

# Explication et vérification de service UCS Hyperflex Zookeeper

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## Introduction

Ce document décrit Zookeeper, qui est essentiellement un service centralisé pour des systèmes distribués à une mémoire hiérarchique de clé-valeur. Il est utilisé pour fournir un service de configuration distribué, le service de synchronisation, et nommer le registre pour de grands systèmes distribués. L'architecture de Zookeeper prend en charge la Haute disponibilité par des services redondants. Les clients peuvent demander ainsi à un autre leader de Zookeeper si le premier ne répond pas. Les Noeuds de Zookeeper enregistrent leurs données dans un espace de noms hiérarchique, tout comme un système de fichiers ou une structure de données d'arborescence. Les clients peuvent lire de et écrire aux Noeuds et de cette façon avoir un service de configuration partagé. Zookeeper peut être visualisé comme système d'émission atomique par lequel des mises à jour sont totalement commandées.

Zookeeper offre ces fonctions principales :

- Système fiable - Le système est très fiable parce qu'il continue à fonctionner même si un noeud échoue.
- Architecture simple - L'architecture de Zookeeper est tout à fait simple ; il utilise un espace de noms hiérarchique partagé, qui aide dans la coordination de processus.
- Traitement Fast - Zookeeper est particulièrement rapide pour des charges de travail lecture-dominantes.
- Extensible - La représentation de Zookeeper peut être améliorée par l'ajout des Noeuds.

Dans HX, il y a cette implémentation spécifique :

- Le service appelé l'**exposant** gère le startup/arrêt de zookeeper.
- Les processus dans la batterie HX sont des clients à Zookeeper et communiquent au-dessus des storfs ex du port **2181 de** TCP, stmgr, et ainsi de suite.
- Les systèmes avec plus de cinq Noeuds auront quelques Noeuds dans autonome. Les systèmes avec cinq Noeuds ou moins devraient ne jamais avoir un noeud dans autonome.
- Le nombre minimal de Noeuds requis pour le quorum = le  $N/2 + 1$ .

Par exemple, parce que une batterie de trois noeuds -  $N/2=1.5$  a arrondi hors fonction à  $1 + 1 = 2$  (seulement une panne de noeud peut être tolérée)

Par exemple, parce que une batterie de cinq noeuds -  $N/2=2.5$  a arrondi hors fonction à  $2 + 1 = 3$  (seulement deux pannes de noeud peuvent être tolérées)

Puisque vous faites seulement jamais cinq Noeuds pour un ZK groupent, vous tolèrent seulement un maximum de deux pannes de noeud pour un certain nombre de Noeuds dans la batterie. C'est vrai des Noeuds convergés.

## État du service d'exposant de contrôle

```
root@SpringpathControllerMSH7NHXRFL:/var/log/zookeeper# service exhibitor status
exhibitor start/running, process 4905
```

```
root@help:/var/log/springpath# ps -aux | grep -i exhibitor
root 12519 0.0 0.2 4690592 198892 ? Ssl May19 7:19 exhibitor -cp exhibitor.jar:/etc/exhibitor/ -
Xmx256M -XX:+HeapDumpOnOutOfMemoryError -
XX:HeapDumpPath=/var/log/exhibitor_heap_dump_2019_05_19_22:19:48.hprof -
Dlog4j.configuration=file:///etc/exhibitor/log4j.properties -
Dspringpath.zkdownscript=/usr/share/springpath/storfs-misc/zkMonitor.sh -
Djava.security.egd=file:/dev/./urandom -jar exhibitor.jar --hostname 10.197.252.100 -c file --
fsconfigdir /etc/exhibitor --port 8180 --listenaddress 10.197.252.100
root@help:/var/log/springpath# pidof exhibitor
12519
```

## Service de Zookeeper de requête

Zookeeper a une syntaxe de commande de quatre lettres qui te permet de questionner l'état, répertorient des connexions, nombre de znodes, et ainsi de suite.

État de zookeeper de contrôle sur le noeud local - (le ==> de ruok sont vous BIEN ?. l'imok==>I AM APPROUVENT).

```
root@SpringpathControllerMSH7NHXRFL:/var/log/zookeeper# echo ruok|nc localhost 2181
imok
```

