

PROCESS FOR DEVELOPMENT AND TESTING IN SPDK COMMUNITY

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Agenda

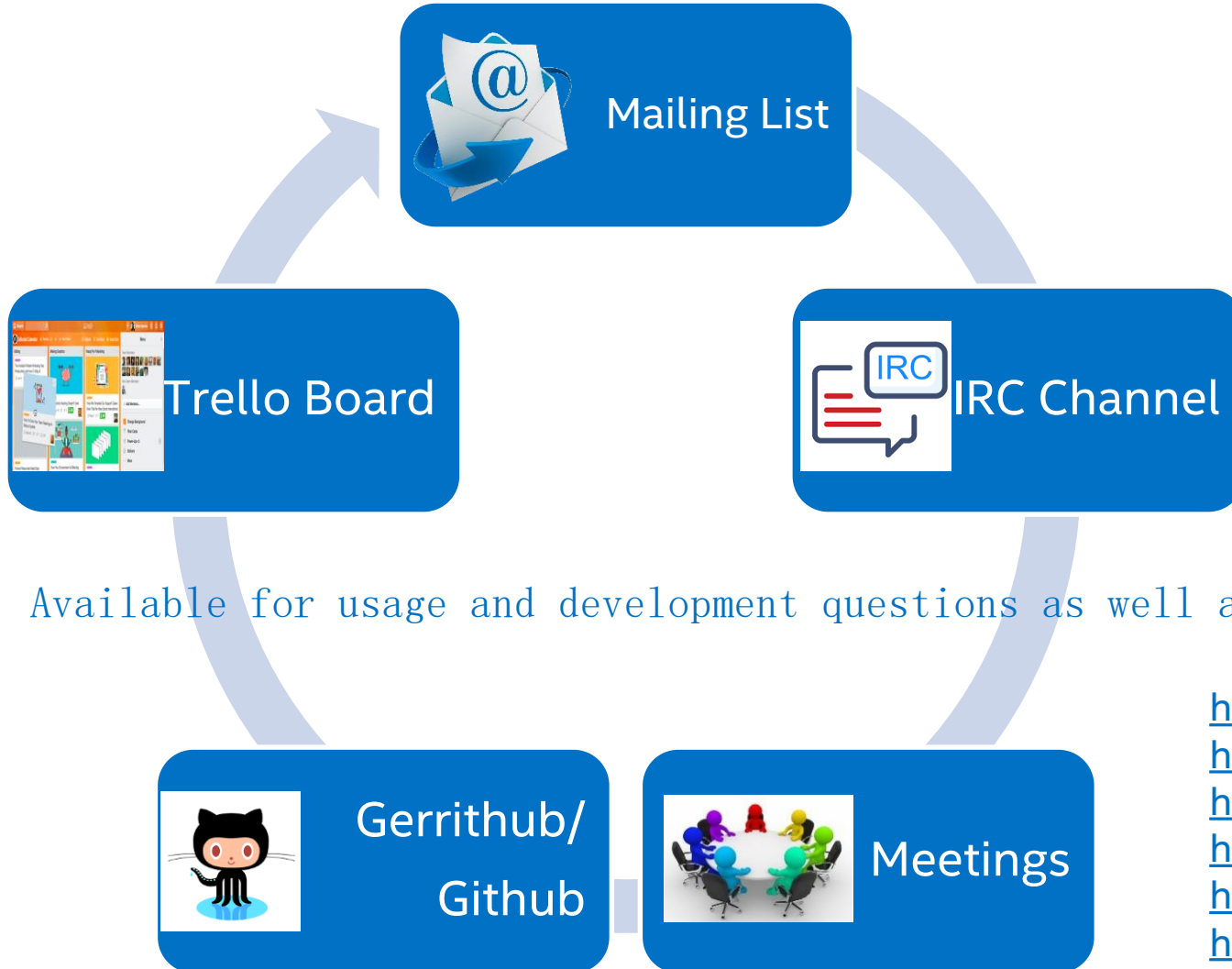
- SPDK Community Engagement 101
- Working in SPDK Community
- RPC adoption in SPDK – NVMMF Instance
- Debug with CI tools



