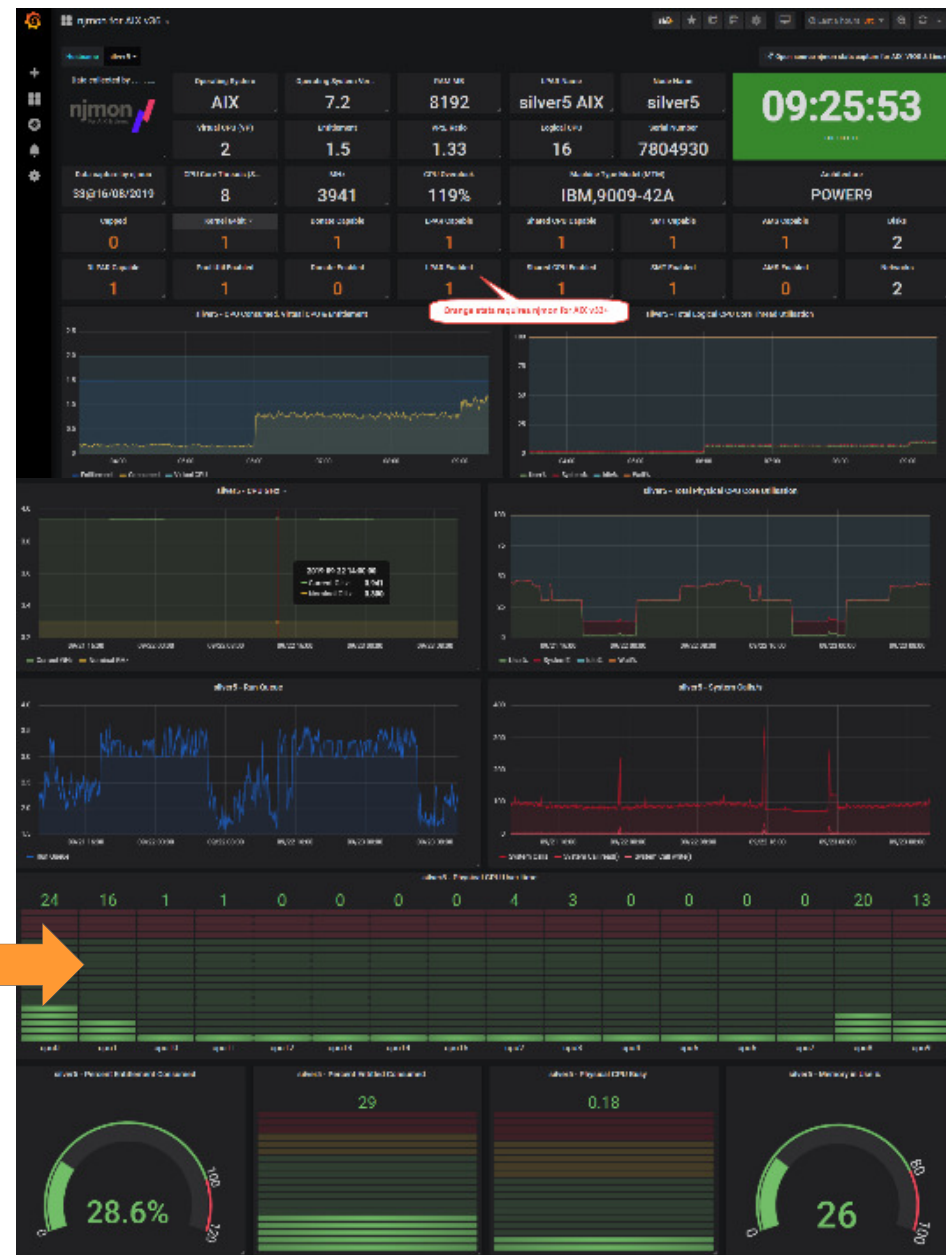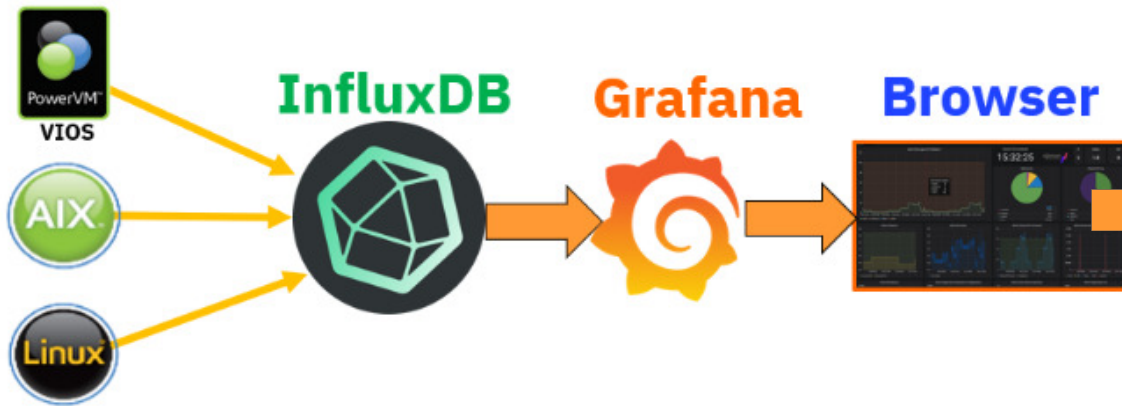
1. njmon small endpoint agent → JSON

