What's New in Splunk 9.0

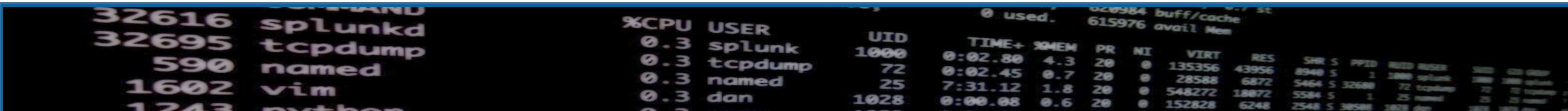
Dave Shpritz, Aplura Director of Services

Baltimore Splunk User Group

July 2022

Some modifications/additions, Ismo Soutamo, Data Findings Oy

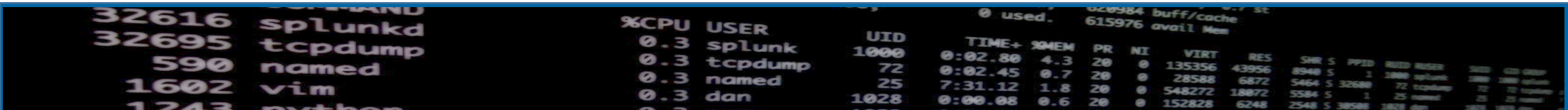
Helsinki Splunk User Group, 31.8.2022



Many Solutions, One Goal.

Agenda

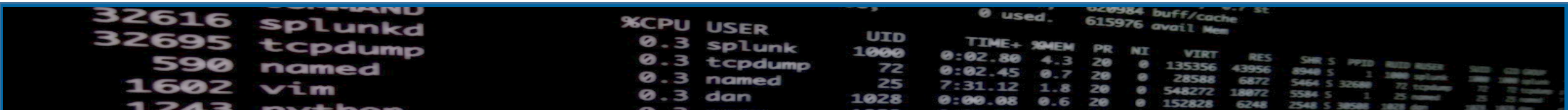
- Overview
- Security
- Indexing
- Admin
- Search
- Other stuff



Overview - Splunk Version 9.0.0

Latest versions are 9.0.1 and Splunk Cloud 9.0.2205.1 (31.8.2022)

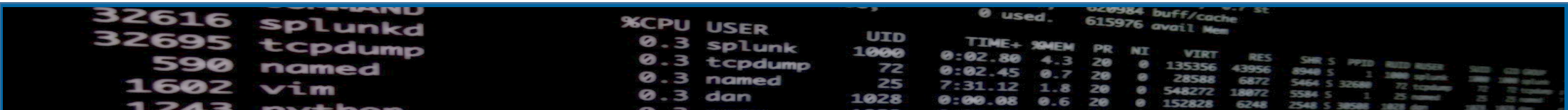
- Released at .conf22
- Release Notes: https://docs.splunk.com/Documentation/Splunk/9.0.0/ReleaseNotes/MeetSplunk
- Upgrade: https://docs.splunk.com/Documentation/Splunk/9.0.0/Installation/AboutupgradingREADTHISFIRST
- Known Issues: https://docs.splunk.com/Documentation/Splunk/9.0.0/ReleaseNotes/Knownissues



APLURA

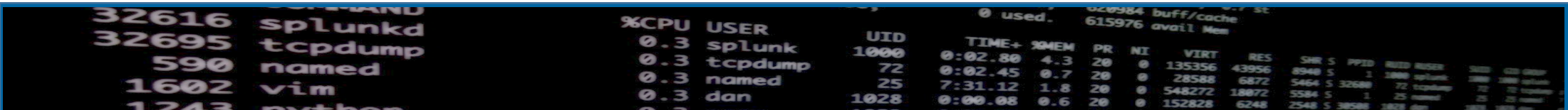
Many Solutions, One Goal.

Security



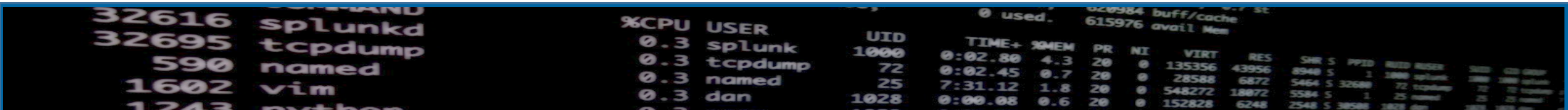
Security

- Security vulnerabilities
- TLS changes
- Audit improvements/Config Tracking
- Universal Forwarder
- Role-based fields



Vulnerabilities

- Quarterly security patches
- Deployment server/client
  - SVD-2022-0608, SVD-2022-0607
- TLS
  - SVD-2022-0606, SVD-2022-0603, SVD-2022-0602, SVD-2022-0601
- UFs
  - SVD-2022-0605
- Risky commands
  - SVD-2022-0604
- More info:
  - https://www.splunk.com/en_us/product-security.html
  - https://lantern.splunk.com/Splunk_Platform/Product_Tips/Enterprise/Upgrading_Splunk_Enterprise



Many Solutions, One Goal.