<http://www.spdk.io/>

SPDK Community Engagement 101

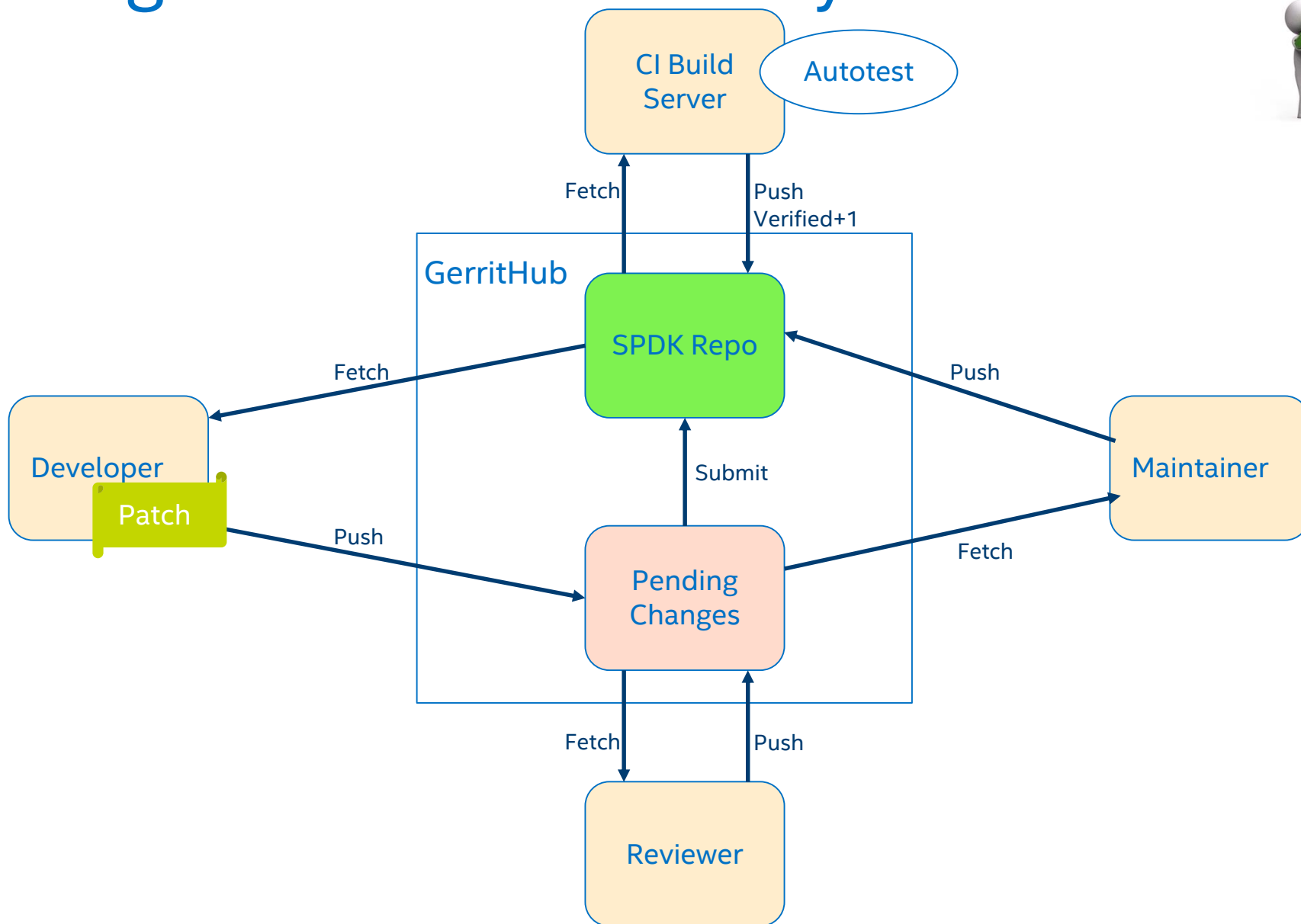
- Get Involved



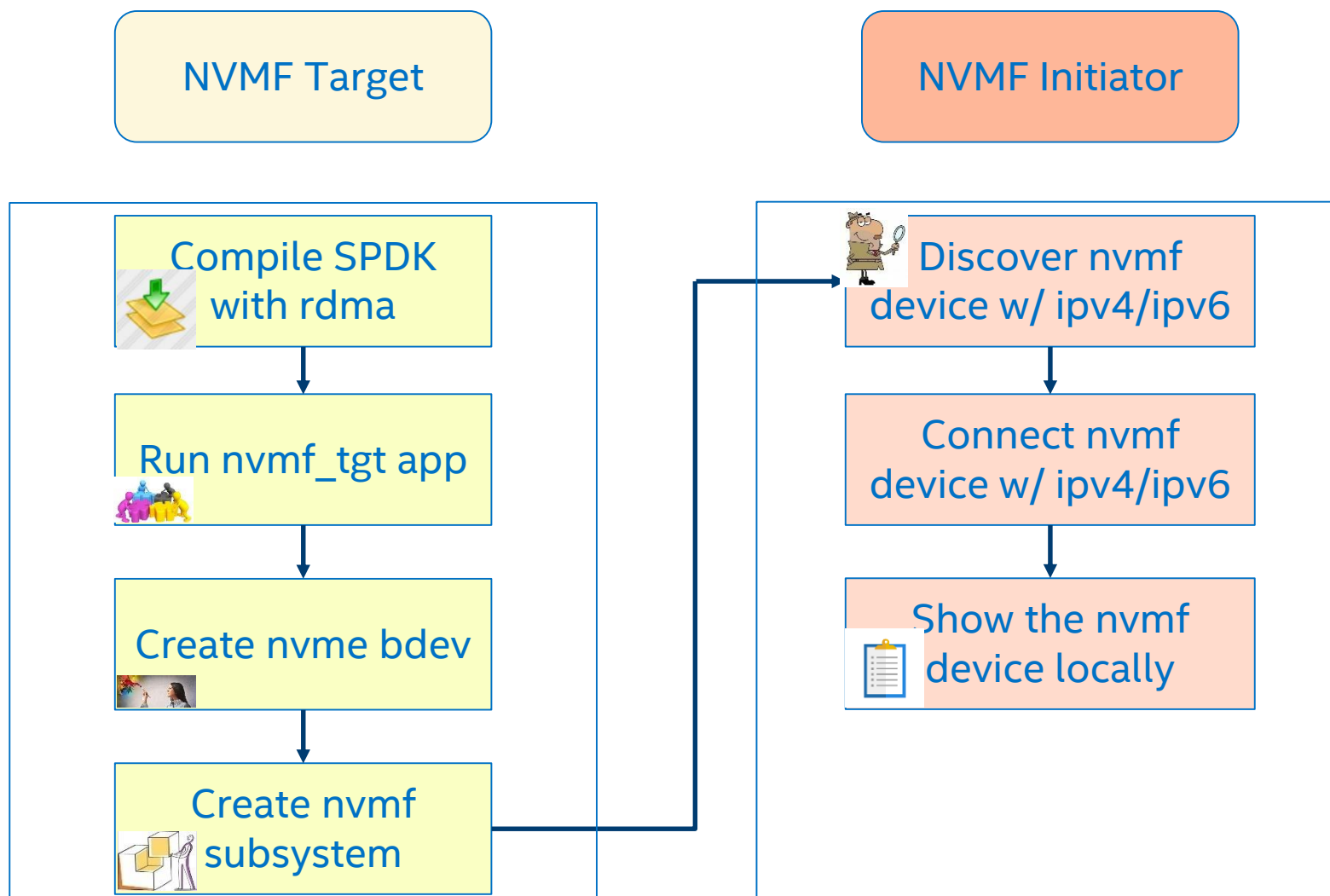
Available for usage and development questions as well as design discussions

- <https://github.com/spdk/spdk/issues>
- <https://review.gerrithub.io/#/q/project:spdk/spdk+status:open>
- <https://ci.spdk.io/status/>
- <https://trello.com/spdk>
- <https://webchat.freenode.net/>
- <http://www.spdk.io/community/>

Working in SPDK Community



RPC adoption in SPDK – NVMMF Instance



<http://www.spdk.io/doc/jsonrpc.html>

Key Takeaways



- Community Links

<https://github.com/spdk/spdk>

<https://review.gerrithub.io/#/q/project:spdk/spdk+status:open>

<https://ci.spdk.io/status/>

<https://trello.com/spdk>

- CI Links

<https://ci.spdk.io/>

<https://ci.spdk.io/spdk/status/>

- RPC

<http://www.spdk.io/doc/jsonrpc.html>

Thanks

SPDK Mailing List



Subscribing to SPDK

Subscribe to SPDK by filling out the following form. You will be sent email requesting confirmation, to prevent others from gratuitously subscribing you. This is a hidden list, which means that the list of members is available only to the list administrator.

