

SDP Release Notes

Perforce Professional Services

Version v2022.1, 2022-05-27

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Preface

Please Give Us Feedback

Perforce welcomes feedback from our users. Please send any suggestions for improving this document or the SDP to consulting@perforce.com.

Chapter 1. Overview

These release notes document changes to the SDP.

There are two flavors of the SDP, Unix and Windows.

For UNIX/Linux, see: [SDP Guide for UNIX/Linux](#)

For Windows, see: [SDP Guide for Windows](#)

Chapter 2. What's New in SDP 2022.1.

The SDP 2022.1 release followed shortly after the Helix Core 20220.1 release.

The SDP 2022.1 release adds formal support for P4D 2022.1, and makes it the default version.

Chapter 3. What's Coming Next in SDP 2022.2?

For a list of features expected to be included in the 2022.2 release, see the [SDP r22.2 Road Map](#).

Chapter 4. SDP Health Checks

If you need to contact Perforce Support to analyze an issue with the SDP on UNIX/Linux, you can use the `sdp_health_check.sh` script. This script is not included in the SDP, as it can be used with any and all versions of the UNIX/Linux SDP dating back to its origins 2007. This script is acquired with the procedure below.

If your Perforce Helix server machine has outbound internet access, execute the following while logged in as the operating system user that owns the `/p4/common/bin` directory (typically `perforce` or `p4admin`):

```
cd
```

```
curl -s -O https://swarm.workshop.perforce.com/projects/perforce-software-  
sdp/download/tools/sdp_health_check.sh  
chmod +x sdp_health_check.sh
```

```
./sdp_health_check.sh
```

If your Perforce Helix server machine does not have have outbound internet access, acquire the `sdp_health_check.sh` file from a machine that does have outbound internet access, and then somehow get that file to your Perforce Helix server machine.

If you have multiple server machines with SDP, possibly including machines running P4D replicas or edge servers, P4Proxy or P4Broker servers, run the health on al machines of interest.

The `sdp_health_check.sh` script will produce a log file that can be provided to Perforce Support to help diagnose configuration issues and other problems. The script has these characteristics:

- It is always safe to run. It does only analysis and reporting.
- It does only fast checks, and has no interactive prompts. Some log files are captured such as `checkpoint.log`, but not potentially large ones such as the `p4d` server log.
- It requires no command line arguments.
- It works for any and all UNIX/Linux SDP version since 2007.

Chapter 5. SDP and P4D Version Compatibility

The released versions of SDP match released versions of P4D. So SDP 2022.1 is guaranteed to work with P4D 2022.2. SDP 2022.1 is also supported with:

- P4D 2020.1
- P4D 2020.2
- P4D 2021.1
- P4D 2021.2
- P4D 2022.1

The SDP is often forward- and backward-compatible with P4D versions, but for best results they should be kept in sync by upgrading SDP before P4D. This is partly because the SDP contains logic that helps upgrade P4D, which can change as P4D evolves.

The SDP is aware of the P4D version, and has backward-compatibility logic to support older versions of P4D. This is guaranteed for the supported versions of P4D listed above. Backward compatibility of SDP with older versions of P4D may extend farther back, though without the "officially supported" guarantee.

Chapter 6. Change History

6.1. SDP 2022.1 GA

Released: Rev. SDP/MultiArch/2022.1/28855 (2022/05/27)

Jobs Fixed since change 28649 up to 28855 (F=Feature, B=Bug):

- [SDP-331](#) (B): DOC: lack of clarity on folder ownership.
- [SDP-724](#) (F): Add SDP Troubleshooting and FAQ to SDP core docs.
- [SDP-725](#) (B): Typo in the instructions
- [SDP-770](#) (B): Server start is more robust if /var/log is full.
- [SDP-771](#) (F): Add ping or similar check for P4MASTERHOST.
- [SDP-773](#) (F): p4verify.sh: Add '-dlf <depot_list_file>' to specify prioritized list of depots.
- [SDP-774](#) (F): p4verify.sh: Add low-RAM utilization option to p4verify.sh.
- [SDP-780](#) (F): Update Perforce Support address to support-helix-core@perforce.com.
- [SDP-782](#) (F): Improve Swarm triggers test script to check for self-signed certs.
- [SDP-783](#) (B): load_checkpoint.sh: Fixed error in event of slow broker restart.
- [SDP-794](#) (F): Enhance error message in verify_sdp.sh if p4d_N script is malformed.
- [SDP-796](#) (F): Updated default Helix Core (p4d/p4broker/p4p/p4) version to r22.1.
- [SDP-798](#) (B): Changed URL for get_helix_binaries.sh back to ftp.perforce.com.

6.2. SDP 2021.2 Patch 1

Released: Rev. SDP/MultiArch/2021.2/28649 (2022/03/03)

Jobs Fixed since change 28410 up to 28649 (F=Feature, B=Bug):

- [SDP-562](#) (F): Support SELinux in enforcing mode on RHEL 8/CentOS 8/Rocky Linux 8.
- [SDP-635](#) (F): Get verify_sdp.sh to find bogus script/symlink targets.
- [SDP-636](#) (F): Get verify_sdp.sh to find bogus bins in /p4/common/bin.
- [SDP-712](#) (B): load_checkpoint.sh should not require a license unless p4d needs it.
- [SDP-729](#) (F): Add support for custom pre- and post- processing to mkrep.sh.
- [SDP-733](#) (F): Enhances mkrep Phase 2 docs to mention loading checkpoint and journal.
- [SDP-740](#) (B): sdp_upgrade.sh ignores a narrow subset of preflight checks.
- [SDP-742](#) (B): load_checkpoint.sh fails for untrusted SSL ports.
- [SDP-744](#) (F): Enhance load_checkpoint.sh to be able to call p4verify.sh.
- [SDP-747](#) (F): Added info about SDP Health Check script to core SDP docs.
- [SDP-748](#) (B): mkrep.sh forgets ssl: prefix on ExternalAddress for new replicas.

- [SDP-749](#) (B): sync_replica.sh needs to work for HA of an edge server.
- [SDP-759](#) (F): Support IPv6 SSL Prefixes.
- [SDP-761](#) (F): Tech Preview: Give daily_checkpoint.sh ability to skip offline_db regeneration.
- [SDP-763](#) (F): Enhanced p4verify.ps1 with new '-fast' and '-nt' options.

6.3. SDP 2021.2 GA

Released: Rev. SDP/MultiArch/2021.2/28410 (2021/11/24)

Jobs Fixed since change 28261 up to 28410 (F=Feature, B=Bug):

- [SDP-710](#) (F): Simplify creation of proxy-only and broker-only instances with mkdirs.sh.
- [SDP-713](#) (B): Customizations to p4_1.vars are not preserved during sdp_upgrade.sh
- [SDP-716](#) (F): Add error message when p4d_base fails to start due to systemd
- [SDP-717](#) (F): Updated default Helix Core version to 2021.2 in get_helix_binaries.sh.

6.4. SDP 2021.1 Patch 2 (Doc Only, No Functional Changes)

Released: Rev. SDP/MultiArch/2021.1/28261 (2021/11/13)

Jobs Fixed since change 28253 up to 28261 (F=Feature, B=Bug):

- [SDP-709](#) (B): Doc typo fix in SDP Guide. Non-functional change.

6.5. SDP 2021.1 Patch 1

Released: Rev. SDP/MultiArch/2021.1/28253 (2021/11/13)

Jobs Fixed since change 28238 up to 28253 (F=Feature, B=Bug):

- [SDP-706](#) (B): Fixed detection of P4MASTERHOST and other settings.
- [SDP-707](#) (F): Enhanced docs on Upgrading the SDP.
- [SDP-708](#) (F): Downgraded p4 counter SDP_VERSION checks to warning.

6.6. SDP 2021.1 GA

SDP 2021.1 Release Overview

The banner feature of the SDP 2021.1 release is the `sdp_upgrade.sh` script that automates SDP upgrades on Linux so long as the starting version is SDP 2020.1.

This is part of a larger effort to prioritize ease of upgrades for the SDP and Helix Core.

For more information, see the section in the SDP Guide on [Upgrading the SDP](#).