Vérifiez si zookeeper est un leader ou un disciple.

```
root@SpringpathControllerMSH7NHXRFL:/var/log/zookeeper# echo srvr | nc localhost 2181
Zookeeper version: 3.4.6--1, built on 06/16/2015 22:50 GMT
Latency min/avg/max: 0/0/101
Received: 213128515
Sent: 213164119
Connections: 6
Outstanding: 0
Zxid: 0xa000301d0
Mode: leader
Node count: 17090
```

```
root@SpringpathControllerMSH7NHXRFL:/var/log/zookeeper# echo stat | nc localhost 2181
Zookeeper version: 3.4.6--1, built on 06/16/2015 22:50 GMT
Clients:
 /192.168.5.161:56128[1] (queued=0,recved=169146196,sent=169162634)
 /192.168.5.161:38614[1] (queued=0,recved=186015,sent=186017)
 /192.168.5.164:44412[1] (queued=0,recved=184398,sent=184399)
 /192.168.5.164:44447[1] (queued=0,recved=561168,sent=563034)
 /127.0.0.1:60060[0] (queued=0,recved=1,sent=0)
 /192.168.5.161:58754[1] (queued=0,recved=39233,sent=39261)
```

```
Latency min/avg/max: 0/0/101
Received: 213109927
Sent: 213145531
Connections: 6
Outstanding: 0
```

```
Zxid: 0xa000301d0
Mode: leader
Node count: 17090
```

```
root@SpringpathControllerMSH7NHXRFL:/var/log/zookeeper# echo mntr | nc localhost 2181
zk_version      3.4.6--1, built on 06/16/2015 22:50 GMT
zk_avg_latency   0
zk_max_latency   101
zk_min_latency   0
zk_packets_received 213148668
zk_packets_sent  213184272
zk_num_alive_connections 6
zk_outstanding_requests 0
zk_server_state  leader
zk_znode_count   17090
zk_watch_count   4305
zk_ephemorals_count 20
zk_approximate_data_size 1831768
zk_open_file_descriptor_count 43
zk_max_file_descriptor_count 4096
zk_followers     3
zk_synced_followers 3
zk_pending_syncs 0
```

Vérifiez la configuration de Zookeeper :

```
root@SpringpathControllerMSH7NHXRFL:/var/log/zookeeper# echo conf | nc localhost 2181
clientPort=2181
dataDir=/var/zookeeper/version-2
dataLogDir=/var/zookeeper/version-2
tickTime=3000
maxClientCnxns=60
minSessionTimeout=6000
maxSessionTimeout=60000
serverId=3
initLimit=10
syncLimit=3
electionAlg=3
electionPort=3888
quorumPort=2888
peerType=0
```

## **Fichiers journal de Zookeeper dans une installation vivante**

S'il y a des questions dans des services de Zookeeper, ces fichiers journal aideront à trouver des suivis :