Your email address:

Your name (optional):

You may enter a privacy password below. This provides only mild security, but should prevent others from messing with your subscription. **Do not use a valuable password** as it will occasionally be emailed back to you in cleartext.

If you choose not to enter a password, one will be automatically generated for you, and it will be sent to you once you've confirmed your subscription. You can always request a mail-back of your password when you edit your personal options.

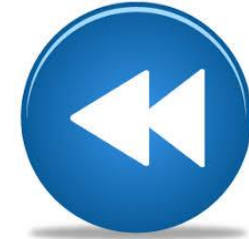
Pick a password:

Reenter password to confirm:

Which language do you prefer to display your messages? English (USA)

Subscribe

SPDK IRC Channel



HexChat: gangcao @ ZNC / #spdk

Storage Performance Development Kit - <http://www.spdk.io/>. This channel is logged at http://www.spdk.io/

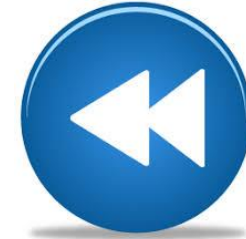
3 ops, 19 total

[00:34:55] bwalker the "right" way to write that line is:
[00:35:00] drv I think the idea is that they want a zero return value from the SSH call
[00:35:13] jimharris yeah - that's what I was guessing
[00:35:18] drv and shutdown is going to cause the shell to exit, so they exit 0 first, then in the background, sleep 1 and then shutdown and shutdown doesn't return 0?
[00:35:24] bwalker well I gave the patch a -1 for other reasons, if you want to ask him to make changes
[00:35:36] jimharris well, I think it probably races with the shutdown process killing the SSH session
[00:35:39] drv I don't know of a better way to do that, but it does look pretty clunky
[00:35:56] drv they could just ignore the SSH return code
[00:36:03] bwalker that's what I was going to recommend
[00:36:12] bwalker you expect that ssh connection to die, so allow for that
[00:36:23] drv ssh_vm "shutdonw ..." || true
[00:36:29] drv yep
[00:36:32] bwalker yep
[01:18:55] peluse bwalker, FYI addressed a bunch of your comments in <https://review.gerrithub.io/#/c/362847/> when you get a chance...
[01:55:27] drv bwalker, jimharris: this should (partially) fix the nightly build: <https://review.gerrithub.io/#/c/366149/>
[02:47:36] bwalker peluse: <https://review.gerrithub.io/#/admin/projects/spdk/spdk.github.io>
[02:47:56] bwalker no CI system hooked up like we had internally
[02:48:00] bwalker but it's there at least
[02:50:25] peluse cool! I'll check it out a bit later
[05:28:15] jimharris drv: which system has SPDK_TEST_IOAT enabled?
[05:32:18] drv wkb-fedora-03 has it
[05:50:24] drv jimharris: I am reviewing the qemu vhost-user-blk changes, and attempting to compile it fails, but it looks like it was broken even before the -blk changes
[05:50:58] drv with the latest spdk branch from <https://github.com/spdk/qemu>,
-

ChanServ
drv
jimharris
bwalker
changpe1
cunyinch
gangcao
guerby
jkkariu
jstern
kjakimia
pbshah1
peluse
ppelplin
pzedlews
qdai2
sethhowe_
tsg
ziyeyang

gangcao

SPDK Meetings



English : San Francisco Time

SPDK APAC Series

Wednesday, March 14, 2018 | 9:00 pm Pacific Daylight Time (GMT-07:00) | 1 hour | ● Not started

Recurrence: Every 2 weeks on Wednesday, from Wednesday, February 28, 2018, to no end date

Host: paul.e.luse@intel.com paul.e.luse@intel.com [Add to my calendar](#)

▶ [More information](#)

Join

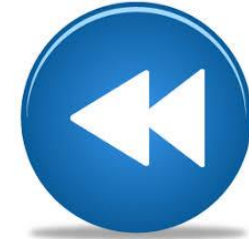
When it's time, join your meeting here.

If you are the host, [start your meeting](#).

By joining this meeting, you are accepting the Cisco WebEx [Terms of Service](#) and [Privacy Statement](#).

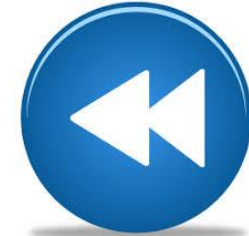


SPDK Gerrithub Code Review



Open							
★ lib: Return instead of abort() in nbd		Lance Hartmann	spdk/spdk	master	10:34 AM		✓
★ bdev: add iSCSI initiator bdev module		Jim Harris	spdk/spdk	master	9:51 AM		✗
★ bdev: make QoS channel management thread safe		Daniel Verkamp	spdk/spdk	master	9:46 AM	+1	✓
★ io_channel: add return value to pollers		rsudarik	spdk/spdk	master	9:33 AM		✓
★ autotest: update iscsi_filesystem_test		xuhuagen	spdk/spdk	master	9:24 AM	+1	✓
★ bdev/virtio/scsi: extract virtio response error handling to common func		Dariusz Stojaczyk	spdk/spdk	master	9:08 AM		✓ ✗
★ io_channel: use spdk_poller_fn consistently		Daniel Verkamp	spdk/spdk	master	9:07 AM		✓
★ include/json_rpc.h: add comments for public APIs		Yanbo Zhou	spdk/spdk	master	8:40 AM	-1	✓
★ test/iscsi_tgt: Update comment for disable CHAP authentication		Liang Yan	spdk/spdk	master	8:19 AM		✓ ✓
★ scripts/rpc: add timeout waiting for response		Pawel Wodkowski	spdk/spdk	master (static_json_config_v2)	8:18 AM	-1	✓
★ blog: test script hierarchy diagram		Seth Howell	spdk/spdk.github.io	master	8:07 AM	+1	✓
★ include/env.h: add comments for public APIs		Yanbo Zhou	spdk/spdk	master	8:02 AM	-1	✓
★ app: add -g flag hinting dpdk to create just one hugetlbfs file		Dariusz Stojaczyk	spdk/spdk	master	7:19 AM		✓
★ memory: implement "single file segments"		Dariusz Stojaczyk	spdk/dpdk	spdk-18.02	7:14 AM		
★ eal: add "single file segments" command-line option		Dariusz Stojaczyk	spdk/dpdk	spdk-18.02	7:12 AM		
★ [RFC] env/dpdk: use MEMPOOL_F_NO_PHYS_CONTIG		Dariusz Stojaczyk	spdk/spdk	master	7:10 AM		
★ include/ioat.h: add comments for public APIs		Yanbo Zhou	spdk/spdk	master	6:14 AM	-1	✓
★ include/copy_engine.h: add comments for public APIs		Yanbo Zhou	spdk/spdk	master	5:42 AM		✓ ✓
★ applying comments. Main purpose of this patch is to make spdk to distinguish ...		Zahra Khatami	spdk/spdk	master	5:36 AM		✗
★ [WIP] Add the py_spdk client for the upper management apps		heluwei	spdk/spdk	master (new_branch)	5:24 AM		✓
★ lib: Return instead of abort() in bdev		Lance Hartmann	spdk/spdk	master	4:51 AM		✓ ✓
★ test: set all core masks to use 8 or fewer cores.		Seth Howell	spdk/spdk	master	3:44 AM		✓ ✓
★ lib: Return instead of exit in trace		Lance Hartmann	spdk/spdk	master	3:39 AM		✓ ✓
★ [WIP] blobstore: clone snapshot relations		Piotr Pelpliński	spdk/spdk	master	12:42 AM		✗
★ lvol: add snapshots and clones		Piotr Pelpliński	spdk/spdk	master	12:33 AM		✓
★ blobstore: allow creating clones out of read-only snapshots		Piotr Pelpliński	spdk/spdk	master (snapshot)	12:23 AM		✗
★ blobstore: add snapshot functionality		Piotr Pelpliński	spdk/spdk	master (snapshot)	12:14 AM		✓