Released: Rev. SDP/MultiArch/2021.1/28238 (2021/11/12)

Jobs Fixed since change 27955 up to 28238 (F=Feature, B=Bug):

- [SDP-191](#) (B): Fixed default thresholds values in proxy cache cleaner.
- [SDP-540](#) (F): Add `sdp_upgrade.sh` script to the SDP.
- [SDP-549](#) (F): Enhanced `load_checkpoint.sh` to accept journals after checkpoint.
- [SDP-615](#) (B): `load_checkpoint.sh` can show 'EXITCODE: 0' on failure.
- [SDP-645](#) (F): Enhance `p4verify.sh` to expose new '--only' option in p4d r21.1+.
- [SDP-667](#) (F): Make preview mode default behavior for `upgrade.sh`; add '-y' to confirm.
- [SDP-668](#) (F): Do you have a way to automate validation of http/https links in files when packaging up the SDP so broken links can be checked with each release?
- [SDP-674](#) (B): Unclear `verify_sdp.sh` message related to P4JOURNAL configurable def'n.
- [SDP-676](#) (F): Added optional feature to remove excess `$LOGS/journal.NNN` files on standbys.
- [SDP-677](#) (F): For `verify_sdp.sh`, add '-warn' like '-skip' to warn for named tests.
- [SDP-678](#) (B): `load_checkpoint.sh` logins for replicas fail if p4d starts slow with systemd.
- [SDP-683](#) (B): Document setup for desktop shortcut for `p4env.bat`
- [SDP-684](#) (B): The `configure_new_server.bat` set `auth.id` wrongly to `p4_`
- [SDP-686](#) (B): Remove `replica_status.log` as part of standard cleanup.
- [SDP-688](#) (F): Document creation of P4Admin Desktop Shortcut for Windows SDP.
- [SDP-691](#) (F): In `mkdirs.sh`, make SDP perms configurable 600/640/644 or 700/750/755.
- [SDP-698](#) (B): `p4verify.sh` no longer relies on `$USER` being defined.
- [SDP-699](#) (F): Added `upgrade.sh` to enable custom pre- and post-upgrade processing.
- [SDP-702](#) (B): The `recover_edge.sh` script should write `offline_db_usable.txt`.

6.7. Checking the SDP Version

Once installed, the SDP `Version` file exists as `/p4/sdp/Version`. This is a simple text file that contains the SDP version string. The version can be checked using a command like `cat`, as in this sample command:

```
$ cat /p4/sdp/Version
Rev. SDP/MultiArch/2020.1/27955 (2021/08/13)
```

That string can be found in Change History below.

6.8. SDP 2020.1 Patch 12

Released: Rev. SDP/MultiArch/2020.1/27955 (2021/08/13)

Jobs Fixed since change 27919 up to 27955 (F=Feature, B=Bug):

- [SDP-675](#) (B): "Preflight journal health check" issue caused by a grep command not coping well with non ascii characters.

6.9. SDP 2020.1 Patch 11

Released: Rev. SDP/MultiArch/2020.1/27919 (2021/07/19)

Jobs Fixed since change 27899 up to 27919 (F=Feature, B=Bug):

- [SDP-669](#) (F): Implement p4env.bat and p4login.bat properly with PowerShell.
- [SDP-670](#) (B): verify_sdp.sh can wrongly give 'Current user ... does not own' error.

6.10. SDP 2020.1 Patch 10

Released: Rev. SDP/MultiArch/2020.1/27899 (2021/07/13)

Jobs Fixed since change 27820 up to 27899 (F=Feature, B=Bug):

- [SDP-659](#) (F): SDP daily checkpoint call to verify_sdp.sh now skips license checks.
- [SDP-662](#) (F): Enhanced SDP Guide for Windows re: Scheduled Tasks.
- [SDP-664](#) (F): Clarify that SDP r20.1 supports Helix Core binaries up to r21.1.

6.11. SDP 2020.1 Patch 9

Released: Rev. SDP/MultiArch/2020.1/27820 (2021/06/19)

Jobs Fixed since change 27763 up to 27820 (F=Feature, B=Bug):

- [SDP-648](#) (F): Updated p4d version-specific list of federated db.* files for edge servers.
- [SDP-650](#) (B): clear_depot_Map_fields.sh doc is unclear for unload depots.
- [SDP-651](#) (F): clear_depot_Map_fields.sh support for graph depots added.
- [SDP-656](#) (B): replica_status.sh now captures all error output if replica is offline.
- [SDP-657](#) (F): Enhanced mkdirs.sh checks for edge server setup.

6.12. SDP 2020.1 Patch 8 (Doc Only, No Functional Changes)

Released: Rev. SDP/MultiArch/2020.1/27763 (2021/05/07)

Jobs Fixed since change 27759 up to 27763 (F=Feature, B=Bug):

- [SDP-644](#) (B): Fix typo in SDP Legacy Upgrade Guide.

6.13. SDP 2020.1 Patch 7

Released: Rev. SDP/MultiArch/2020.1/27759 (2021/05/07)

Jobs Fixed since change 27536 up to 27759 (F=Feature, B=Bug):

- [SDP-517](#) (B): Please use svcinst to start and stop the Perforce Service.
- [SDP-616](#) (F): Clarify usage for mkrep.sh '-f <FromServerID>' option.
- [SDP-617](#) (B): SDP on Windows should manage service only with svcinst.exe.
- [SDP-618](#) (F): Port update_limits.py to Windows.
- [SDP-619](#) (F): Clear up confusion between ServerID and SDP instance name.
- [SDP-625](#) (B): upgrade.sh needs to bounce p4d for multi-instance patch-only upgrades.
- [SDP-627](#) (F): Add verify_sdp.sh check for p4*.services files w/o world read access.
- [SDP-630](#) (B): Bogus root ownership of ssl/config.txt after mkdirs.sh.
- [SDP-631](#) (B): verify_sdp.sh Invalid error re: crontab on proxy servers.
- [SDP-638](#) (B): Address gaps in Legacy SDP Upgrade Guide for upgrades from 2014-era SDP.
- [SDP-639](#) (F): Make SDP password file check a skippable test in verify_sdp.sh.
- [SDP-640](#) (B): verify_sdp.sh check for password file existence does not run.

6.14. SDP 2020.1 Patch 6 (Doc Only, No Functional Changes)

Released: Rev. SDP/MultiArch/2020.1/27536 (2021/02/28)

Jobs Fixed since change 27524 up to 27536 (F=Feature, B=Bug):

6.15. SDP 2020.1 Patch 5

Released: Rev. SDP/MultiArch/2020.1/27524 (2021/02/26)

Jobs Fixed since change 27457 up to 27524 (F=Feature, B=Bug):

- [SDP-604](#) (F): Add more detail to Legacy SDP upgrade doc.

- [SDP-605](#) (B): Default 'p4' binary is in /p4/sdp/helix_binaries.
- [SDP-607](#) (F): Do not set submit.allowbgtransfer for new servers.
- [SDP-609](#) (F): Enhanced SDP Guide (Unix) related to init scripts.
- [SDP-610](#) (F): Add doc coverage for using only limited sudo.
- [SDP-611](#) (F): Add doc coverage for using multiple broker configs.

6.16. SDP 2020.1 Patch 4

Released: Rev. SDP/MultiArch/2020.1/27457 (2021/02/17)

Jobs Fixed since change 27414 up to 27457 (F=Feature, B=Bug):

- [SDP-600](#) (F): Normalize usage of verify_sdp.sh as called from other scripts.
- [SDP-601](#) (B): Local setting of VERIFY_SDP_SKIP_TEST_LIST ignored by upgrade.sh.

6.17. SDP 2020.1 Patch 3B

Released: Rev. SDP/MultiArch/2020.1/27414 (2021/02/07)

Jobs Fixed since change 27403 up to 27414 (F=Feature, B=Bug):

- [SDP-599](#) (B): Refinement needed to logic for test skipping p4root/offline_db.

6.18. SDP 2020.1 Patch 3A

Released: Rev. SDP/MultiArch/2020.1/27403 (2021/02/06)

Jobs Fixed since change 27398 up to 27403 (F=Feature, B=Bug):

- [SDP-598](#) (F): For verify_sdp.sh: Add check for P4TRUST files if SSL enabled.

6.19. SDP 2020.1 Patch 3

Released: Rev. SDP/MultiArch/2020.1/27398 (2021/02/06)

Jobs Fixed since change 27357 up to 27398 (F=Feature, B=Bug):

- [SDP-592](#) (B): verify_sdp.sh reports same excess binary in path multiple times.
- [SDP-593](#) (B): verify_sdp.sh should ignore dot '.' in PATH.
- [SDP-594](#) (F): mkdirs.sh should not deploy p4p or p4dtg by default.
- [SDP-595](#) (B): mkdirs.sh should not deploy p4d to p4p/p4broker only host.
- [SDP-596](#) (B): Install errors when running mkdirs.sh on replica servers

6.20. SDP 2020.1 Patch 2

Released: Rev. SDP/MultiArch/2020.1/27357 (2021/02/01)

Jobs Fixed since change 27351 up to 27357 (F=Feature, B=Bug):

- [SDP-591](#) (F): Release notes update only: Added GA/patch release headings.