- /var/log/zookeeper/zookeeper \* - logs archivés Maintains, les mots clé de recherche utiles AVERTISSENT, ERREUR, au revoir, leader, et ainsi de suite.
- /var/log/springpath/zk- \*
- /var/log/springpath/exhibitor.log

```
root@SpringpathControllerMSH7NHXRFL:/var/log/zookeeper# grep -i leader
/var/log/zookeeper/zookeeper.log*
/var/log/zookeeper/zookeeper.log.7:2016-10-14 22:59:26,088 [myid:3] - INFO
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Leader@60] - TCP NoDelay set to: true
/var/log/zookeeper/zookeeper.log.7:2016-10-14 22:59:26,099 [myid:3] - INFO
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Leader@358] - LEADING - LEADER ELECTION TOOK - 354
/var/log/zookeeper/zookeeper.log.7:2016-10-14 22:59:26,120 [myid:3] - INFO [LearnerHandler-
/192.168.5.164:36487:LearnerHandler@522] - Received NEWLEADER-ACK message from 0
/var/log/zookeeper/zookeeper.log.7:2016-10-14 22:59:26,120 [myid:3] - INFO [LearnerHandler-
/192.168.5.163:43451:LearnerHandler@522] - Received NEWLEADER-ACK message from 1
/var/log/zookeeper/zookeeper.log.7:2016-10-14 22:59:26,120 [myid:3] - INFO
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Leader@943] - Have quorum of supporters, sids: [ 0,1,3
]; starting up and setting last processed zxid: 0x100000000
```

```
/var/log/zookeeper/zookeeper.log.7:2016-10-14 22:59:26,272 [myid:3] - INFO
[WorkerReceiver[myid=3]:FastLeaderElection@597] - Notification: 1 (message format version), 3
(n.leader), 0x0 (n.zxid), 0x1 (n.round), LOOKING (n.state), 2 (n.sid), 0x0 (n.peerEpoch) LEADING
(my state)
/var/log/zookeeper/zookeeper.log.7:2016-10-14 22:59:26,291 [myid:3] - INFO [LearnerHandler-
/192.168.5.162:48778:LearnerHandler@486] - Sending snapshot last zxid of peer is 0x0 zxid of
leader is 0x100000000sent zxid of db as 0x100000000
/var/log/zookeeper/zookeeper.log.7:2016-10-14 22:59:26,298 [myid:3] - INFO [LearnerHandler-
/192.168.5.162:48778:LearnerHandler@522] - Received NEWLEADER-ACK message from 2
```

```
root@SpringpathControllerMSH7NHXRFL:/var/log/zookeeper# grep -i warn
```

```
/var/log/zookeeper/zookeeper.log*
```

```
/var/log/zookeeper/zookeeper.log.7:2016-10-14 22:46:30,354 [myid:] - WARN
[main:QuorumPeerMain@113] - Either no config or no quorum defined in config, running in
standalone mode
/var/log/zookeeper/zookeeper.log.7:2016-10-14 22:52:55,238 [myid:] - WARN
[main:QuorumPeerMain@113] - Either no config or no quorum defined in config, running in
standalone mode
```

```
root@SpringpathControllerMSH7NHXRFL:/var/log/zookeeper# grep -i goodbye
```

```
/var/log/zookeeper/zookeeper.log*
```

```
/var/log/zookeeper/zookeeper.log.1:2017-01-23 03:55:50,429 [myid:3] - WARN [LearnerHandler-
/192.168.5.163:44118:LearnerHandler@646] - ***** GOODBYE /192.168.5.163:44118 *****
/var/log/zookeeper/zookeeper.log.1:2017-01-24 23:30:14,956 [myid:3] - WARN [LearnerHandler-
/192.168.5.164:44720:LearnerHandler@646] - ***** GOODBYE /192.168.5.164:44720 *****
/var/log/zookeeper/zookeeper.log.3:2016-12-01 23:45:22,510 [myid:3] - WARN [LearnerHandler-
/192.168.5.164:44051:LearnerHandler@646] - ***** GOODBYE /192.168.5.164:44051 *****
/var/log/zookeeper/zookeeper.log.3:2016-12-08 00:36:37,752 [myid:3] - WARN [LearnerHandler-
/192.168.5.162:46577:LearnerHandler@646] - ***** GOODBYE /192.168.5.162:46577 *****
/var/log/zookeeper/zookeeper.log.4:2016-11-22 23:45:30,957 [myid:3] - WARN [LearnerHandler-
/192.168.5.163:49016:LearnerHandler@646] - ***** GOODBYE /192.168.5.163:49016 *****
/var/log/zookeeper/zookeeper.log.4:2016-11-23 00:03:59,397 [myid:3] - WARN [LearnerHandler-
/192.168.5.164:45952:LearnerHandler@646] - ***** GOODBYE /192.168.5.164:45952 *****
/var/log/zookeeper/zookeeper.log.4:2016-12-01 22:51:00,538 [myid:3] - WARN [LearnerHandler-
/192.168.5.163:45284:LearnerHandler@646] - ***** GOODBYE /192.168.5.163:45284 *****
/var/log/zookeeper/zookeeper.log.5:2016-11-10 23:39:47,477 [myid:3] - WARN [LearnerHandler-
/192.168.5.163:43576:LearnerHandler@646] - ***** GOODBYE /192.168.5.163:43576 *****
/var/log/zookeeper/zookeeper.log.5:2016-11-11 00:49:39,782 [myid:3] - WARN [LearnerHandler-
/192.168.5.164:35219:LearnerHandler@646] - ***** GOODBYE /192.168.5.164:35219 *****
```

### Quelques logs témoin - Zookeeper se connectant l'élection

```
2017-01-22 23:47:29,427 [myid:3] - INFO [Thread-2:QuorumCnxManager$Listener@504] - My election
bind port: /192.168.5.161:3888
2017-01-22 23:47:29,435 [myid:3] - INFO
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:QuorumPeer@714] - LOOKING
2017-01-22 23:47:29,438 [myid:3] - INFO
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:FastLeaderElection@815] - New election. My id = 3,
proposed zxid=0x9000a6b4d
2017-01-22 23:47:29,443 [myid:3] - INFO [WorkerReceiver[myid=3]:FastLeaderElection@597] -
Notification: 1 (message format version), 2 (n.leader), 0x800055ea0 (n.zxid), 0x1 (n.round),
FOLLOWING (n.state), 0 (n.sid), 0x9 (n.peerEpoch) LOOKING (my state)
2017-01-22 23:47:29,444 [myid:3] - INFO [WorkerReceiver[myid=3]:FastLeaderElection@597] -
Notification: 1 (message format version), 2 (n.leader), 0x800055ea0 (n.zxid), 0x1 (n.round),
FOLLOWING (n.state), 1 (n.sid), 0x9 (n.peerEpoch) LOOKING (my state)
2017-01-22 23:47:29,444 [myid:3] - INFO [WorkerReceiver[myid=3]:FastLeaderElection@597] -
Notification: 1 (message format version), 3 (n.leader), 0x9000a6b4d (n.zxid), 0x1 (n.round),
LOOKING (n.state), 3 (n.sid), 0x9 (n.peerEpoch) LOOKING (my state)
2017-01-22 23:47:29,444 [myid:3] - INFO [WorkerReceiver[myid=3]:FastLeaderElection@597] -
Notification: 1 (message format version), 2 (n.leader), 0x800055ea0 (n.zxid), 0x1 (n.round),
```