SPDK Github



The screenshot shows the Github repository page for 'spdk / spdk'. At the top, there are navigation links for 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. Below the repository name, there are statistics: 'Unwatch' (172), 'Star' (664), and 'Fork' (229). The main content area shows the repository description 'Storage Performance Development Kit' with a link to 'http://www.spdk.io/'. Below this, there are statistics: '4,559 commits', '5 branches', '11 releases', and '73 contributors'. A 'Branch: master' dropdown and a 'New pull request' button are visible. A list of recent commits is shown, including a revert by jimharris and dverkamp-intel, and various updates to files like 'app', 'build/lib', 'doc', 'dpdk', 'dpdkbuild', 'etc/spdk', 'examples', 'include', 'lib', 'mk', 'scripts', and 'test'. The commit messages include details like 'vhost: remove unused ENABLE_COREDUMP #define' and 'build: consolidate library outputs in build/lib'.

Centralized place for the code and bug management



SPDK Github – Report Issues



The screenshot shows the GitHub interface for the 'spdk / spdk' repository. At the top, there are navigation links for 'This repository', 'Search', 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. Below this, the repository name 'spdk / spdk' is displayed along with statistics: 'Unwatch' (172), 'Star' (664), and 'Fork' (229). The 'Issues' tab is selected, showing 35 issues. A banner message encourages labeling issues for new contributors with 'help wanted' or 'good first issue' labels, with a 'Go to Labels' button. Below the banner, there are filters for 'is:issue is:open', 'Labels', and 'Milestones', along with a 'New issue' button. The main content area shows a list of 35 open issues, with the following details visible:

Issue ID	Title	Author	Open Time	Comments
#262	directly use dpdk mempool failed.	click	27 minutes ago	0
#261	Core dump occurred when run nvme fio test	WenqianZong	19 hours ago	1
#260	spdk_mem_register doesnt work when the virtual address is not backed by physical page	kreuzerkrieg	4 days ago	11
#259	test/virtio: fio hangs when vhost crashes during fio tests	nedved1	4 days ago	1
#256	NVME Perf report error with high qd(like 127&128)- No valid NVMe controllers or AIO devices found bug	sudhesam	5 days ago	5
#255	SPDK iSCSI target crashed while running autotest nightly testing bug			2

SPDK Trello Board



Boards

Need more structure and control?

Sort, group, and manage your team's boards with [Business Class](#).

Let's Do This!

bdev

Blobstore

Cinder integration

CMB and PMR Support

Continuous Integration

iSCSI

JSON Configuration File

Logical Volumes

NVMe-oF

NVML pmem_bdev

QoS in Bdev

SPDK Community meeting agenda

SPDK Roadmap

SPDK Validation

Things To Do

vhost

vhost target live recovery

virtio (vhost initiator)

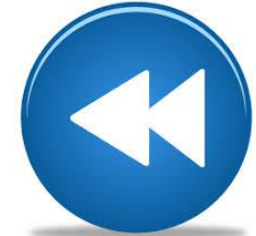
Place to find SPDK's ongoing or future work

Compile SPDK with rdma



```
[root@waikikibeach35 spdk]# ./configure --with-rdma
Creating CONFIG.local...done.
Type 'make' to build.
[root@waikikibeach35 spdk]# make -j
make[3]: Entering directory `/home/xuhuagen/spdk/dpdk'
== Build lib
== Build lib/librte_compat
== Build lib/librte_eal
== Build lib/librte_eal/common
== Build lib/librte_eal/linuxapp
== Build lib/librte_eal/linuxapp/eal
== Build lib/librte_pci
== Build lib/librte_ring
== Build lib/librte_timer
== Build lib/librte_metrics
== Build lib/librte_kvargs
== Build lib/librte_mempool
== Build lib/librte_mbuf
== Build lib/librte_net
== Build lib/librte_ether
== Build lib/librte_gso
== Build buildtools
== Build buildtools/pmdinfogen
```