2. Five methods to load into time-series DB

3. Best of bred IMHO: InfluxDB + Grafana

4. This results in:
   - Real-time graphs on 1 or many servers
   - Rapid graphing to explore your data
   - Alerting on thresholds

5. InfluxDB + Grafana = install in 10 mins
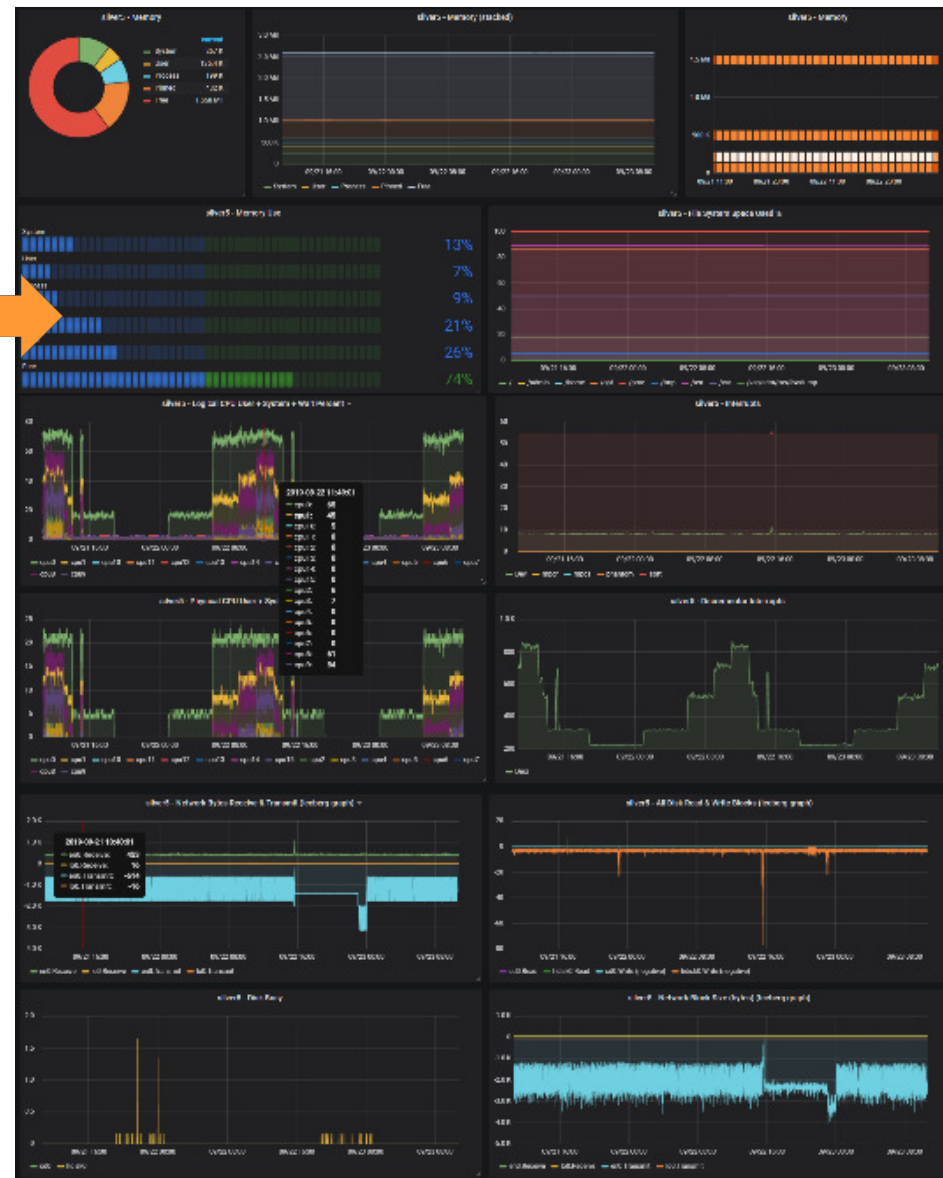
Dec. 2019 Highlights

1. Improved TAGS for graphing multiple resources like CPUs, Disks, Nets, Filesystems
2. njmonchart to graph to webpage .html
3. Six Pre-made Grafana Dashboards
4. POWER Shared Processor Pool (SPP) stats
5. Spectrum Scale (GPFS) stats AIX & Linux
6. AIX aioserver stats
7. Fixes for time creep
8. Process Utilisation stats (set threshold higher)
9. VIOS SSP, virtual disks & networks stats
10. Changes for elastic (elasticsearch/ELK see -e)
11. NFS v2, v3 and v4 stats
12. RedHat NVIDIA GPU stats on AC922
13. AIX Oracle ASM disks (see -o)
14. Improved Process naming (ncpu_[pid])
15. Moving to linefeed separated JSON records

njmon
for AIX & Linux

New News:
- After a cron start up randomise sleep
- Python based merged collector/injector
- Keep trying, if the central server stops
- Testing over 1000 Endpoints

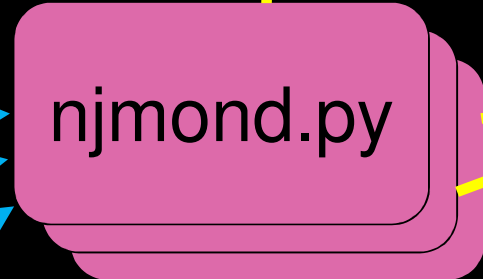njmon for AIX & Linux

Version 62

njmon

AIX 6, 7.1, 7.2

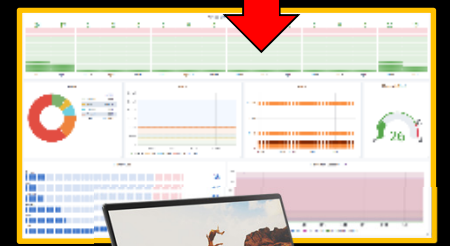RHEL 7, 8
SLES 12, 15
Ubuntu 18, 20
on ppc64 & AMD64

AIX

Linux

VIOS2

PowerVM

VIOS3

JSON

JSON Format

njmond.py

InfluxDB

Grafana
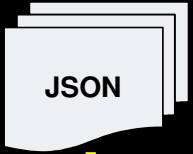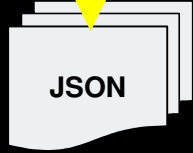
June 2020 Highlights

1. **nimon** – stats go straight to InfluxDB, so no other central collection needed
2. **Prometheus** supported. Push←→pull issue. Telegraf handles this.