6.21. SDP 2020.1 Patch 1

Released: Rev. SDP/MultiArch/2020.1/27351 (2021/01/31) - Patch 1

Jobs Fixed since change 27325 up to 27351 (F=Feature, B=Bug):

- [SDP-590](#) (F): Added sample script to implement rename of users for Swarm.
- [SDP-589](#) (B): Correct version checks for p4d major version.
- [SDP-570](#) (F): Add upgrade.sh '-M' manual option relinking binaries w/o -xu.
- [SDP-588](#) (F): Enhance verify_sdp.sh to allow skipping offline_db checks.

6.22. SDP 2020.1 GA

SDP 2020.1 Release Overview

In a nutshell, here is what the SDP r2020.1 release is all about:

- **Improved Documentation.** The SDP documentation has been reformatted to AsciiDoc. Documentation coverage has been expanded, new content added, and documentation for various scripts is now included in the main documentation.
- Publishing of [The journalPrefix Standard](#).
- Updating of the [Server Spec Naming Standard](#).
- Bug fixes and improvements to [load_checkpoint.sh](#).
- Bug fixes and improvements to [p4verify.sh](#). The `-recent` flag is fixed and verification of shelves has improved.
- Bug fixes and improvements to [mkrep.sh](#), which adheres to documented standards.
- **Improved Helix Core Upgrades.** The [upgrade.sh](#) script that upgrades [p4](#), [p4d](#), [p4broker](#), and [p4p](#) has been greatly improved, and a new [get_helix_binaries.sh](#) script added. Documentation now covers how to do Global Topology "Outer to Inner" upgrades.
- **Improved Self-Verification.** The [verify_sdp.sh](#) script has been improved to do many more checks. This script is also relied on by other SDP scripts to ensure things are in a good start before they start their processing. The [refresh_P4ROOT_from_offline_db.sh](#) and [upgrade.sh](#) scripts use [verify_sdp.sh](#).
- The systemd interactions have been improved in a few key ways. Notably, on systems in which systemd is configured, a safety check now ensure that systemd is used, so that systemd's concept of service status is reliable. The format of the systemd unit files changes with this release.

More details is in the [Chapter 6, Change History](#) below.

Released: Rev. SDP/MultiArch/2020.1/27325 (2021/01/29) - General Availability

Jobs Fixed since change 26494 up to 27325 (F=Feature, B=Bug):

- [SDP-245](#) (B): Prevent generation of db.* files in empty P4ROOT when sourcing [p4_vars](#).
- [SDP-246](#) (B): Sourcing [p4_vars](#) hangs if [live_checkpoint.sh](#) is running.
- [SDP-373](#) (B): Typo on page 22 of guide (Section 4.2): `modified` vs `modified`
- [SDP-397](#) (F): Support SDP hosts without [p4d](#), [p4p/p4broker](#) or [p4dtg](#) only.
- [SDP-428](#) (F): Add safety check to ensure systemd is used if required.
- [SDP-432](#) (F): Enhance distinction of what is Supported and Unsupported.
- [SDP-439](#) (B): DOC: SDP Guide for setting up a replica is missing key items.
- [SDP-460](#) (B): Script '[broker_rotate.sh](#)' is not mentioned in the SDP Guide (Unix).
- [SDP-461](#) (B): Script '[edge_dump.sh](#)' is not mentioned in the SDP Guide (Unix).
- [SDP-462](#) (B): Script '[edge_shelf_replicate.sh](#)' is not mentioned in the SDP Guide (Unix).

- [SDP-463](#) (B): Script 'edge_vars' is not mentioned in the SDP Guide (Unix).
- [SDP-464](#) (B): Script 'gen_default_broker_cfg.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-465](#) (B): Script 'htd_move_logs.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-466](#) (B): Script 'journal_watch.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-467](#) (B): Script 'kill_idle.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-468](#) (B): Script 'load_checkpoint.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-469](#) (B): Script 'mkrep.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-470](#) (B): Script 'p4broker_base' is not mentioned in the SDP Guide (Unix).
- [SDP-471](#) (B): Script 'p4dstate.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-472](#) (B): Script 'p4ftpd_base' is not mentioned in the SDP Guide (Unix).
- [SDP-473](#) (B): Script 'p4login-super.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-474](#) (B): Script 'p4p_base' is not mentioned in the SDP Guide (Unix).
- [SDP-475](#) (B): Script 'p4pcm.pl' is not mentioned in the SDP Guide (Unix).
- [SDP-476](#) (B): Script 'p4review2.py' is not mentioned in the SDP Guide (Unix).
- [SDP-477](#) (B): Script 'p4sanity_check.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-478](#) (B): Script 'p4web_base' is not mentioned in the SDP Guide (Unix).
- [SDP-481](#) (B): Script 'ps_functions.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-482](#) (B): Script 'purge_revisions.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-483](#) (B): Script 'recover_edge.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-484](#) (B): Script 'replica_cleanup.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-485](#) (B): Script 'replica_status.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-486](#) (B): Script 'request_replica_checkpoint.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-487](#) (B): Script 'rotate_journal.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-488](#) (B): Script 'template.pl' is not mentioned in the SDP Guide (Unix).
- [SDP-489](#) (B): Script 'template.py' is not mentioned in the SDP Guide (Unix).
- [SDP-490](#) (B): Script 'template.py.cfg' is not mentioned in the SDP Guide (Unix).
- [SDP-491](#) (B): Script 'template.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-492](#) (B): Script 'update_limits.py' is not mentioned in the SDP Guide (Unix).
- [SDP-493](#) (B): Script 'verify_sdp.sh' is not mentioned in the SDP Guide (Unix).
- [SDP-495](#) (B): SDP Guide mentions now-deleted/obsolete script.
- [SDP-496](#) (B): Script 'backup_functions.sh' is mentioned in the SDP Guide (Unix).
- [SDP-497](#) (B): Script 'p4d_base' is mentioned in the SDP Guide (Unix).
- [SDP-498](#) (B): Script 'p4verify.sh' is mentioned in the SDP Guide (Unix).
- [SDP-499](#) (B): Script 'run_if_edge.sh' is mentioned in the SDP Guide (Unix).
- [SDP-500](#) (B): Script 'run_if_master.sh' is mentioned in the SDP Guide (Unix).

- [SDP-501](#) (B): Script 'run_if_replica.sh' is mentioned in the SDP Guide (Unix).
- [SDP-502](#) (B): Script 'sync_replica.sh' is mentioned in the SDP Guide (Unix).
- [SDP-503](#) (B): SDP Guide mentions some scripts by most of the filename, not all of it.
- [SDP-504](#) (B): SDP Guide mentions "weekly_checkpoint" script under "daily_checkpoint":
- [SDP-505](#) (F): Added P4MASTERPORT checks to verify_sdp.sh
- [SDP-507](#) (B): p4d_1.service includes wrong doc link
- [SDP-508](#) (B): p4broker_1.service includes wrong doc link
- [SDP-509](#) (B): "sdp-administrator-guide.docx" needs to be removed or updated.
- [SDP-512](#) (B): upgrade.sh needs clearer documented explanation
- [SDP-523](#) (B): Missing 'failover' document
- [SDP-535](#) (B): False-positive on journal corruption check w/multi-line journal entries.
- [SDP-538](#) (F): Document systemd interactions with SDP init scripts.
- [SDP-541](#) (F): Make 'p4d' rather than 'p4d_N' safe to run.
- [SDP-543](#) (B): The configure_new_server.sh failed with unbound LOGFILE variable error.
- [SDP-545](#) (B): DOC: PDF contains "Reference source not found" errors.
- [SDP-546](#) (B): Documentation out of date.
- [SDP-548](#) (B): Standby won't start pull if journal.NNN exists.
- [SDP-554](#) (B): Incorrect Server ID when deploying an edge server.
- [SDP-553](#) (B): Remove 'Operating System' from configurable rejectList.
- [SDP-558](#) (B): Fix bug with '-recent' flag in p4verify.sh.
- [SDP-559](#) (B): Fix load_checkpoint.sh init issue if '-s <ServerID>' is used.
- [SDP-564](#) (F): Normalized SDP Versioning will start in the SDP r20.1 release.
- [SDP-565](#) (F): Enhance verify_sdp.sh to allow optional skip of some tests.
- [SDP-566](#) (F): Add Support-recommended sysctl settings to SDP.
- [SDP-567](#) (F): Add setting for server.extensions.dir.
- [SDP-569](#) (F): Rename upcoming /p4/sdp/exes to /p4/sdp/helix_binaries
- [SDP-572](#) (B): Fixed issue where No Checkpoints reported if 'find' doesn't support '-printf'.
- [SDP-573](#) (B): mkdirs.sh is not respecting MASTER_ID from config file
- [SDP-574](#) (B): daily_checkpoint.sh hangs if journalPrefix is wrong.
- [SDP-575](#) (B): The stop_p4d() function reports 'missing server.pid' error with systemd.
- [SDP-576](#) (F): Added documentation for handling multiple broker configs with systemd.
- [SDP-578](#) (B): The offline_db_usable.txt file is not updated when rotate_journal.sh is used.
- [SDP-579](#) (B): Edge recover script fails to run if p4_vars not sourced first.
- [SDP-581](#) (F): Added optional check that P4MASTER_ID starts with 'master' to verify_sdp.sh.
- [SDP-583](#) (E): Enhance verify_sdp.sh and upgrade.sh to handle proxy-only and broker-only

machines.