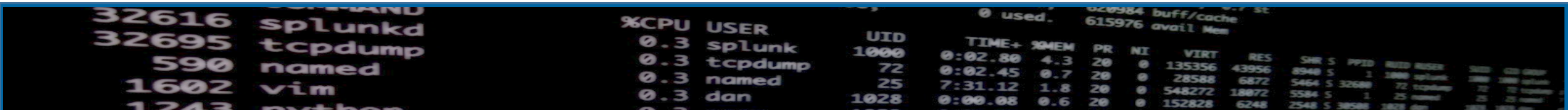
Deployment Server/Client

Deployment servers allow client publishing of bundles (SVD-2022-0608)

- Super bad
- Allows anything on your network to tell the DS to publish an app
- No detection searches
- Mitigate yesterday!
- Backported to 8.1 and 8.2 (the only one of these that was)

Deployment servers allow unauthenticated bundle access (SVD-2022-0607)

- Anyone can grab apps
- Previous pass4symmkey implementation not effective
- New pass4symmkey, but requires v9 clients
- Certificate validation

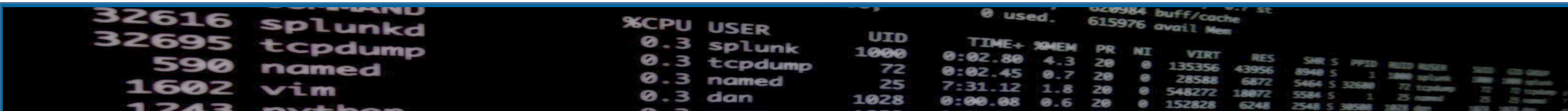


APLURA

Many Solutions, One Goal.

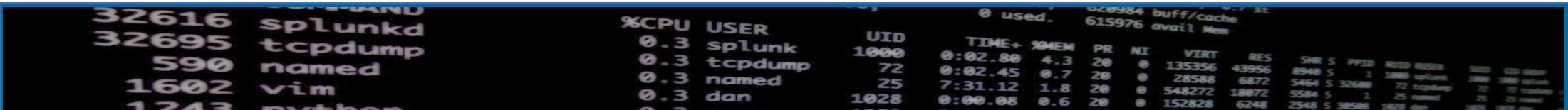
TLS

- SVD-2022-0606, SVD-2022-0603, SVD-2022-0602, SVD-2022-0601
- All present similar issues, that is, Splunk wasn't validating certificates correctly
- New TLS docs!
- https://docs.splunk.com/Documentation/Splunk/9.0.0/Security/AboutsecuringyourSplunkconfigurationwithSSL



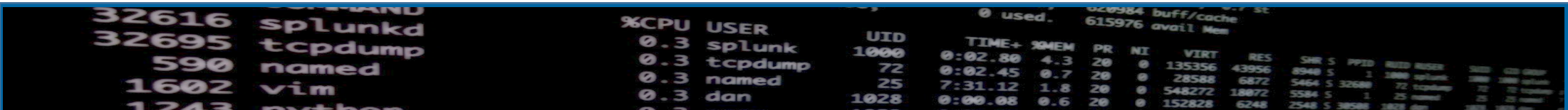
Universal Forwarders

- SVD-2022-0605
- Once you set a password, remote login is allowed by default
- Splunk 9 changes that
- No longer binding to all IPs, just localhost
- You can pull the same trick on older versions



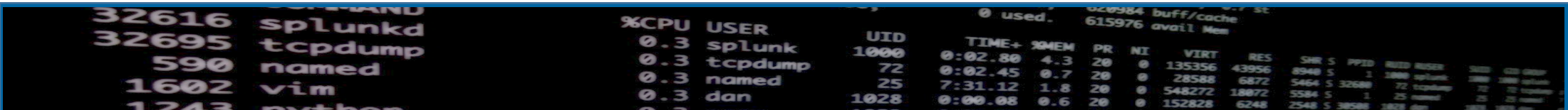
Risky ~~Business~~ Commands

- SVD-2022-0604
- Attacker using a compromised browser could inject commands
- Turn off your GUIs (indexers, for example, maybe your DS)
- New capabilities in Splunk 9