3. Making the **Internal Data Collecting** official
4. For AIX added **rperf** calculations good for server consolidation and migrating between POWER generations
5. Added a **config file** for njmon and nimon so the parameters don't appear on the command line (including passwords)
6. Option for process names not to have the process PID at the end
7. Adding flags to reduce the stats a bit so no more CPU core threads (logical CPUs) on large LPARs there is just too many with SMT=8
8. PID output on start-up → helps you stop later

njmon & nimon for AIX   v63 → yesterday
njmon & nimon for Linux v63 → soon

telegraf.config

```
[[outputs.prometheus_client]]
  listen = ":8099"
  metric_version = 2
  path = "/metrics"
  expiration_interval = "120s"
  string_as_label = false

[[inputs.socket_listener]]
  service_address = "tcp://:8888"
  data_format = "influx"
read_buffer_size = "256KiB"
  read_timeout = "2s"
```

Telegraf

telegraf --config telegraf.config

node_exporter
statd_exporter
others

Grafana

Data Source
Type: Prometheus
URL:
  http://9.137.62.10:9090

Prometheus
./prometheus

Port:9090

Pull

Port:8099

Port:8888

Prometheus & Telegraf on
the same VM (optional)
IP Address 9.137.62.10

prometheus.yml

```
global:
  scrape_interval: 15s

scrape_configs:
  - job_name: 'node'
    static_configs:
    - targets: ['localhost:9100']
  - job_name: 'prometheus'
    static_configs:
    - targets: ['localhost:9090']
  - job_name: 'telegraf'
    static_configs:
    - targets: ['localhost:8099']
```

Push
Line Protocol

nimon
for AIX & Linux

nimon -s30 -c 2880 -w -i 9.137.62.10 -p 8888

Note: port numbers chosen largely at random
+ don't use my IP addresses either!