6.23. SDP 2019.3 Patch 7

Released: Rev. SDP/MultiArch/2019.3/26494 (2020/04/23).

Jobs Fixed since change 26478 up to 26494 (F=Feature, B=Bug):

- [SDP-529](#) (F): Add ability to limit specific commands to one-per-user, e.g. populate.
- [SDP-531](#) (B): The recover_edge.sh script needed updating to use new start/stop functions.

6.24. SDP 2019.3 Patch 6

Released: Rev. SDP/MultiArch/2019.3/26478 (2020/04/12).

Jobs Fixed since change 26472 up to 26478 (F=Feature, B=Bug):

- [SDP-527](#) (B): Patch to rotate_journal.sh and add test coverage for it.
- [SDP-528](#) (F): Enhance dynamic check to work with replicas that do not set journalPrefix.

6.25. SDP 2019.3 Patch 5

Released: Rev. SDP/MultiArch/2019.3/26472 (2020/04/10).

Jobs Fixed since change 26468 up to 26472 (F=Feature, B=Bug):

- [SDP-526](#) (F): Use dynamic journalPrefix detection for non-master servers.

6.26. SDP 2019.3 Patch 4

Released: Rev. SDP/MultiArch/2019.3/26468 (2020/04/10).

Jobs Fixed since change 26407 up to 26468 (F=Feature, B=Bug):

- [SDP-446](#) (B): wrong variables used in recreate_offline_db_files
- [SDP-519](#) (B): Fixed missing variable initialization in load_checkpoint.sh.
- [SDP-520](#) (F): Add login and trust logic to load_checkpoint.sh.
- [SDP-521](#) (F): Have load_checkpoint.sh handle P4SSLDIR and cert creation automatically.
- [SDP-522](#) (F): Have load_checkpoint.sh check for a license file.
- [SDP-524](#) (B): Fix refresh_P4ROOT_from_offline_db.sh to work on a non-edge replica.
- [SDP-525](#) (B): Remove parallel checkpoint scripts temporarily.

6.27. SDP 2019.3 Patch 3

Released: Rev. SDP/MultiArch/2019.3/26407 (2020/03/28).

Jobs Fixed since change 26400 up to 26407 (F=Feature, B=Bug):

- [SDP-427](#) (F): Use systemd consistently if available for p4d start/stop.

6.28. SDP 2019.3 Patch 2

Released: Rev. SDP/MultiArch/2019.3/26400 (2020/03/28).

Jobs Fixed since change 26239 up to 26400 (F=Feature, B=Bug):

- [SDP-427](#) (F): Use systemd consistently if available for p4d start/stop.
- [SDP-431](#) (F): Make p4d startup resistant to timing issues for reboots & fast
- [SDP-436](#) (F): Provide snapshot hook for daily_checkpoint.sh.
- [SDP-444](#) (F): Add script to safely refresh P4ROOT db.* from offline_db.
- [SDP-451](#) (F): Added '-f <P4TARGET>' flag to mkrep.sh.
- [SDP-452](#) (F): Enhance mkrep.sh to instruct using edge_dump.sh for edge servers.
- [SDP-453](#) (F): For filtered replicas, have mkrep.sh instruct using '-P ServerID'.
- [SDP-454](#) (B): verify_sdp.sh should handle being run as root
- [SDP-455](#) (F): Add license expiration check to verify_sdp.sh.
- [SDP-510](#) (B): Fix issue with 'clean start' test suite run due to Python symlink issues.

6.29. SDP 2019.3 Patch 1

Released: Rev. SDP/MultiArch/2019.3/26239 (2020/01/08).

Jobs Fixed since change 26159 up to 26239 (F=Feature, B=Bug):

- [SDP-423](#) (B): slight typo in comment /p4/INSTANCe/checkpoints
- [SDP-430](#) (B): Fixed typo causing os_tweaks.sh not to recognize Ubuntu 18.
- [SDP-437](#) (F): Enhance mkdirs.sh for standby replicas to match other replica types.
- [SDP-441](#) (B): Upgrade.ps1 fails with error for Windows SDP
- [SDP-443](#) (B): Fix in maint scripts to pickup SDP_INSTANCE if no arg passed.

6.30. SDP 2019.3 GA

Released: Rev. SDP/MultiArch/2019.3/26159 (2019/11/06).

Jobs Fixed since change 25949 up to 26159 (F=Feature, B=Bug):

- [SDP-448](#) (F): Enable 'p4 submit -b' by setting submit.allowbgtransfer=1 for P4D 2019.1.
- [SDP-352](#) (F): Eliminate excessive journal rotations on p4d startup.
- [SDP-412](#) (B): Backup failing as logs cannot be rotated as the server is too busy.

- [SDP-424](#) (B): sync_replica.sh fails on standby replica w/rpl.journalcopy.location=1.
- [SDP-425](#) (B): mkrep.sh fails for replica of replica due to ReplicatingFrom field hard coded to master.1
- [SDP-426](#) (F): Add -f flag to p4d -jr on SDP for Windows.

6.31. SDP 2019.2 Patch 3

Released: Rev. SDP/MultiArch/2019.2/25949 (2019/08/12).

Jobs Fixed since change 25938 up to 25949 (F=Feature, B=Bug):

- [SDP-415](#) (B): Fixed typo in scripts for handling edge servers.

6.32. SDP 2019.2 Patch 2

Released: Rev. SDP/MultiArch/2019.2/25938 (2019/08/05).

Jobs Fixed since change 25923 up to 25938 (F=Feature, B=Bug):

- [SDP-414](#) (B): Fixed issue with safety check in edge processing scripts.

6.33. SDP 2019.2 Patch 1

Released: Rev. SDP/MultiArch/2019.2/25923 (2019/08/05).

Jobs Fixed since change 25594 up to 25923 (F=Feature, B=Bug):

- [SDP-398](#) (F): Disallow replicas from being initially mandatory per P4D 2019.1 requirement.
- [SDP-400](#) (B): Fixed p4login bug where P4PORT value can have a value of Unset.
- [SDP-401](#) (F): Enhanced replica_status.sh to check archive replication.
- [SDP-403](#) (B): Fixed root-owned symlinks in /p4/N after running mkdirs.sh.
- [SDP-404](#) (F): Update edge scripts to support 2019.1+ changes to edge servers.
- [SDP-405](#) (F): Enhanced load_checkpoint.sh to handle case-insensitive checkpoints.
- [SDP-410](#) (B): [R]CMDEXITCODE not set when [r]run() called with 'grep string' parameter.
- [SDP-413](#) (F): Add script to request checkpoint on edge/replica.

6.34. SDP 2019.2 GA

Released: Rev. SDP/MultiArch/2019.2/25594 (2019/05/02).

Jobs Fixed since change 25480 up to 25594 (F=Feature, B=Bug):

- [SDP-356](#) (F): Reduce SDP Core to contain only software supported by Perforce Support.
- [SDP-369](#) (F): Added flags to p4verify.sh to verify by type like shelved.

- [SDP-374](#) (B): Fixed off-by-three-orders-of-magnitude error in proxy cleanup script.
- [SDP-378](#) (F): Removed journalPrefix as command line paramter during journal rotation, deferring to db.config values.
- [SDP-380](#) (F): Removed journalPrefix as command line paramter during journal rotation, deferring to db.config values.
- [SDP-383](#) (F): Added '-a' flag meant to be equivalent of most common set of flags.
- [SDP-384](#) (B): Fixed failure to cleanup old logs in sdp_sync.sh on Ubuntu Linux.
- [SDP-392](#) (B): upgrade.sh must handle new 19.1 features
- [SDP-393](#) (B): Fixed perms on purge_revisions.sh and journal_watch.sh.
- [SDP-394](#) (F): Added support for wildcards/globbering to purge_revisions.sh scripts.
- [SDP-395](#) (F): Added support for 2019.1 upgrades and testing of same.

6.35. SDP 2019.1 Patch 6

Released: Rev. SDP/MultiArch/2019.1/25480 (2019/04/11).

Jobs Fixed since change 25386 up to 25480 (F=Feature, B=Bug):

- [SDP-382](#) (B): Fixed missing 'exit 1' in p4d_base after 'p4d -xvU' check failure.
- [SDP-387](#) (F): Test harness should run verify_sdp.sh and look for errors.
- [SDP-390](#) (B): Removed crontab refs to deleted scripts.
- [SDP-391](#) (B): In mkdir.sh, fixed root ownership of generated crontab file.