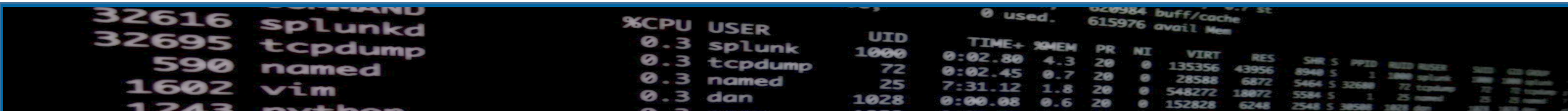
Audit improvements/Config Tracking

- New internal index, _configtracker, only admin can search by default
- Some fields are ignored, if they are sensitive
- Monitors:
  - $SPLUNK_HOME/etc/system
  - $SPLUNK_HOME/etc/apps
  - $SPLUNK_HOME/etc/users
  - $SPLUNK_HOME/etc/slave-apps
  - $SPLUNK_HOME/etc/instance.cfg
- You can add configs you want ignored
- https://docs.splunk.com/Documentation/Splunk/9.0.0/Troubleshooting/WhatSplunklogsaboutitself#Configuration_Change_Tracker



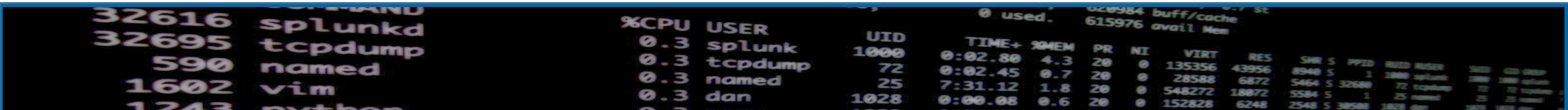
Universal Forwarder Security Improvements

- Config changes now monitored by default
- Windows Managed Service Accounts
- Automatic password generation on Windows
- Linux use of capabilities for a least-privilege install
  - https://docs.splunk.com/Documentation/Forwarder/9.0.0/Forwarder/Installleastprivileged
- Management interface now binds to localhost by default
- Native collection of MacOS Unified Logging



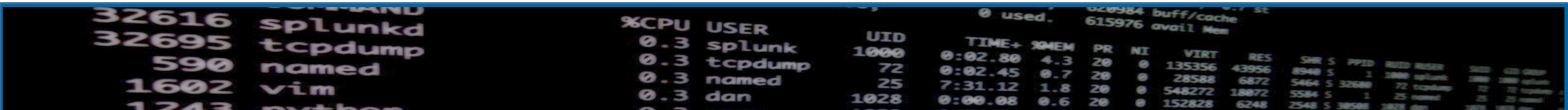
Role-based fields

- Preview feature. Currently provided “as is”, no support
- Can filter or mask
- Allows you to mask fields using SEDCMD-like syntax for obfuscation
- Can replace with hashes to allow for value-based searches/stats
- https://docs.splunk.com/Documentation/Splunk/9.0.0/Security/setfieldfiltering



APLURA
Many Solutions, One Goal.

Indexing

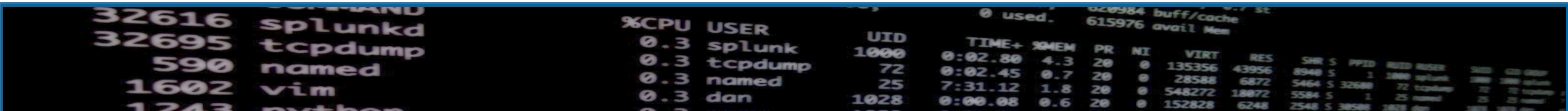


APLURA

Many Solutions, One Goal.

Indexing

- Ingest Actions
- Indexer Manager HA
- Bucket Merging
- Azure SmartStore
- TSIDX compression in SmartStore
- TSIDX writing level

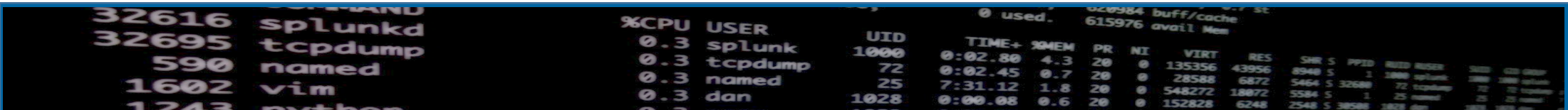


APLURA

Many Solutions, One Goal.

Ingest Actions

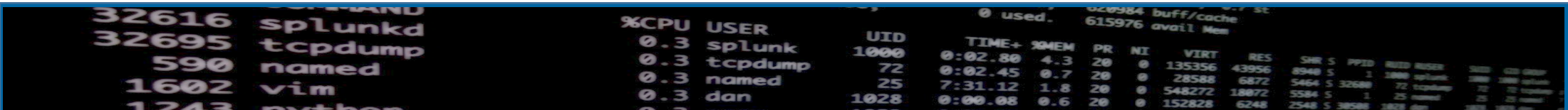
- Biggest change to the Splunk pipelines since 7.3
- Allows you more flexibility with data
- Only in Linux
- You can drop, mask, route (including S3!)
- Competes with Cribl, sort of
- Like TRANSFORMS, SEDCMD, but with a shiny interface (with previews, sometimes)
- Index Manager and Deployment Server deployment methods
- Even works on cooked events!
- https://docs.splunk.com/Documentation/Splunk/latest/Data/DataIngest



APLURA
Many Solutions, One Goal.