Run nvme_tgt app



```
[root@waikikibeach35 spdk]# ./app/nvme_tgt/nvme_tgt
Starting DPDK 17.11.0 initialization.
[ DPDK EAL parameters: nvme -c 0x1 --file-prefix=spdk_pid40997 ]
EAL: Detected 44 lcore(s)
EAL: No free hugepages reported in hugepages-1048576kB
EAL: Probing VFIO support...
app.c: 376:spdk_app_start: *NOTICE*: Total cores available: 1
reactor.c: 642:spdk_reactors_init: *NOTICE*: occupied cpu socket mask is 0x1
reactor.c: 426:_spdk_reactor_run: *NOTICE*: Reactor started on core 0 on socket 0
EAL: PCI device 0000:00:04.0 on NUMA socket 0
EAL:   probe driver: 8086:6f20 spdk_ioat
copy_engine_ioat.c: 242:probe_cb: *NOTICE*: Found matching device at 0000:00:04.0 vendor:0x8086 device:0x6f20
EAL: PCI device 0000:00:04.1 on NUMA socket 0
EAL:   probe driver: 8086:6f21 spdk_ioat
copy_engine_ioat.c: 242:probe_cb: *NOTICE*: Found matching device at 0000:00:04.1 vendor:0x8086 device:0x6f21
EAL: PCI device 0000:00:04.2 on NUMA socket 0
EAL:   probe driver: 8086:6f22 spdk_ioat
copy_engine_ioat.c: 242:probe_cb: *NOTICE*: Found matching device at 0000:00:04.2 vendor:0x8086 device:0x6f22
EAL: PCI device 0000:00:04.3 on NUMA socket 0
EAL:   probe driver: 8086:6f23 spdk_ioat
copy_engine_ioat.c: 242:probe_cb: *NOTICE*: Found matching device at 0000:00:04.3 vendor:0x8086 device:0x6f23
EAL: PCI device 0000:00:04.4 on NUMA socket 0
EAL:   probe driver: 8086:6f24 spdk_ioat
copy_engine_ioat.c: 242:probe_cb: *NOTICE*: Found matching device at 0000:00:04.4 vendor:0x8086 device:0x6f24
EAL: PCI device 0000:00:04.5 on NUMA socket 0
EAL:   probe driver: 8086:6f25 spdk_ioat
copy_engine_ioat.c: 242:probe_cb: *NOTICE*: Found matching device at 0000:00:04.5 vendor:0x8086 device:0x6f25
EAL: PCI device 0000:00:04.6 on NUMA socket 0
EAL:   probe driver: 8086:6f26 spdk_ioat
copy_engine_ioat.c: 242:probe_cb: *NOTICE*: Found matching device at 0000:00:04.6 vendor:0x8086 device:0x6f26
```

Create nvme bdev



```
[root@waikikibeach35 scripts]# ./rpc.py construct_nvme_bdev -b "Nvme0" -t "pcie" -a 0000:06:00.0
```

```
[root@waikikibeach35 scripts]# ./rpc.py get_bdevs | jq
```

```
{
  "num_blocks": 7814037168,
  "name": "Nvme0n1",
  "driver_specific": {
    "nvme": {
      "trid": {
        "trtype": "PCIE",
        "traddr": "0000:06:00.0"
      },
      "ns_data": {
        "id": 1
      },
      "pci_address": "0000:06:00.0",
      "vs": {
        "nvme_version": "1.2"
      },
      "ctrlr_data": {
        "firmware_revision": "QDV10157",
        "serial_number": "PHLF727100D94P0IGN",
        "oacs": {
          "ns_manage": 0,
          "security": 0,
          "firmware": 1,
          "format": 1
        },
        "vendor_id": "0x8086",
        "model_number": "INTEL SSDPE2KX040T7"
      },
      "csts": {
        "rdy": 1,
        "cfs": 0
      }
    }
  },
  "supported_io_types": {
    "reset": true,
    "nvme_admin": true,
    "unmap": true,
    "read": true,
    "write zeroes": true,
    "write": true,
    "flush": true,
    "nvme_io": true
  },
  "claimed": false,
  "block_size": 512,
  "product_name": "NVMe disk",
  "aliases": []
}
```

Create nvme subsystem



```
[root@waikikibeach35 scripts]# ./rpc.py construct_nvme_subsystem nqn.2016-06.io.spdk:cnode1 "trtype:RDMA traddr:192.168.11.11 trsvcid:4420" "" -a -s SPDK0000000000000001 -n Nvme0n1
```

```
[root@waikikibeach35 scripts]# ./rpc.py get_nvme_subsystems | jq
[
  {
    "listen_addresses": [],
    "subtype": "Discovery",
    "nqn": "nqn.2014-08.org.nvmexpress.discovery",
    "hosts": [],
    "allow_any_host": true
  },
  {
    "listen_addresses": [
      {
        "trtype": "RDMA",
        "adrfam": "IPv4",
        "trsvcid": "4420",
        "traddr": "192.168.11.11",
        "transport": "RDMA"
      }
    ],
    "subtype": "NVMe",
    "hosts": [],
    "namespaces": [
      {
        "bdev_name": "Nvme0n1",
        "nsid": 1,
        "name": "Nvme0n1"
      }
    ],
    "allow_any_host": true,
    "serial_number": "SPDK0000000000000001",
    "nqn": "nqn.2016-06.io.spdk:cnode1"
  }
]
```

Discover nvme device



```
[root@waikikibeach29 scripts]# nvme discover -t rdma -a 192.168.11.11 -s 4420
Discovery Log Number of Records 1, Generation counter 3
====Discovery Log Entry 0====
trtype: rdma
adrfam: ipv4
subtype: nvme subsystem
treq: not specified
portid: 0
trsvcid: 4420
subnqn: nqn.2016-06.io.spdk:cnode1
traddr: 192.168.11.11
rdma_prtype: not specified
rdma_qptype: connected
rdma_cms: rdma-cm
rdma_pkey: 0x0000
[root@waikikibeach29 scripts]#
```

Connect and show nvme device








```
[root@waikikibeach29 scripts]# nvme connect -t rdma -n "nqn.2016-06.io.spdk:cnode1" -a 192.168.11.11 -s 4420
[root@waikikibeach29 scripts]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda          8:0    0 931.5G  0 disk
├─sda2       8:2    0  900G  0 part /
└─sda1       8:1    0  31.5G  0 part [SWAP]
nvme0n1     259:0   0   3.7T  0 disk
[root@waikikibeach29 scripts]#
```

Debug with CI tools

Debug gerrithub verification failing issue

The SPDK gerrithub have one main CI test tool, “SPDK Automated Test System”.

The SPDK Automated Test System will run test cases to verify your patch. See the pictures below for the SPDK Automated Test System.