6.36. SDP 2019.1 Patch 5

Released: Rev. SDP/MultiArch/2019.1/25386 (2019/03/21).

Jobs Fixed since change 25374 up to 25386 (F=Feature, B=Bug):

- [SDP-379](#) (B): Fixed makedirs.sh issue with SSL-enabled installs due to chown issue.

6.37. SDP 2019.1 Patch 4

Released: Rev. SDP/MultiArch/2019.1/25374 (2019/03/21).

Jobs Fixed since change 25320 up to 25374 (F=Feature, B=Bug):

- [SDP-302](#) (F): Parallelized checkpoint processing to reduce duration.
- [SDP-375](#) (B): Fix ownership and missing symlink issues in makedirs.sh.

6.38. SDP 2019.1 Patch 3

Released: Rev. SDP/MultiArch/2019.1/25320 (2019/03/08).

Jobs Fixed since change 25309 up to 25320 (F=Feature, B=Bug):

- [SDP-372](#) (B): Fixed breaking test - logic around \$CN was misunderstood.

6.39. SDP 2019.1 Patch 2

Released: Rev. SDP/MultiArch/2019.1/25309 (2019/03/07).

Jobs Fixed since change 25276 up to 25309 (F=Feature, B=Bug):

- [SDP-370](#) (B): Fix issue with mkdirs.sh -test mode.
- [SDP-371](#) (B): Fixed install_sdp_perl to work with updated P4Perl.

6.40. SDP 2019.1 Patch 1

Released: Rev. SDP/MultiArch/2019.1/25276 (2019/03/06).

Jobs Fixed since change 25238 up to 25276 (F=Feature, B=Bug):

- [SDP-368](#) (B): Fix syntax errors for SDP_ADMIN_PASSWORD_FILE in backup_functions.sh.

6.41. SDP 2019.1 GA

Released: Rev. SDP/MultiArch/2019.1/25238 (2019/03/02).

Jobs Fixed since change 23583 up to 25238 (F=Feature, B=Bug):

- [SDP-198](#) (B): DOC: SDP Guide needs more detail on SDP-controlled replica setup.
- [SDP-247](#) (B): Need a validation script to check current status, especially after an upgrade from older version of SDP.
- [SDP-255](#) (B): Update SDP documentation to deal with SSL enabled servers.
- [SDP-256](#) (B): Update documentation to include mkdirs.cfg instead of updating mkdirs.sh
- [SDP-269](#) (F): Optimize journalPrefix values for master, edge, standby, replica.
- [SDP-296](#) (B): Fixed bug where updates to os_tweaks.sh dropped support for RHEL 6.5.
- [SDP-297](#) (B): Fixed handling of unlaod depots in p4verify.sh
- [SDP-298](#) (B): Avoid checking for shelved files in spec depot.
- [SDP-299](#) (F): Enhanced HMS failover for standby/journalcopy replicas to use 'p4 admin end-journal'
- [SDP-300](#) (F): Set rpl.journalcopy.location=1 for p4d 2018.1+ servers.
- [SDP-301](#) (B): Crontab spamming emails if configurable track=1
- [SDP-304](#) (B): Fixed issues with hms status for SSL-enabled servers, etc.
- [SDP-305](#) (F): Enhancemnts in libcore.sh bail(), errmsg(), initlog(), and stoplog() functions.
- [SDP-306](#) (B): Moved cset of P4JOURNAL so it's done only on masteror edge server.

- [SDP-307](#) (F): Changed hms remote spec for the Public Depot to be the default 'origin'.
- [SDP-308](#) (F): Set rpl.journalcopy.location=1 for 2018.1+ standby replicas.
- [SDP-311](#) (B): Avoid unnecessary removal of rdb.lbr in db swap.
- [SDP-313](#) (F): Batch of validate_sdp.sh enhancements.
- [SDP-314](#) (B): Fixed scary but otherwise harmless error in Cmd.pm
- [SDP-315](#) (F): Reformat protections table comment format during upgrades.
- [SDP-316](#) (F): Added script to rotate live journal due low disk space
- [SDP-317](#) (B): Fixed issue preventing failover from an edge servder.
- [SDP-318](#) (B): Removed HMS references to /usr/local/bin/bash.
- [SDP-319](#) (F): Use 'p4 monitor terminate' rather than 'kill' for idle pids.
- [SDP-325](#) (F): Enhanced rejectList setting for P4EXP.
- [SDP-326](#) (F): Enhanced rejectList setting for P4EXP.
- [SDP-327](#) (B): DOC: must I create /hx*?
- [SDP-328](#) (B): DOC: mismatch between setup instructions and setup script
- [SDP-329](#) (B): DOC: folder permissions
- [SDP-330](#) (B): DOC: to where should we copy the tgz file?
- [SDP-331](#) (B): DOC: lack of clarity on folder ownership.
- [SDP-332](#) (B): DOC: setting executable bit on p4 etc.
- [SDP-333](#) (B): DOC: reorder the create user/group sequence on Linux.
- [SDP-334](#) (B): DOC: no comment on mkdirs.N.cfg, referenced in the mkdirs.sh script.
- [SDP-335](#) (B): DOC: no comment on ssl certificate generation.
- [SDP-337](#) (B): The upgrade.sh script, used to update your p4/p4d executables and corresponding database, starts with the message:
- [SDP-338](#) (F): DOC: server upgrades and checkpoint
- [SDP-339](#) (B): DOC: non-existent script referenced in docs
- [SDP-341](#) (B): Critical recreate_db_checkpoint.sh bug with shared /hxdepots shared.
- [SDP-342](#) (B): Fixed issue with P4Triggers.py impacting CheckCaseTrigger.py, etc.
- [SDP-345](#) (B): Implemented '-r' flag to clean up old logs in global_replica_status.sh.
- [SDP-347](#) (F): Enhance CaseCheckTrigger to work even if defaultChangeType is set to restricted.
- [SDP-348](#) (F): Enhanced CheckCaseTrigger.py to enable bypass.
- [SDP-350](#) (F): Support SELinux ("Security Enhanced Linux") in enforcing mode.
- [SDP-353](#) (F): Avoid doing 'p4d -cset' for P4JOURNAL, but preserve safety feature.
- [SDP-362](#) (B): p4verify.sh -remote ignores SDP_RECENT_CHANGES_TO_VERIFY.
- [SDP-366](#) (F): Optimize display of Support messaging.
- [SDP-367](#) (B): p4verify.sh should also specify the -t (transfer) option for edge servers like it

currently does for replicas.

- [SDP-49](#) (B): SDP Guide: inconsistent user name used in setup instructions. Page 9 of the pdf, step 1 says create user 'p4admin'. The rest of the guide that I've read, and the mkdirs.sh script, all refer to user 'perforce'.
- [SDP-73](#) (F): Add Evil Twin detector/prevention trigger.

6.42. SDP 2018 Patch 2

Released: Rev. SDP/MultiArch/2018.1/23583.p2 (2019/01/23).

Jobs Fixed since change 23583.p1 up to 23583.p2 (F=Feature, B=Bug): * [SDP-366](#) (F): Optimize display of Support messaging. * [SDP-341](#) (B): Critical recreate_db_sync_replica.sh bug with shared /hxdepots shared.

6.43. SDP 2018.1 Patch 1

Released: Rev. SDP/MultiArch/2018.1/23583.p1 (2018/07/13).

PATCH release fixes * [SDP-341](#). * [SDP-341](#) (B): Critical recreate_db_checkpoint.sh bug with shared /hxdepots shared.

6.44. SDP 2018.1 Patch 0.5

Released: Rev. SDP/MultiArch/2018.1/23583 (2018/02/08).

Jobs Fixed since change 23504 up to 23583 (F=Feature, B=Bug):

- [SDP-287](#) (B): Fixed mkdirs.sh bug fixing ownership of wrong dir. 2nd fx for * [SDP-287](#).

6.45. SDP 2018.1 GA

Released: Rev. SDP/MultiArch/2018.1/23504 (2018/01/19).

Jobs Fixed since change 23354 up to 23504 (F=Feature, B=Bug):

- [SDP-285](#) (B): The use of "tee" in p4d_base causes start to hang on some systems with 2016.2 p4d
- [SDP-286](#) (B): Fixed: In configure_new_server.*, super user not logged in after restart.
- [SDP-287](#) (B): Fixed mkdirs.sh bug fixing ownership of wrong dir.
- [SDP-290](#) (F): Added SDP-standard Ruby to PATH.
- [SDP-291](#) (F): Added workflow support triggers.
- [SDP-292](#) (F): Enhancements to p4dstate.sh.

6.46. SDP 2017.4 Patch 1

Released: Rev. SDP/MultiArch/2017.4/23354 (2017/12/08).