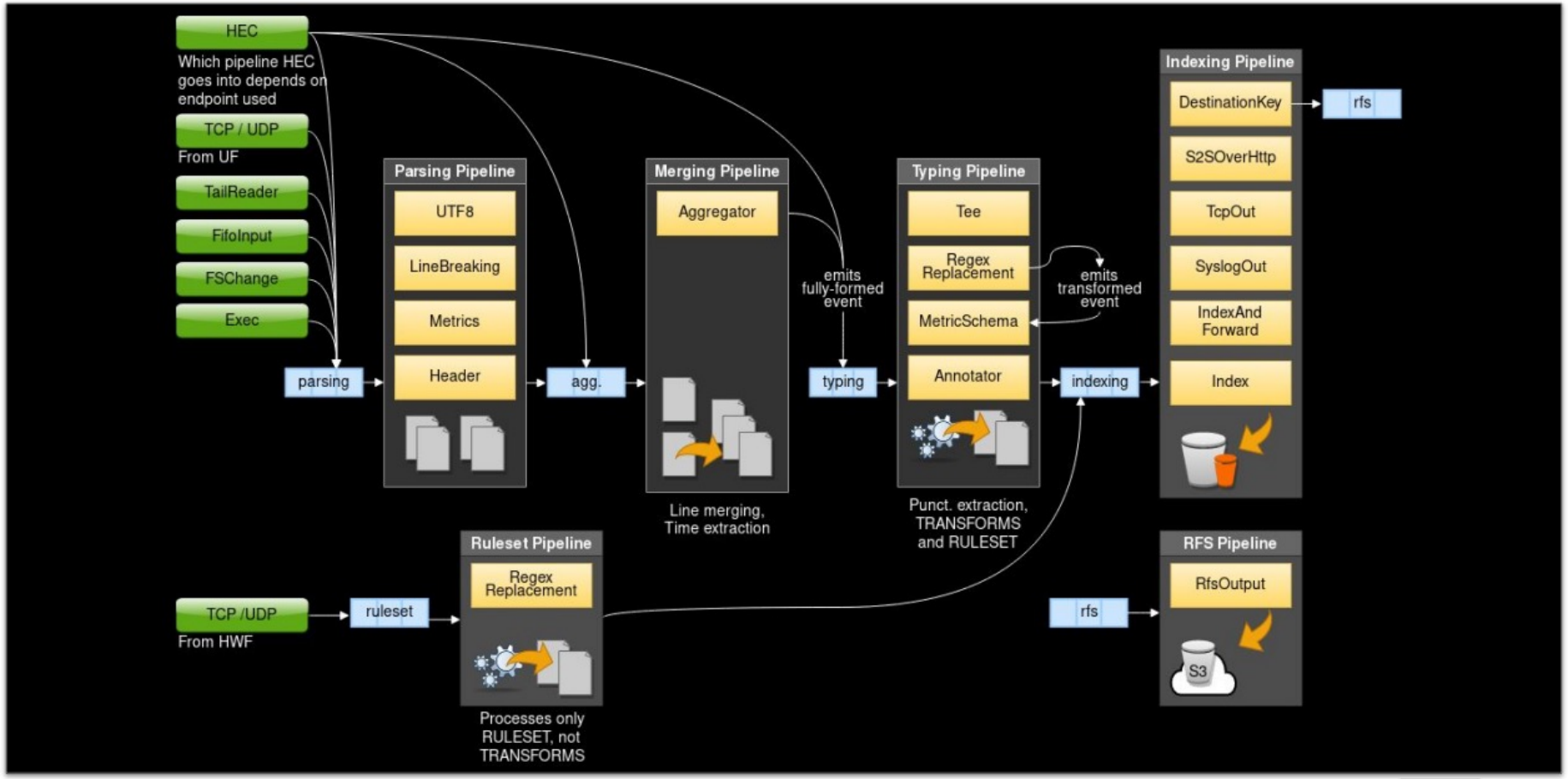
Ingest Actions - pipeline changes

- Uses the existing regexreplace processor
- Also hooked up from the TCP in for cooked events
- Applies after other transforms
- New DestinationKey in indexing pipelines for output to S3
- S3 only works on AWS, saves to a format called ”HEC json”
- Can be used for re-ingest, but no index-time fields other than standard metadata (minus index)
- New metrics (disabled by default, can enable per ruleset)



APLURA
Many Solutions, One Goal.