 SPDK Automated Test System Patch Set 12: Verified-1	Feb 26 2:10 PM ↩
https://ci.spdk.io/spdk/builds/review/e1f751e0b7fb6978dcb88819286f5a54becbe687.1519624923	
 Liang Yan Uploaded patch set 13.	Feb 26 2:14 PM
 SPDK Automated Test System Patch Set 13: Verified-1	Feb 26 2:46 PM ↩
https://ci.spdk.io/spdk/builds/review/03fa8df7258db4c889b6be25ea273137d5d25ba3.1519626738	
 Liang Yan Uploaded patch set 14.	Feb 26 3:12 PM
 SPDK Automated Test System Patch Set 14: Verified+1	Feb 26 3:25 PM ↩
https://ci.spdk.io/spdk/builds/review/22c0f2fcdd2586a916d6a4d554b38e349509541a.1519629390	

Test result

After clicking the link, you will get following picture:

Resources	
COVERAGE	GERRIT PAGE
POOL LOGS	DOCUMENTATION









Build Summary			
Type	Commit Message	Total Time	Result
Review	scripts: refactor fio test scripts	7m46s	Test Failure

Agent Summary					
Machine	Arch	OS	Notes	Result	Total Time
centos6	x86_64	Linux-2.6.32-696.20.1.el6.x86_64-x86_64-with-centos-6.9-Final	NVMe and Blockdev virtual test machine	Pass	4m0s
centos7	x86_64	Linux-3.10.0-693.17.1.el7.x86_64-x86_64-with-centos-7.4.1708-Core	NVMe and Blockdev virtual test machine	Pass	3m11s
fedora-01	x86_64	Linux-4.14.18-200.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	NVMe and Event virtual test machine	Pass	4m48s
fedora-02	x86_64	Linux-4.14.18-200.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	iSCSI and Ceph RBD virtual test machine	Fail	5m17s
fedora-03	x86_64	Linux-4.13.16-202.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	1x Intel P3700 NVMe; Mellanox ConnectX-4(mlx5) RNIC. NVMe and NVMe-oF test machine.	Fail	4m46s
fedora-04	x86_64	Linux-4.14.18-200.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	BlobFS + RocksDB test machine	Pass	6m31s
fedora-05	x86_64	Linux-4.13.16-202.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	Unit test + vhost (VM)	Pass	6m12s
fedora-06	x86_64	Linux-4.13.16-202.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	iSCSI and NVMe-oF virtual test machine; Soft-RoCE NIC	Fail	2m41s
fedora-07	x86_64	Linux-4.13.16-202.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	VHost/FIO virtual test machine	Pass	6m32s
fedora-08	x86_64	Linux-4.14.18-200.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	vhost	Pass	7m22s
freebsd-0	x86_64	FreeBSD-11.1-RELEASE-p1-amd64-64bit-ELF	1x Intel P3700 NVMe	Pass	6m26s
ubuntu14.04	x86_64	Linux-3.13.0-142-generic-x86_64-with-Ubuntu-14.04-trusty	NVMe and Blockdev virtual test machine	Pass	3m52s
ubuntu16.04	x86_64	Linux-4.4.0-116-generic-x86_64-with-Ubuntu-16.04-xenial	NVMe and Blockdev virtual test machine	Pass	4m29s
ubuntu17.04	x86_64	Linux-4.10.0-42-generic-x86_64-with-Ubuntu-17.04-zesty	NVMe and Blockdev virtual test machine	Pass	4m27s

Check error log

Click the machine name and you will get the list of test result. See the picture below:

Index of /spdk/builds/review/e1f751e0b7fb6978dcb88819286f5a54becbe687.1519624923/fedora-02

Name	Last modified	Size	Description
 Parent Directory		-	
 build.log	2018-02-25 22:10	431K	
 calsoft.json	2018-02-25 22:10	14K	
 calsoft/	2018-02-25 22:10	-	
 dmesg.log	2018-02-25 22:10	152K	
 fail	2018-02-25 22:10	0	
 timing.txt	2018-02-25 22:10	828	
 ut_coverage/	2018-02-25 22:10	-	

Log information description part 1

Each machine will choose test cases to run. See the picture at right.

```
01:03:17 $ SPDK_BUILD_DOC=0
01:03:17 $ SPDK_RUN_SCANBUILD=0
01:03:17 $ SPDK_RUN_VALGRIND=1
01:03:17 $ SPDK_TEST_UNITTEST=1
01:03:17 $ SPDK_TEST_ISCSI=1
01:03:17 $ SPDK_TEST_NVME=0
01:03:17 $ SPDK_TEST_NVMM=0
01:03:17 $ SPDK_TEST_RBD=1
01:03:17 $ SPDK_TEST_VHOST=0
01:03:17 $ SPDK_TEST_BLOCKDEV=1
01:03:17 $ SPDK_TEST_IOAT=0
01:03:17 $ SPDK_TEST_EVENT=0
01:03:17 $ SPDK_TEST_BLOBFS=0
01:03:17 $ SPDK_RUN_ASAN=0
01:03:17 $ SPDK_TEST_VHOST_INIT=0
01:03:17 $ SPDK_TEST_LVOL=0
01:03:17 $ : 0
01:03:17 $ export SPDK_BUILD_DOC
01:03:17 $ : 1
01:03:17 $ export SPDK_BUILD_IOAT_KMOD
01:03:17 $ : 1
01:03:17 $ export SPDK_RUN_CHECK_FORMAT
01:03:17 $ : 0
01:03:17 $ export SPDK_RUN_SCANBUILD
01:03:17 $ : 1
01:03:17 $ export SPDK_RUN_VALGRIND
01:03:17 $ : 1
01:03:17 $ export SPDK_TEST_UNITTEST
01:03:17 $ : 1
01:03:17 $ export SPDK_TEST_ISCSI
01:03:17 $ : 0
01:03:17 $ export SPDK_TEST_NVME
01:03:17 $ : 0
01:03:17 $ export SPDK_TEST_NVMM
01:03:17 $ : 1
01:03:17 $ export SPDK_TEST_RBD
01:03:17 $ : 0
01:03:17 $ export SPDK_TEST_VHOST
01:03:17 $ : 1
01:03:17 $ export SPDK_TEST_BLOCKDEV
01:03:17 $ : 0
01:03:17 $ export SPDK_TEST_IOAT
01:03:17 $ : 0
01:03:17 $ export SPDK_TEST_EVENT
01:03:17 $ : 0
01:03:17 $ export SPDK_TEST_BLOBFS
01:03:17 $ : 0
01:03:17 $ export SPDK_TEST_VHOST_INIT
01:03:17 $ : 1
01:03:17 $ export SPDK_TEST_NVMM
01:03:17 $ : 0
```