Jobs Fixed since change 23329 up to 23354 (F=Feature, B=Bug):

- [SDP-281](#) (B): Fixed journalPrefix logic in mkdirs.sh

6.47. SDP 2017.4 GA

Released: Rev. SDP/MultiArch/2017.4/23329 (2017/12/05).

Jobs Fixed since change 23041 up to 23329 (F=Feature, B=Bug):

- [SDP-265](#) (B): sync_replica.sh and recreate_db_sync_replica.sh should avoid rsync compression
- [SDP-266](#) (B): Fixed logging issue with sync_replica.sh and recreate_db_sync_replica.sh.
- [SDP-267](#) (B): Fixed issue detecting an edge server; wrong EDGESERVER value.
- [SDP-268](#) (F): Added basic comments to all functions in backup_functions.sh.
- [SDP-269](#) (F): Optimize journalPrefix values for master, edge, standby, replica.
- [SDP-270](#) (F): Added trigger script to create Swarm reviews (and unit test).
- [SDP-271](#) (F): Refactor to push common arg_parse into P4Triggers.
- [SDP-272](#) (F): Enhance p4login info in error output, added -d debug flag.
- [SDP-273](#) (F): New RequireJob pre-submit trigger.
- [SDP-274](#) (F): Added trigger to validate contents YAML files.
- [SDP-276](#) (B): Make mkrep.sh work when /p4/hms instance does not exist.
- [SDP-277](#) (F): Added license time remaining check script.
- [SDP-278](#) (F): Enhance upgrade.sh run on machines with only broker/proxy.
- [SDP-279](#) (F): Added filetype.bypasslock=1 configurable, recommended for Swarm.
- [SDP-280](#) (F): Updated Support coverage info and enhanced other info in SDP README file.

6.48. SDP 2017.3 Patch 1

Released: Rev. SDP/MultiArch/2017.3/23041 (2017/10/24).

Jobs Fixed since change 23003 up to 23041 (F=Feature, B=Bug):

- [SDP-143](#) (F): Enhance init scripts to display usage with no args.
- [SDP-259](#) (B): Fixed logging issue in upgrade.sh - p4broker/p4p start/stop not captured.
- [SDP-260](#) (F): Simplified stop_p4d() in backup function due to logic now in p4d_base.
- [SDP-261](#) (B): Fixed minor issue message about rotating journal escaping log capture.
- [SDP-262](#) (F): Take advantage of '--daemonsafe' arg in P4D 2017.1.
- [SDP-263](#) (B): Fixed login count in p4login script.

6.49. SDP 2017.3 GA

Released: Rev. SDP/MultiArch/2017.3/23003 (2017/10/19).

Jobs Fixed since change 22201 up to 23003 (F=Feature, B=Bug):

- [SDP-223](#) (B): Fix EDGESERVER check in p4d_base regression.
- [SDP-224](#) (B): Fix os_tweaks.sh to work on RHEL/CentOS 6.9.
- [SDP-225](#) (B): Updated hms_ts_setup.sh to adapt to makedirs.cfg changes.
- [SDP-226](#) (B): Fixed typo in variable name in libcore.sh.
- [SDP-227](#) (B): install_sdp_perl.sh: Added DVCS environment isolation safety feature.
- [SDP-228](#) (F): install_sdp_perl.sh: Now uses r17.1 API.
- [SDP-232](#) (F): Re-establish autologinprompt default behavior.
- [SDP-233](#) (B): Fix bug in sdp_sync.sh related to args passed to rrun function.
- [SDP-234](#) (B): Change Unix default server.id to be unique to support remote depots
- [SDP-236](#) (B): Avoid issues interacting with incompatible local Perl.
- [SDP-237](#) (B): Scripts using libcore.sh display a harmless but scary error after all processing completes.
- [SDP-239](#) (F): Renamed crontab templates files to be template.job.p4s rather than *.template.
- [SDP-240](#) (B): Fixed cosmetic logging bug affecting several scripts.
- [SDP-241](#) (B): Update systemd templates to add new wait targets.
- [SDP-242](#) (B): Corrected filetypes on some scripts to chmod +x.
- [SDP-248](#) (F): Provide an override for diff between proxy listen and target ports.
- [SDP-249](#) (F): Extended P4IGNORE for more Mac files.
- [SDP-250](#) (F): Add value for db.monitor.shared configurable.
- [SDP-251](#) (F): Tweaked versions for which net.tcpsize=0 is set.
- [SDP-252](#) (B): SetWsOptionsAndView.py trigger should exit 0 when p4 client used w/ -t <template>.
- [SDP-253](#) (F): Various Windows SDP enhancements.
- [SDP-254](#) (F): Added SDP Overview slide preso to SDP.

6.50. SDP 2017.2 Patch 1

Released: Rev. SDP/MultiArch/2017.2/22201 (2017/05/18).

Jobs Fixed since change 22177 up to 22201 (F=Feature, B=Bug):

- [SDP-222](#) (B): Fixed issue with testing makedirs.sh on Mac.

6.51. SDP 2017.2 GA

Released: Rev. SDP/MultiArch/2017.2/22177 (2017/05/17).

Jobs Fixed since change 21808 up to 22177 (F=Feature, B=Bug):

- [SDP-153](#) (B): Maintenance script `unload_clients_with_delete.py` needs to ignore swarm workspaces to avoid losing data.
- [SDP-195](#) (F): Added new configurable setting: `'fileys.bufsize=1M'`.
- [SDP-196](#) (B): Fixed bug in `unload_labels.py`, weeks passed in as days.
- [SDP-197](#) (B): Fixed bug in Windows Powershell `p4verify.ps1` script.
- [SDP-200](#) (B): Fixed issue with `/tmp` getting polluted with temp files.
- [SDP-201](#) (F): Various scripts favor more scalable `run()/rrun()` over
- [SDP-202](#) (F): HMS scripts normalize to `/bin/bash`, check `BASH_VERSION`
- [SDP-203](#) (F): Added new `JobIncrement` trigger to simplify custom job name usage.
- [SDP-210](#) (F): Enhanced `P4DTG` init script reliability.
- [SDP-215](#) (F): Added new configurable setting: `'dm.user.loginattempts=7'`.
- [SDP-216](#) (F): Refactored `mkdirs.sh` extracting user-config into `mkdirs.cfg`.
- [SDP-219](#) (B): Corrected logic on skipping the swarm user in `remove_empty_pending_changes.py`
- [SDP-220](#) (F): Added triggers using alternative file transfer for `submit/pull`.
- [SDP-221](#) (F): Enhanced to rotate `p4verify.log` like other logs.

6.52. SDP 2017.1 Patch 1

Released: Rev. SDP/MultiArch/2017.1/21808 (2017/03/08).

Jobs Fixed since change 21720 up to 21808 (F=Feature, B=Bug):

- [SDP-191](#) (B): Fixed default thresholds values in proxy cache cleaner.
- [SDP-192](#) (B): User deletion maint script handles usernames with backslash.
- [SDP-193](#) (F): Enhance proxy init script to incorporate monitoring, adding default value in `p4_vars`.

6.53. SDP 2017.1 GA

Released: Rev. SDP/MultiArch/2017.1/21720 (2017/02/17).

Jobs Fixed since change 21528 up to 21720 (F=Feature, B=Bug):

- [SDP-179](#) (F): Enhanced `install_sdp_perl.sh` to build with `P4Perl` from The Workshop
- [SDP-181](#) (B): Fixed issue keeping `recreate_db_sync_replca.sh` from fixing a replica out-of-sync issue.

- [SDP-182](#) (F): Enhanced and updated `install_sdp_perl.sh`
- [SDP-183](#) (B): In `recreate_db_sync_replica.sh`, ensure `P4ROOT` and `OFFLINE_DB` are cleaned.
- [SDP-184](#) (B): Fixed bug resulting in error sending email on Ubuntu.
- [SDP-185](#) (F): Added PowerShell script `p4verify.ps1` to verify on Windows.
- [SDP-186](#) (F): Simplified Windows setup with batch wrappers to PowerShell scripts.
- [SDP-187](#) (F): General Unix doc enhancements.
- [SDP-188](#) (F): Enhanced Perl library modules. [SDP0190](#) (B): Fixed hms failover bug targeting wrong host with multiple possible targets.

6.54. SDP 2016.2 Patch 17

Released: Rev. SDP/MultiArch/2016.2/21528 (2017/01/14).

Jobs Fixed since change 21489 up to 21528 (F=Feature, B=Bug):

- [SDP-160](#) (F): Enhanced `P4Triggers.py` to print exceptions encountered.
- [SDP-175](#) (F): Added more exclusions to `/p4/.pignore`.
- [SDP-176](#) (B): Fixed issues with `hms_ts_setup.sh`.
- [SDP-177](#) (B): Backed out clever `tempdir` feature that negatively impacted portability.