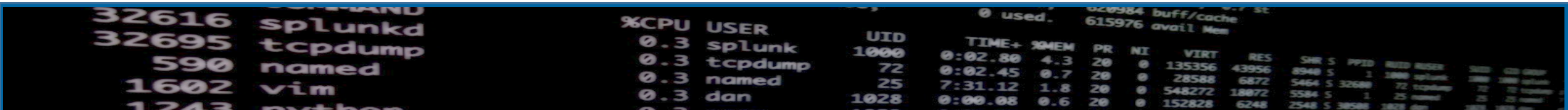
Ingest Actions - the pipelines



From .conf22 **PLA1224A-V**

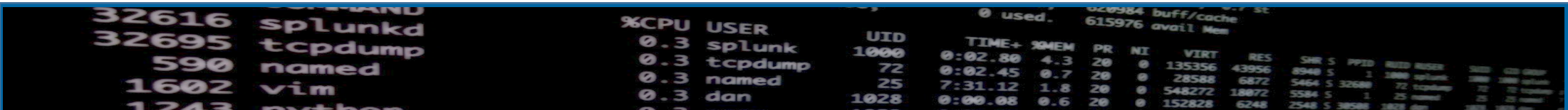
Ingest Actions – Deployment (CM)

- Interface on Cluster Manager allows for preview and deployment
- Interface allows S3 config
- Deployment is just the standard bundle push, so look out for undeployed changes!
- New rulesets don’t require rolling restart, but change/remove does (right now)
- New app: splunk_ingest_actions
- New capabilities: list_ingest_ruleset, edit_ingest_ruleset



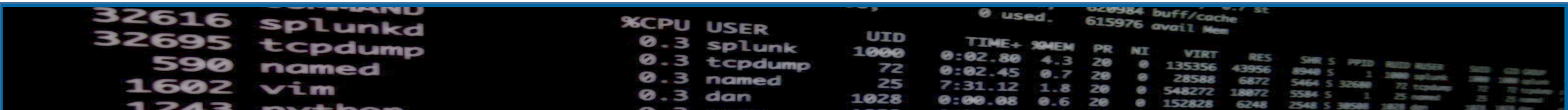
Ingest Actions – Deployment (DS)

- No configuration of S3
- Only supports Linux HF (pipelines may be on UFs, but not tested)
- Currently only supports 10 HFs
- Dedicated DS!
  - The deployment server must be dedicated to the ingest actions function and cannot be used for other types of deployment client configurations. The deployment server cannot service any other deployment clients.
- Even visiting the UI creates a new serverclass “IngestAction_AutoGenerated”
- Careful adding rulesets to a TA and then deploying it from your normal DS or to everywhere. Double processing is a thing.



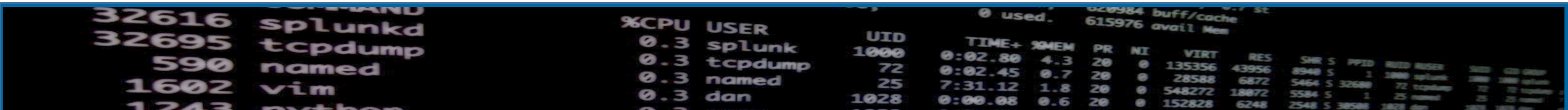
Cluster Manager HA

- CM was a single point of failure
- Used to have to sync/failover manually, but some things were in memory, so left behind
- Uses an active/passive topology
- Bundles, generation, peers get synced (bucket list not included)
- Configurable heartbeat
- With a load balancer in front of your CM, this can be automated
- Can also be done with DNS entries, but that would be manual
- New tab in the Indexer Clustering dashboard shows status (in a passive node, that is all you get)
- https://docs.splunk.com/Documentation/Splunk/9.0.0/Indexer/CMredundancy



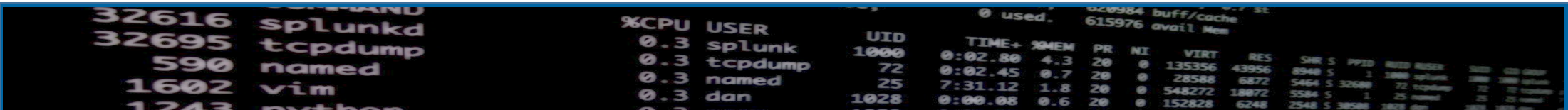
Bucket Merging

- cluster-merge-buckets command
- Can be used to merge smaller buckets for a reduced overall bucket count
- Covers DMA
- Dry run, backup, runtime limitations
- https://docs.splunk.com/Documentation/Splunk/9.0.0/Troubleshooting/Commandlinetoolsforusewith Support#:~:text=cluster%2Dmerge%2Dbuckets,the%20old%20buckets%20are%20removed