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Internal Extra Data Collecting

extra.c

Stand-alone
test code

extra_init()
{
    code
}

extra_data()
{
    code
}

1. Compile stand-alone test version to confirm the two functions work OK

2. Compile into njmon/nimon so new stats are included with all the others

njmon | nimon

extra_init()
{
    code
}

extra_data()
{
    code
}
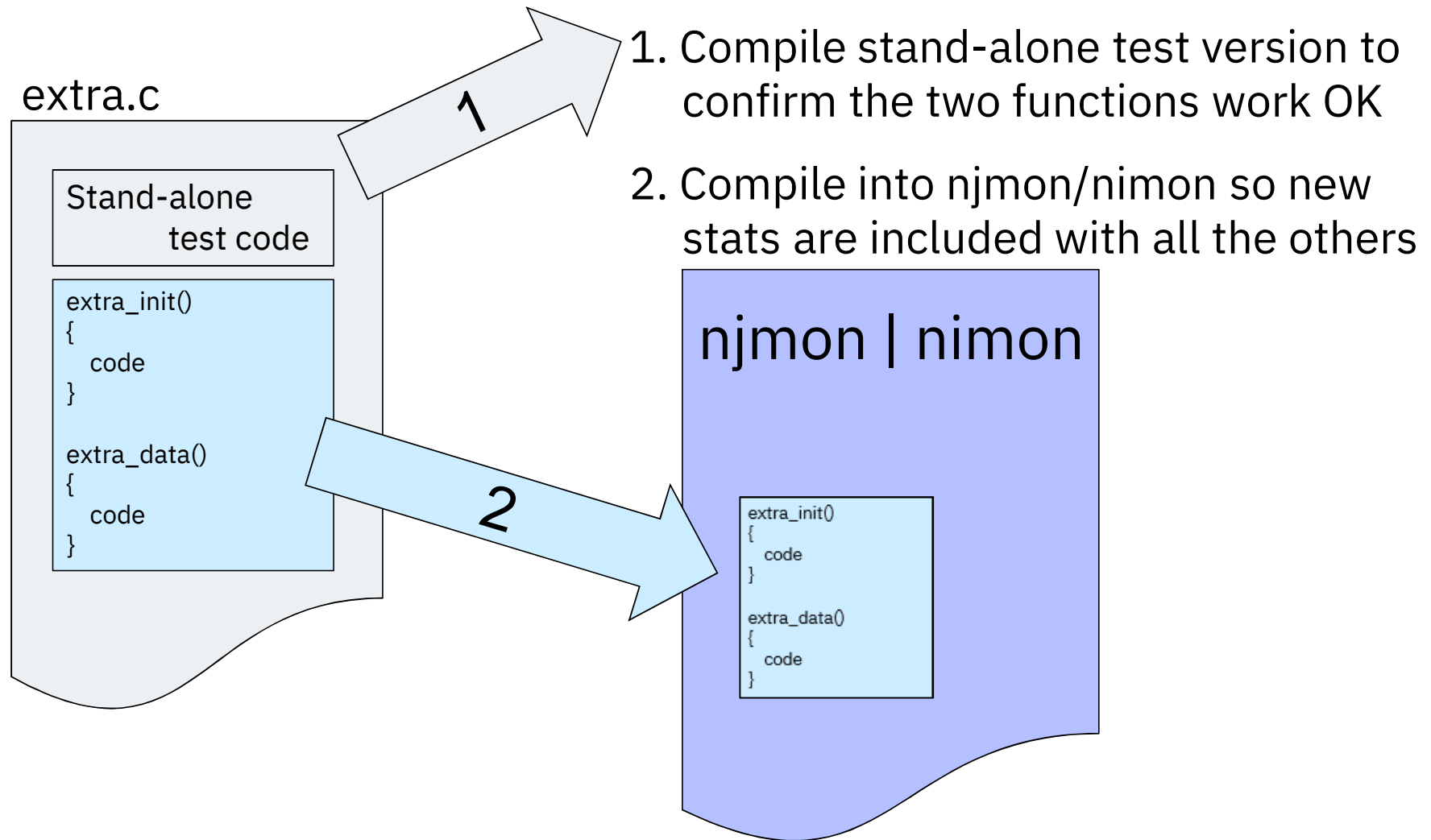
Questions

1. DeveloperWorks RIP
2. AIX Open Source Toolbox
3. Ansible
4. Keeping informed
5. Virtual I/O Server dates
6. AIX Memory Expansion AME
7. AIX Marketing
8. AIX Technical Education
9. AIX Strength to Strength
10. Redbook update
11. Linux on POWER review
12. AIX on POWER review
13. njmon project update

10 June at 10am BST [British Summer Time]

POWER Virtual User Group:

What's New from Mr. nmon!

http://ibm.biz/PowerVUG