6.55. SDP 2016.2 Patch 16

Released: Rev. SDP/MultiArch/2016.2/21489 (2017/01/11).

Jobs Fixed since change 21480 up to 21489 (F=Feature, B=Bug):

- [SDP-174](#) (B): Added Suffix field to spec depot in new servers.

6.56. SDP 2016.2 Patch 15

Released: Rev. SDP/MultiArch/2016.2/21480 (2017/01/11).

Jobs Fixed since change 21379 up to 21480 (F=Feature, B=Bug):

- [SDP-167](#) (F): Added `server.start.licensed` configurable.
- [SDP-168](#) (F): Work around RHEL/CentOS 7 command completion issue.
- [SDP-169](#) (B): Fixed `install_sdp_python.sh` issue with building P4Python for SSL-enabled server.
- [SDP-170](#) (F): Added script to lowercase a directory tree.
- [SDP-171](#) (F): Added SSL support in `hms_ts_setup.sh`.
- [SDP-172](#) (B): Fixed bug in `upgrade.sh` introduced when truncate journal was changed to use `p4 admin` journal.
- [SDP-173](#) (F): Enhanced SSL support in `install_sdp_python.sh` to account for varied OpenSSL

installations.

6.57. SDP 2016.2 Patch 14

Released: Rev. SDP/MultiArch/2016.2/21379 (2016/12/20).

Jobs Fixed since change 21328 up to 21379 (F=Feature, B=Bug):

- [SDP-165](#) (F): Simplified SSL autogen cert generation.
- [SDP-166](#) (B): Re-login after setting auth.id, restart at end of script.

6.58. SDP 2016.2 Patch 13

Released: Rev. SDP/MultiArch/2016.2/21328 (2016/12/16).

Jobs Fixed since change 21239 up to 21328 (F=Feature, B=Bug):

- [SDP-157](#) (F): Added sample /Users/perforce/.mailrc.
- [SDP-158](#) (F): SDP-ified log, moving p4triggers.log to \${LOGS}.
- [SDP-159](#) (F): Updated to hms tight ship setup script, still WIP.
- [SDP-161](#) (F): Added script to lowercase a dir tree.
- [SDP-162](#) (F): Added initial HMS tight ship script.
- [SDP-163](#) (F): Standardized doc format to docx.
- [SDP-164](#) (F): Enhanced to support enterprise environments with two metadata volumes.

6.59. SDP 2016.2 Patch 12

Released: Rev. SDP/MultiArch/2016.2/21239 (2016/12/06).

Jobs Fixed since change 21193 up to 21239 (F=Feature, B=Bug):

- [SDP-154](#) (F): Enable auth.id for P4D 2016.1+ servers.
- [SDP-155](#) (F): Suppress known-harmless errors in p4verify.sh.
- [SDP-156](#) (F): Enhance install_sdp_p* scripts to remove hard-coded dependency on an instance 1.

6.60. SDP 2016.2 Patch 11

Released: Rev. SDP/MultiArch/2016.2/21193 (2016/12/2).

- [SDP-138](#) (F): Take advantage of new 2016.2 configurables.
- [SDP-147](#) (F): Add CentOS 7 support to os_tweaks.sh
- [SDP-148](#) (F): Update SDP Python/Perl install to use 'http:' rather than 'ftp:' in URLs.
- [SDP-150](#) (B): Correct cp path for ssl dir.

- [SDP-151](#) (F): Enhance Windows SDP install to server.depot.root.
- [SDP-152](#) (F): Enhance to support 2 volumes for root/offline_db.

6.61. SDP 2016.2 Patch 10

Released: Rev. SDP/MultiArch/2016.2/21123 (2016/11/22).

Jobs Fixed since change 21103 up to 21123 (F=Feature, B=Bug):

- [SDP-149](#) (B): Fix shebang line for case check trigger.
- [SDP-150](#) (B): Correct cp path for ssl dir.

6.62. SDP 2016.2 Patch 9

Released: Rev. SDP/MultiArch/2016.2/21103 (2016/11/21).

Jobs Fixed since change 21101 up to 21103 (F=Feature, B=Bug):

- [SDP-146](#) (F): Added doc-only hms setup scripts.

6.63. SDP 2016.2 Patch 8

Released: Rev. SDP/MultiArch/2016.2/21101 (2016/11/21).

Jobs Fixed since change 21033 up to 21101 (F=Feature, B=Bug):

- [SDP-144](#) (F): Add CheckCaseTrigger.p to the SDP.
- [SDP-145](#) (F): Various doc update for hms and failover.

6.64. SDP 2016.2 Patch 7

Released: Rev. SDP/MultiArch/2016.2/21033 (2016/11/10).

Jobs Fixed since change 20995 up to 21033 (F=Feature, B=Bug):

- [SDP-139](#) (B): mkrep.sh: Add missing journalcopy to standby replicas.
- [SDP-140](#) (B): hms: Fixed issues with script hang on local failover.
- [SDP-141](#) (F): hms: Replaced hard-coded master ServerID value with configured value.
- [SDP-142](#) (B): Fix p4verify.sh bug when -recent flag is used.

6.65. SDP 2016.2 Patch 6

Released: Rev. SDP/MultiArch/2016.2/20995 (2016/11/07).

Jobs Fixed since change 20972 up to 20995 (F=Feature, B=Bug):

- [SDP-134](#) (B): p4verify.sh is currently broken - use of an unbounded variable (\$d); use of the -recent option fails as for verify -S you cannot specify a range (only @= is supported) ; stripping out archive,unload+remote depots also not working. get_verofy_rev_range used depot name incorrectly in changes
- [SDP-136](#) (B): Tweaked maint scripts to handle oddly named groups.
- [SDP-137](#) (F): Added new CN setting for /p4/common to test folder paths.

6.66. SDP 2016.2 Patch 5

Released: Rev. SDP/MultiArch/2016.2/20972 (2016/11/01).

Jobs Fixed since change 20856 up to 20970 (F=Feature, B=Bug):

- [SDP-120](#) (F): Add -recent flag to p4verify.sh to verify recent changes.
- [SDP-126](#) (B): p4login.*.log files are not being cleaned up by the standard clean-up mechanism (remove_old_logs in backup_function.sh).
- [SDP-127](#) (F): Allow for multiple depot volumes.
- [SDP-128](#) (B): Fixed missing LOGFILE variable issue in p4verify.sh.
- [SDP-129](#) (B): Fix formatting of logs to use simple HTML line breaks for Windows SDP.
- [SDP-130](#) (B): Various test suite improvements.
- [SDP-131](#) (B): fixed issue with broken def'n of P4PORT with multiple SSL prefixes.
- [SDP-132](#) (F): Enhanced two-factor auth mechanisms.
- [SDP-133](#) (F): Tweak to slightly reduce mkdirs.sh configuration.

6.67. SDP 2016.2 Patch 4

Released: Rev. SDP/MultiArch/2016.2/20856 (2016/10/04).

Jobs Fixed since change 20805 up to 20856 (F=Feature, B=Bug):

- [SDP-121](#) (F): Enhanced logic to favor init scripts in /p4/N/bin over /etc/init.d.
- [SDP-122](#) (B): Fixed quoting bug in p4login.
- [SDP-123](#) (F): hms checks for cfg files in /p4/common/config.
- [SDP-124](#) (B): Fixed hms bug re: wrong master host discovered in failback testing

6.68. SDP 2016.2 Patch 3

Released: Rev. SDP/MultiArch/2016.2/20805 (2016/10/02).

Jobs Fixed since change 20790 up to 20805 (F=Feature, B=Bug):

- [SDP-116](#) (B): Fixed ssh hang issues with hms scripts.
- [SDP-117](#) (F): Implemented global/central start stop.

- [SDP-118](#) (F): mkrep.sh: Added more replica types and journalcopy support.
- [SDP-119](#) (F): Implement checkauth feature in HMS broker_wrapper.

6.69. SDP 2016.2 Patch 2

Released: Rev. SDP/MultiArch/2016.2/20790 (2016/09/30).

Jobs Fixed since change 20755 up to 20790 (F=Feature, B=Bug):

- [SDP-112](#) (B): Minor p4 login fix to show P4TICKETS output reliably.
- [SDP-113](#) (B): Fix mkrep.sh to use \$P4BIN instead of p4.
- [SDP-114](#) (F): Added basic p4login-super.sh script.
- [SDP-115](#) (B): Added hms dir to makedirs.sh.

6.70. SDP 2016.2 Patch 1

Released: Rev. SDP/MultiArch/2016.2/20755 (2016/09/29).