Log information description part 2

Then the machine will configure SPDK.
The related information is in the
picture at right.

```
01:03:17 $ export UBSAN_OPTIONS=halt_on_error=
01:03:17 $ export UBSAN_OPTIONS=halt_on_error=
1:print_stacktrace=1:abort_on_error=1
01:03:17 $ UBSAN_OPTIONS=halt_on_error=1:print_stacktrace=
1:abort_on_error=1
01:03:17 $ export HUGEMEM=8192
01:03:17 $ HUGEMEM=8192
01:03:17 $ DEFAULT_RPC_ADDR=/var/tmp/spdk.sock
01:03:17 $ case `uname` in
01:03:17 $     $ uname
01:03:17 $ DPKD_LINUX_DIR=/usr/local/share/dpdk/x86_64-native-
linuxapp-gcc
01:03:17 $ '[' -d /usr/local/share/dpdk/x86_64-native-linuxapp-
gcc ']'
01:03:17 $ MAKE=make
01:03:17 $     $ nproc
01:03:17 $ MAKEFLAGS=-j16
01:03:17 $ config_params+=' --enable-coverage'
01:03:17 $ '[' 1 -eq 1 ']'
01:03:17 $ config_params+=' --enable-ubsan'
01:03:17 $ '[' 0 -eq 1 ']'
01:03:17 $ '[' '!' -z '' ']'
01:03:17 $ '[' -f /usr/include/infiniband/verbs.h ']'
01:03:17 $ config_params+=' --with-rdma'
01:03:17 $ '[' -f /usr/include/libpmemblk.h ']'
01:03:17 $ config_params+=' --with-nvml'
01:03:17 $ '[' -d /usr/src/fio ']'
01:03:17 $ config_params+=' --with-fio=/usr/src/fio'
01:03:17 $ '[' -d /usr/include/rbd ']'
01:03:17 $ '[' -d /usr/include/rados ']'
01:03:17 $ config_params+=' --with-rbd'
01:03:17 $ export config_params
01:03:17 $ '[' -z '' ']'
01:03:17 $ '[' -z /home/sys_sgs/build_pool/agent/repo ']'
01:03:17 $ '[' '!' -d
/home/sys_sgs/build_pool/agent/repo/../../output ']'
01:03:17 $
output_dir=/home/sys_sgs/build_pool/agent/repo/../../output
01:03:17 $ export output_dir
01:03:17 $ set -o errtrace
01:03:17 $ trap 'trap - ERR; print_backtrace >&2' ERR
01:03:17 $ out=/home/sys_sgs/build_pool/agent/output
01:03:17 $ umask 022
01:03:17 $ cd /home/sys_sgs/build_pool/agent/repo
01:03:17 $ date -u
Mon Feb 26 06:03:17 UTC 2018
01:03:17 $ git describe --tags
v18.01-227-gelf751e0b
01:03:17 $ timing_enter autobuild
01:03:17 $ set +x
01:03:17 $ ./configure --enable-debug --enable-werror --enable-
coverage --enable-ubsan --with-rdma --with-nvml --with-
fio=/usr/src/fio --with-rbd
```


Log information description part 3

The machine will then do some minor steps, then compiling SPDK. See the picture at right.

```
01:03:25 $ ./scripts/build_kmod.sh build
Build Linux Ioat Test Module ...
make -C /lib/modules/4.14.18-200.fc26.x86_64/build
M=/home/sys_sgs/build_pool/agent/repo/examples/ioat/kperf/kmod modules
make[1]: Entering directory '/usr/src/kernels/4.14.18-200.fc26.x86_64'
  CC [M] /home/sys_sgs/build_pool/agent/repo/examples/ioat/kperf/kmod/dmaperf.o
  Building modules, stage 2.
  MODPOST 1 modules
  CC /home/sys_sgs/build_pool/agent/repo/examples/ioat/kperf/kmod/dmaperf.mod.o
  LD [M] /home/sys_sgs/build_pool/agent/repo/examples/ioat/kperf/kmod/dmaperf.ko
make[1]: Leaving directory '/usr/src/kernels/4.14.18-200.fc26.x86_64'
01:03:27 $ timing_exit build_kmod
01:03:27 $ set +x
01:03:27 $ make cc_version
SPDK using CC=cc
Using built-in specs.
COLLECT_GCC=cc
COLLECT_LTO_WRAPPER=/usr/libexec/gcc/x86_64-redhat-linux/7/lto-wrapper
OFFLOAD_TARGET_NAMES=nvptx-none
OFFLOAD_TARGET_DEFAULT=1
Target: x86_64-redhat-linux
Configured with: ../configure --enable-bootstrap --enable-languages=c,c++,objc,obj-
c++,fortran,ada,go,lto --prefix=/usr --mandir=/usr/share/man --infodir=/usr/share/info --
with-bugurl=http://bugzilla.redhat.com/bugzilla --enable-shared --enable-threads=posix --
enable-checking=release --enable-multilib --with-system-zlib --enable-__cxa_atexit --
disable-libunwind-exceptions --enable-gnu-unique-object --enable-linker-build-id --with-
gcc-major-version-only --with-linker-hash-style=gnu --enable-plugin --enable-initfini-
array --with-isl --enable-libmpx --enable-offload-targets=nvptx-none --without-cuda-
driver --enable-gnu-indirect-function --with-tune=generic --with-arch_32=i686 --build=x86_
64-redhat-linux
Thread model: posix
gcc version 7.3.1 20180130 (Red Hat 7.3.1-2) (GCC)
01:03:27 $ make cxx_version
SPDK using CXX=g++
Using built-in specs.
COLLECT_GCC=g++
COLLECT_LTO_WRAPPER=/usr/libexec/gcc/x86_64-redhat-linux/7/lto-wrapper
OFFLOAD_TARGET_NAMES=nvptx-none
OFFLOAD_TARGET_DEFAULT=1
Target: x86_64-redhat-linux
Configured with: ../configure --enable-bootstrap --enable-languages=c,c++,objc,obj-
c++,fortran,ada,go,lto --prefix=/usr --mandir=/usr/share/man --infodir=/usr/share/info --
with-bugurl=http://bugzilla.redhat.com/bugzilla --enable-shared --enable-threads=posix --
enable-checking=release --enable-multilib --with-system-zlib --enable-__cxa_atexit --
disable-libunwind-exceptions --enable-gnu-unique-object --enable-linker-build-id --with-
gcc-major-version-only --with-linker-hash-style=gnu --enable-plugin --enable-initfini-
array --with-isl --enable-libmpx --enable-offload-targets=nvptx-none --without-cuda-
driver --enable-gnu-indirect-function --with-tune=generic --with-arch_32=i686 --build=x86_
64-redhat-linux
Thread model: posix
gcc version 7.3.1 20180130 (Red Hat 7.3.1-2) (GCC)
```

C code style error

If you have submitted C codes which style not follow SPDK coding style. The autotest will report following error:

Resources

- COVERAGE @ GERRIT PAGE
- SUPPLEMENTAL LOGS

Build Summary

Type	Commit Message	Total Time	Result
Review	get autotest error info for style issue.	7m52s	Test Failure