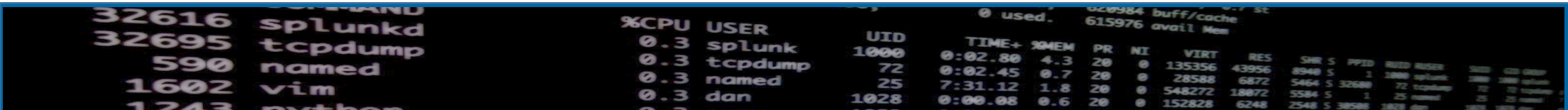
Azure SmartStore

- SmartStore (S2) now can be done natively in Azure
- Uses Azure Blobs
- Not a ton of docs
- https://docs.splunk.com/Documentation/Splunk/9.0.0/Indexer/ConfigureAzureremotestoreforSmartStore#Configure_an_Azure_Blob_remote_store



TSIDX compression in SmartStore

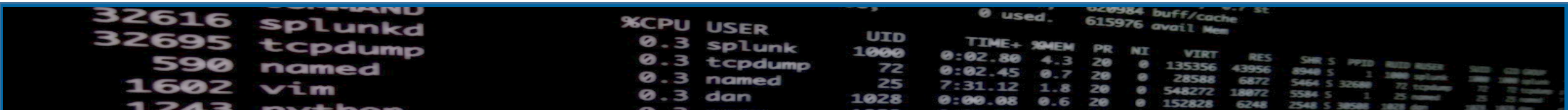
- Save storage space/transit for S3
- Compression/decompress is transparent, done on the wire
- Average compression ratio is 50%
- Basic config, just need to turn it on
- Only works on AWS S3
- Once you have turned it on, you cannot turn it off, no backing down (remember, downgrade isn't a supported thing)
- "Talk to support first"
- https://docs.splunk.com/Documentation/Splunk/9.0.0/Indexer/ConfigureSmartStore#Compress_tsidx_files_upon_upload_to_S3



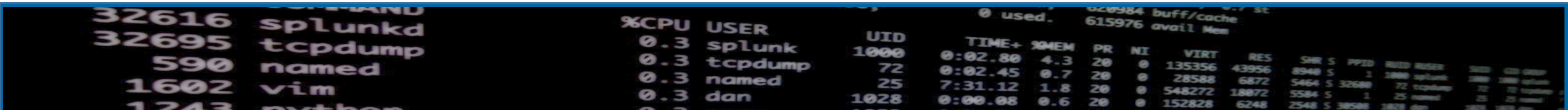
APLURA
Many Solutions, One Goal.

TSIDX writing level

- Controls the format of the TSIDX files
- Enhancements have been made over the years, version dependent
- Now defaults to 3 (was 2)
- Max is 4
- Older indexers can’t read the newer levels
  - Some exceptions, if older indexer support same level than a new one
- Check the chart in docs for version compatibility
- https://docs.splunk.com/Documentation/Splunk/9.0.0/Indexer/Reducetsidxdiskusage#The_tsidx_writing_level



Admin

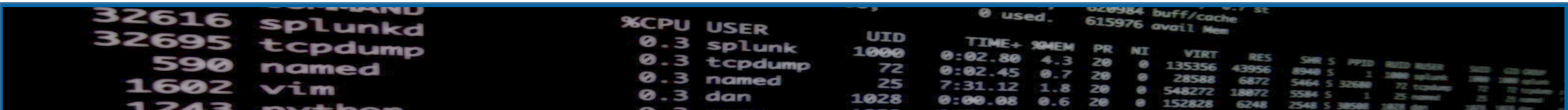


APLURA

Many Solutions, One Goal.

Admin

- Splunk Assist
- KVStore upgrade
- Readiness App and Python 3
- Health Report and Monitoring Console
- Workload management
- Biased Language

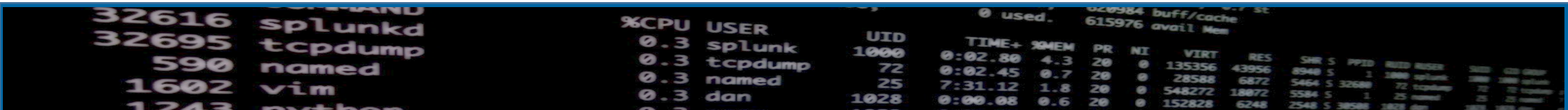


APLURA

Many Solutions, One Goal.