Jobs Fixed since change 20559 up to 20755 (F=Feature, B=Bug):

- [SDP-64](#) (F): Add option to install_sdp_python.sh to build P4Python with SSL.
- [SDP-103](#) (B): Fix attempted login count in p4login.
- [SDP-104](#) (B): Fixed order-of-operations issue that caused some log files to be lost on rotation.
- [SDP-105](#) (B): Cosmetic fix to broker init script with 'status all' run w/no config files.
- [SDP-106](#) (F): Add Helix Management System (HMS) files to SDP.
- [SDP-107](#) (F): Enhance p4login to avoid hang issue with auth.id set.
- [SDP-108](#) (F): Further test suite docker environment updates.
- [SDP-109](#) (F): Add Two Factor Authentication sample auth script.
- [SDP-110](#) (B): Correct crontab to run sync_replica.sh every day.
- [SDP-111](#) (B): Fix bugs in convert_label_to_autoreload.py.

Jobs Fixed since change 20491 up to 20559 (F=Feature, B=Bug):

- [SDP-100](#) (B): Fix recent regression with 'restart' option in init scripts.

6.71. SDP 2016.2 GA

Released: Rev. SDP/MultiArch/2016.1/20491 (2016/09/09).

Jobs Fixed since change 20460 up to 20491 (F=Feature, B=Bug):

- [SDP-99](#) (B): Fix special case env insulation bug running init scripts as root.

6.72. SDP 2016.1 Patch 13

Released: Rev. SDP/MultiArch/2016.1/20460 (2016/09/08).

Jobs Fixed since change 20395 up to 20460 (F=Feature, B=Bug):

- [SDP-94](#) (B): Fixed a typo inserted in mkdirs.sh.
- [SDP-98](#) (B): chmod +x fix on some scripts.

6.73. SDP 2016.1 Patch 12

Released: Rev. SDP/MultiArch/2016.1/20395 (2016/09/04).

Jobs Fixed between changelists 20387 and 20395 (F=Feature, B=Bug):

- [SDP-94](#) (B): Fixed a typo inserted in mkdirs.sh.

6.74. SDP 2016.1 Patch 11

Released: Rev. SDP/MultiArch/2016.1/20387 (2016/09/04).

Jobs Fixed between changelists 20348 and 20387 (F=Feature, B=Bug):

- [SDP-89](#) (B): Fixed several issues in email.sh maint script.
- [SDP-92](#) (B): Fixed using with runRemoteCmd getting error if USER not defined in non-core SDP script.
- [SDP-93](#) (B): Removed references to legacy names for checkpoint scripts (non-functional change).

6.75. SDP 2016.1 Patch 10

Released: Rev. SDP/MultiArch/2016.1/20348 (2016/09/02).

Jobs Fixed between changelists 20028 and 20348 (F=Feature, B=Bug):

- [SDP-64](#) (F): Add option to install_sdp_python.sh to build P4Python with SSL.
- [SDP-74](#) (F): Add p4sanity_check.sh script from Battle School.
- [SDP-75](#) (B): Fix missing echo of command into log file in p4verify.sh.
- [SDP-77](#) (F): Change adminspass to use hidden, and now instance-specific, password files
- [SDP-78](#) (F): Add mkrep script to simplify replica creation.
- [SDP-79](#) (F): Update p4verify.sh to verify shelves on master/replicas.
- [SDP-80](#) (F): Add script to convert labels to autoreload.
- [SDP-81](#) (F): Add Evil Twin Detector maintenance script.
- [SDP-85](#) (F): Add script to simplify adoption of OS-level best practices recommended by Support.
- [SDP-97](#) (B): Eliminate syntax error if user forgets start/stop/status arg; just display status.

- [SDP-88](#) (F): Use pid to shutdown p4d rather than 'p4 admin stop' to enhance reliability.

6.76. SDP 2016.1 Patch 9

Released: Rev. SDP/MultiArch/2016.1/20028 (2016/08/03).

Jobs Fixed between changelists 19888 and 20028 (F=Feature, B=Bug):

- [SDP-67](#) (F): Defend against environment hijacking of P4ENVIRO.
- [SDP-72](#) (F): Revive external auth LDAP group mirror scripts.
- [SDP-69](#) (B): sdp_sync.sh v2.1.7: Fixed environment bug (missing defs), HMS support.
- [SDP-70](#) (F): Simplify login ticket handling for sophisticated topologies.
- [SDP-71](#) (F): Prevent cross-instance contamination if p4_vars is loaded multiple times.

6.77. SDP 2016.1 Patch 8

Released: Rev. SDP/MultiArch/2016.1/19888 (2016/07/07).

Jobs Fixed between changelists 19838 and 19888 (F=Feature, B=Bug):

- [SDP-6](#) (B): SDP trigger breaks with Streams workspaces in P4V.
- [SDP-66](#) (B): Daily/weekly_backup can fail leaving lock file present requiring manual intervention
- [SDP-67](#) (F): Defend against environment hijacking of P4ENVIRO.

6.78. SDP 2016.1 Patch 7

Released: Rev. SDP/MultiArch/2016.1/19838 (2016/06/26).

Jobs Fixed between changelists 19768 and 19838 (F=Feature, B=Bug):

- [SDP-6](#) (B): SDP triggers break with Streams workspaces in P4V.
- [SDP-65](#) (F): Add defense against known-misbehaving client versions.

6.79. SDP 2016.1 Patch 6

Released: Rev. SDP/MultiArch/2016.1/19768 (2016/06/24).

Jobs Fixed between changelists 19661 and 19768 (F=Feature, B=Bug):

- [SDP-62](#) (F): Change to best-practice configurables; auth.autologinprompt=0.
- [SDP-63](#) (B): p4master_run operates incorrectly as root.

6.80. SDP 2016.1 Patch 5

Released: Rev. SDP/MultiArch/2016.1/19661 (2016/06/08).

Jobs Fixed between changelists 19410 and 19661 (F=Feature, B=Bug):

- [SDP-59](#) (F): Add KEEPJNLS to allow keeping more jnls than ckps.
- [SDP-60](#) (F): Rename replica scripts to be consistent with earlier rename of checkpoint scripts.
- [SDP-61](#) (F): Enhance error checkong and logging replica handling scripts.
- [SDP-62](#) (F): Change to best-practice configurables; auth.autologinprompt=0.

6.81. SDP 2016.1 Patch 4

Released: SDP/MultiArch/2016.1/19410 (2016/05/17).

Jobs Fixed between changelists 18958 and 19410:

- [SDP-50](#): Work with license check in P4D 2016.1.
- [SDP-51](#): Change p4verify.sh to use -S to verify shelves on a replica instead
- [SDP-52](#): Removed the HOST_IP settings from mkdirs and instance_vars since it
- [SDP-53](#): Dockerify SDP test suite.
- [SDP-54](#): Add replica cleanup script on Windows.
- [SDP-55](#): Get p4verify.sh to check SHAREDATA on replicas.
- [SDP-56](#): Avoid chmod on a replica if it shares data with the master.
- [SDP-57](#): Use 'p4 admin journal' on master to rotate journal.

6.82. SDP 2016.1 Patch 3

Released: SDP/MultiArch/2016.1/18958 (2016/04/08).

Jobs Fixed between changelists 18619 and 18958:

- [SDP-39](#): Proxy status init script can show proxy is up when it is not.
- [SDP-41](#): Moved ckp_running.txt to LOGS dir.
- [SDP-42](#): Fix missing LOGFILE= in replica_cleanup.sh.
- [SDP-43](#): De-emphasized changeType=restricted.
- [SDP-44](#): Update Perl/P4Perl Python/P4Python
- [SDP-45](#): Support multiple broker configs.
- [SDP-46](#): Enhanced p4_vars.template to support non-p4d hosts.
- [SDP-47](#): SDP-ify P4DTG init script.
- [SDP-48](#): Enhanced p4deleteuser.py to check for shelves, double-deletes.

6.83. SDP 2016.1 Patch 2

Released: SDP/MultiArch/2016.1/18619 (2016/03/10).

Jobs Fixed between changelists 17297 and 18619:

- [SDP-30](#) on 2015/12/15 by ttyler **closed** 'Enhanced offline_db 'stale data'

6.84. SDP 2016.1 Patch 1

Released: SDP/MultiArch/2016.1/17297 (2016/02/03).

Jobs Fixed between changelists 16784 and 17297:

- [SDP-32](#): Support \$MAILTO values with '#' char in gen_default_broker_cfg.sh.
- [SDP-34](#): sdp_sync.sh: Fix 'null crontab' bug.
- [SDP-35](#): p4d_base: When stopping p4d, send stderr to /dev/null.
- [SDP-36](#): global_replica_status.sh: Support instance-specific host config.
- [SDP-37](#): Support email addresses starting with '#'.

6.85. SDP 2016.1 GA

Released: SDP/MultiArch/2016.1/16784 (2016/01/12).

Jobs Fixed recently:

- [SDP-31](#): Add documentation for sdp_sync.sh to SDP Guide.
- [SDP-32](#): Support \$MAILTO values with '#' char in gen_default_broker_cfg.sh.