Agent Summary

Machine	Arch	OS	Notes	Result	Total Time
centos7	x86_64	Linux-3.10.0-693.17.1.el7.x86_64-x86_64-with-centos-7.4.1708-Core	NVMe and Blockdev virtual test machine	Pass	2m55s
fedora-01	x86_64	Linux-4.14.18-200.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	NVMe and Event virtual test machine	Fail	51s
fedora-02	x86_64	Linux-4.14.18-200.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	ISCSI and Ceph RBD virtual test machine	Fail	51s
fedora-03	x86_64	Linux-4.13.16-202.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	1x Intel P3700 NVMe; Mellanox ConnectX-4(mix5) RNIC. NVMe and NVMe-oF test machine.	Fail	19s
fedora-04	x86_64	Linux-4.14.18-200.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	BlobFS + RocksDB test machine	Pass	6m37s
fedora-05	x86_64	Linux-4.13.16-202.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	Unit test + vhost (VM)	Fail	48s
fedora-06	x86_64	Linux-4.13.16-202.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	ISCSI and NVMe-oF virtual test machine; Soft-RoCE NIC	Fail	52s
fedora-07	x86_64	Linux-4.13.16-202.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	VHost/FIO virtual test machine	Fail	48s
fedora-08	x86_64	Linux-4.14.18-200.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	vhost	Pass	7m29s
freebsd-0	x86_64	FreeBSD-11.1-RELEASE-p1-amd64-64bit-ELF	1x Intel P3700 NVMe	Pass	6m35s
ubuntu14.04	x86_64	Linux-3.13.0-143-generic-x86_64-with-Ubuntu-14.04-trusty	NVMe and Blockdev virtual test machine	Pass	3m49s
ubuntu16.04	x86_64	Linux-4.4.0-116-generic-x86_64-with-Ubuntu-16.04-xenial	NVMe and Blockdev virtual test machine	Fail	50s
ubuntu17.04	x86_64	Linux-4.10.0-42-generic-x86_64-with-Ubuntu-17.04-zesty	NVMe and Blockdev virtual test machine	Pass	3m58s

```
Type 'make' to build.
22:43:42 $ timing_enter check_format
22:43:42 $ set +x
22:43:42 $ '[' 1 -eq 1 ']'
22:43:42 $ ./scripts/check_format.sh
Checking coding style... errors detected
diff --git a/app/spdk_tgt/spdk_tgt.c b/app/spdk_tgt/spdk_tgt.c
index 0d927c6a..56abbd68 100644
--- a/app/spdk_tgt/spdk_tgt.c
+++ b/app/spdk_tgt/spdk_tgt.c
@@ -78,7 +78,7 @@ main(int argc, char **argv)
     struct spdk_app_opts opts = {};
     int rc;

-printf("this is for format issue...\n");
+    printf("this is for format issue...\n");
     spdk_app_opts_init(&opts);
     opts.name = "spdk_tgt";
     if ((rc = spdk_app_parse_args(argc, argv, &opts, ""),
Formatted app/spdk_tgt/spdk_tgt.c
Incorrect code style detected in one or more files.
The files have been automatically formatted.
Remember to add the files to your commit.
Checking comment style... OK
Checking for spaces before tabs... OK
Checking trailing whitespace in output strings... OK
Checking for use of forbidden library functions... OK
Checking blank lines at end of file... OK
Checking for POSIX includes... OK
Checking Python style... OK
Checking whether CHANGELOG.md should be updated... OK
22:43:50 $ trap - ERR
22:43:50 $ print_backtrace
22:43:50 $ local shell_options=ehx8E
22:43:50 $ set +x
===== Backtrace start: =====

in /home/sys_sgs/w/build_pool/agent/repo/autobuild.sh:23 -> main()
...
18
19 ./configure $config_params
20
21 timing_enter check_format
22 if [ $SPDK_RUN_CHECK_FORMAT -eq 1 ]; then
=> 23     ./scripts/check_format.sh
24 fi
25 timing_exit check_format
26
27 timing_enter build_kmod
28 if [ $SPDK_BUILD_IOAT_KMOD -eq 1 ]; then
...
===== Backtrace end =====
22:43:50 $ return 0
```



C code compiling error issue

If your patch can't pass the compiling step, the autotest will report following error:

Resources	
COVERAGE	GERRIT PAGE
SUPPLEMENTAL LOGS	

Build Summary			
Type	Commit Message	Total Time	Result
Review	debug use. get compile error info	4m11s	Test Failure

Agent Summary					
Machine	Arch	OS	Notes	Result	Total Time
centos7	x86_64	Linux-3.10.0-693.17.1.el7.x86_64-x86_64-with-centos-7.4.1708-Core	NVMe and Blockdev virtual test machine	Fail	1m5s
fedora-01	x86_64	Linux-4.14.18-200.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	NVMe and Event virtual test machine	Fail	2m17s
fedora-02	x86_64	Linux-4.14.18-200.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	iSCSI and Ceph RBD virtual test machine	Fail	1m10s
fedora-03	x86_64	Linux-4.13.16-202.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	1x Intel P3700 NVMe; Mellanox ConnectX-4(mlx5) RNIC. NVMe and NVMe-oF test machine.	Fail	35s
fedora-04	x86_64	Linux-4.14.18-200.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	BlobFS + RocksDB test machine	Fail	38s
fedora-05	x86_64	Linux-4.13.16-202.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	Unit test + vhost (VM)	Fail	1m9s
fedora-06	x86_64	Linux-4.13.16-202.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	iSCSI and NVMe-oF virtual test machine; Soft-RoCE NIC	Fail	1m17s
fedora-07	x86_64	Linux-4.13.16-202.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	VHost/FIO virtual test machine	Fail	1m10s
fedora-08	x86_64	Linux-4.14.18-200.fc26.x86_64-x86_64-with-fedora-26-Twenty_Six	vhost	Fail	44s
freebsd-0	x86_64	FreeBSD-11.1-RELEASE-p1-amd64-64bit-ELF	1x Intel P3700 NVMe	Fail	1m31s
ubuntu14.04	x86_64	Linux-3.13.0-143-generic-x86_64-with-Ubuntu-14.04-trusty	NVMe and Blockdev virtual test machine	Fail	1m0s
ubuntu16.04	x86_64	Linux-4.4.0-116-generic-x86_64-with-Ubuntu-16.04-xenial	NVMe and Blockdev virtual test machine	Fail	1m8s
ubuntu17.04	x86_64	Linux-4.10.0-42-generic-x86_64-with-Ubuntu-17.04-zesty	NVMe and Blockdev virtual test machine	Fail	1m3s