Splunk Assist

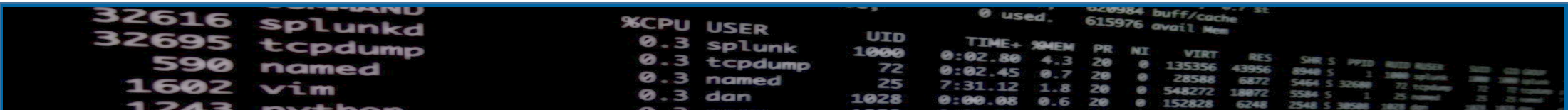
- Cloud based service, can be used from on-prem
- Uses telemetry data, so you have to be sending that (Usage Data)
- Net new offering
- In the Monitoring Console
- Needs to be activated
- Tied to your enterprise license
- Can't be used on FIPS instances or in docker
- Current features:
  - TLS cert checking is a feature that jumps out: https://docs.splunk.com/Documentation/Splunk/9.0.0/DMC/UseCertAssist
  - Config assist: https://docs.splunk.com/Documentation/Splunk/9.0.0/DMC/UseConfigAssist



APLURA
Many Solutions, One Goal.

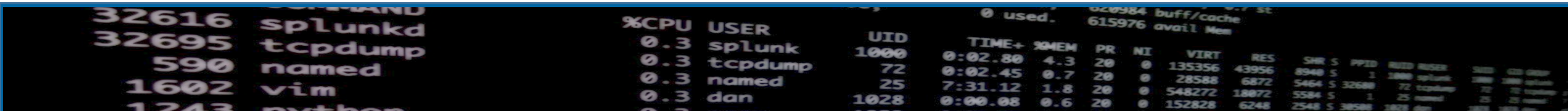
KVStore upgrade

- Migrates from KVStore version 3.6.x to 4.2 (mongodb)
- Reduces storage usage
- Performance improvements
- Upgrading to 9 requires this
- Also requires upgrading to WiredTiger, if you haven't already
- Automatic if you upgrade to 9
- https://docs.splunk.com/Documentation/Splunk/9.0.0/Admin/MigrateKVstore#Migrate_the_KV_store_storage_engine



Readiness App and Python 3

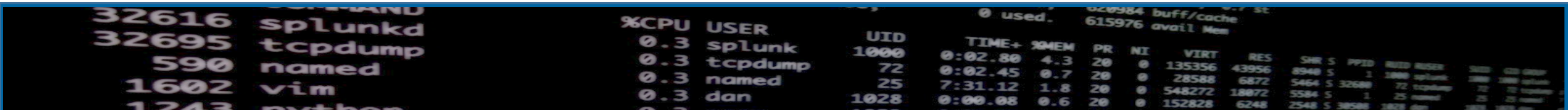
- Splunk Upgrade Readiness App now at version 4
- Prepares for Python 3 and jQuery framework changes
- Can scan for issues
- *There is no Python 2 in Splunk 9*
- Checks TLS configurations (inbound and outbound in Python)
- https://docs.splunk.com/Documentation/Splunk/9.0.0/UpgradeReadiness/About



APLURA
Many Solutions, One Goal.

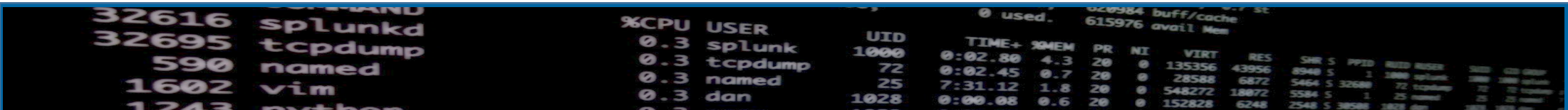
Health Report and Monitoring Console

- Better descriptions of indicators and what they mean
- New forwarder latency indicator
- Also looks for potential config issues
- Alerts can now be snoozed
- Alerts can be emailed to admins
  - https://docs.splunk.com/Documentation/Splunk/9.0.0/DMC/Configurealerts#Set_up_health_report_alert_actions
- Monitoring Console now can automatically build your asset list
  - https://docs.splunk.com/Documentation/Splunk/9.0.0/DMC/Configureindistributedmode#Enable_automatic_distributed_mode_configuration



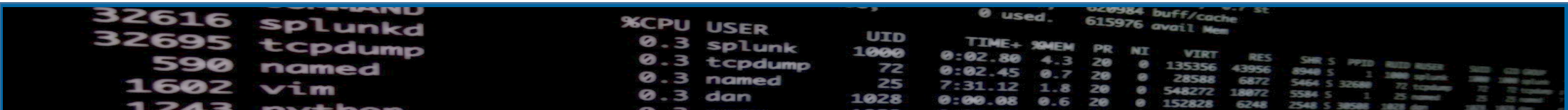
Workload management

- More options for more flexibility
- Roles and indexes now support wildcards
- Can set limits on Ad doc searches
- https://docs.splunk.com/Documentation/Splunk/9.0.0/Workloads/WorkloadRules

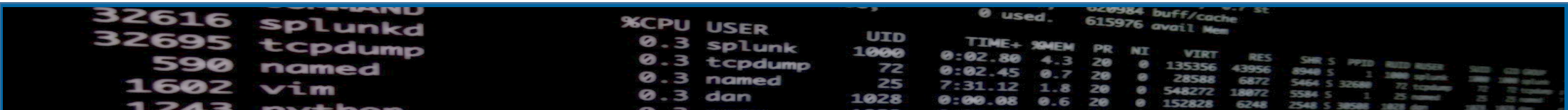


Biased Language

- This has been a long running project at Splunk
- Started a few releases ago
- IDXC, Licensing, allow and deny lists
- There is backwards compatibility, but older config directives may be removed, there are a lot of notes in the docs around this
- Note that you can't use both
- Path changes: master-apps -> manager-apps, slave-apps -> peer-apps
  - https://docs.splunk.com/Documentation/Splunk/9.0.0/Indexer/Updatepeerconfigurations#Which_directory_to_use:_manager-apps_or_master-apps.3F
- The old terms still remain in logs as there are customers that use them in multiple ways. Logging may change once more of the effort is complete
- In MC, there are server roles that may need to be updated



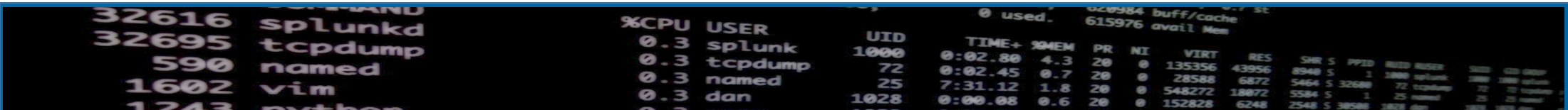
Search



Many Solutions, One Goal.

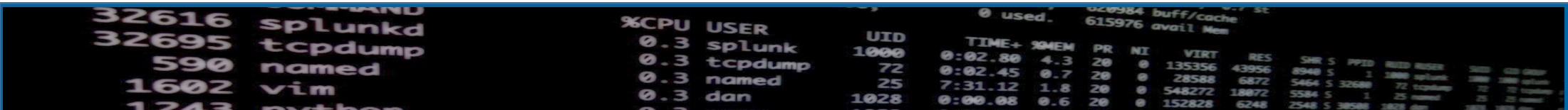
Search

- Federated Search
- Geoip DB



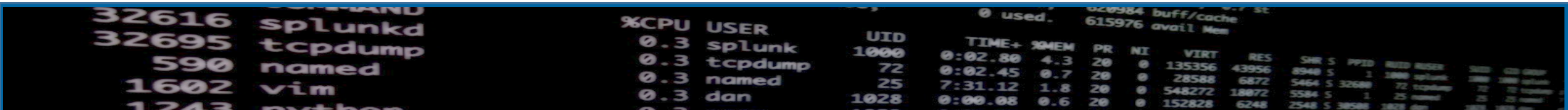
Federated Search

- Federated Search != Hybrid Search: http://docs.splunk.com/Documentation/Splunk/9.0.0/Search/Hybrid2Federated
  - Hybrid = peering to other CM/indexers
  - Federated Search = connecting via remote SH
- https://docs.splunk.com/Documentation/Splunk/9.0.0/Search/Aboutfederatedsearch
- Better UI with options for restrictions for knowledge objects to limit bundle replication
- Now options for Splunk Cloud -> On prem FS
- Can now use tstats, data models, DMA, lookups
- Transparent Federated Search
  - No more writing in special commands or syntax
  - Only runs in fast mode, so no search-time fields
  - No real-time searching
  - Has to be Transparent or Standard mode, not mixed

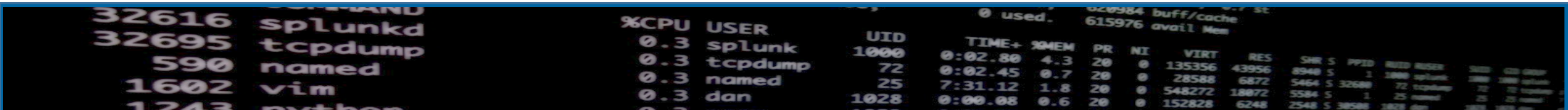


Geoip DB

- No longer using MaxMind as the provider
- The format is the same
- Now using an open source provider
- If you are using a subscription from MaxMind, it will still work



Other stuff



Many Solutions, One Goal.

Other stuff

- Dashboards
  - Syntax changes for visualizations
  - No more inline stylesheets
  - Lots of changes to Dashboard Studio: https://docs.splunk.com/Documentation/Splunk/9.0.0/DashStudio/WhatNew
  - Version information is needed on SimpleXML dashboards
- jQuery
  - Admins can disable jQuery 2 access
- Splunk Secure Gateway App
  - New version, lots of changes to make mobile access better
- Semantic versioning of APIs
  - Makes writing things using Splunk APIs easier and more stable, allows for targeting a specific version, and gentle deprecation of older versions
  - https://semver.org/