FOLLOWING (n.state), 1 (n.sid), 0x9 (n.peerEpoch) LOOKING (my state)  
2017-01-22 23:47:29,445 [myid:3] - INFO [WorkerReceiver[myid=3]:FastLeaderElection@597] -  
Notification: 1 (message format version), 2 (n.leader), 0x800055ea0 (n.zxid), 0x1 (n.round),  
LEADING (n.state), 2 (n.sid), 0x9 (n.peerEpoch) LOOKING (my state)  
2017-01-22 23:47:29,445 [myid:3] - INFO [WorkerReceiver[myid=3]:FastLeaderElection@597] -  
Notification: 1 (message format version), 2 (n.leader), 0x800055ea0 (n.zxid), 0x1 (n.round),  
FOLLOWING (n.state), 0 (n.sid), 0x9 (n.peerEpoch) LOOKING (my state)  
2017-01-22 23:47:29,446 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:QuorumPeer@784] - FOLLOWING  
2017-01-22 23:47:29,449 [myid:3] - INFO [QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Learner@86] -  
TCP NoDelay set to: true  
2017-01-22 23:47:29,449 [myid:3] - INFO [WorkerReceiver[myid=3]:FastLeaderElection@597] -  
Notification: 1 (message format version), 2 (n.leader), 0x800055ea0 (n.zxid), 0x1 (n.round),  
LEADING (n.state), 2 (n.sid), 0x9 (n.peerEpoch) FOLLOWING (my state)  
2017-01-22 23:47:29,660 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server  
environment:zookeeper.version=3.4.6--1, built on 06/16/2015 22:50 GMT  
2017-01-22 23:47:29,661 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server  
environment:host.name=SpringpathControllerMSH7NHXRFL  
2017-01-22 23:47:29,661 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server  
environment:java.version=1.7.0\_79  
2017-01-22 23:47:29,661 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server  
environment:java.vendor=Oracle Corporation  
2017-01-22 23:47:29,661 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server  
environment:java.home=/usr/lib/jvm/java-7-openjdk-amd64/jre  
2017-01-22 23:47:29,661 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server  
environment:java.class.path=/usr/share/zookeeper/bin/./build/classes:/usr/share/zookeeper/bin/.  
./build/lib/\*.jar:/usr/share/zookeeper/bin/./lib/slf4j-log4j12-  
1.6.1.jar:/usr/share/zookeeper/bin/./lib/slf4j-api-  
1.6.1.jar:/usr/share/zookeeper/bin/./lib/netty-  
3.7.0.Final.jar:/usr/share/zookeeper/bin/./lib/log4j-  
1.2.16.jar:/usr/share/zookeeper/bin/./lib/jline-  
0.9.94.jar:/usr/share/zookeeper/bin/./zookeeper-  
3.4.6.jar:/usr/share/zookeeper/bin/./src/java/lib/\*.jar:/usr/share/zookeeper/bin/./conf:  
2017-01-22 23:47:29,661 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server  
environment:java.library.path=/usr/java/packages/lib/amd64:/usr/lib/x86\_64-linux-  
gnu/jni:/lib/x86\_64-linux-gnu:/usr/lib/x86\_64-linux-gnu:/usr/lib/jni:/lib:/usr/lib  
2017-01-22 23:47:29,661 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server  
environment:java.io.tmpdir=/tmp  
2017-01-22 23:47:29,661 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server  
environment:java.compiler=<NA>  
2017-01-22 23:47:29,661 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server environment:os.name=Linux  
2017-01-22 23:47:29,661 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server environment:os.arch=amd64  
2017-01-22 23:47:29,661 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server environment:os.version=3.2.0-  
58-generic  
2017-01-22 23:47:29,661 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server environment:user.name=root  
2017-01-22 23:47:29,661 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server environment:user.home=/root  
2017-01-22 23:47:29,662 [myid:3] - INFO  
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Environment@100] - Server  
environment:user.dir=/usr/share/zookeeper  
2017-01-22 23:47:29,662 [myid:3] - INFO

```
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:ZooKeeperServer@162] - Created server with tickTime
3000 minSessionTimeout 6000 maxSessionTimeout 60000 datadir /var/zookeeper/version-2 snapdir
/var/zookeeper/version-2
2017-01-22 23:47:29,663 [myid:3] - INFO [QuorumPeer[myid=3]/0:0:0:0:0:0:0:0:2181:Follower@63] -
FOLLOWING - LEADER ELECTION TOOK - 226
```

```
root@SpringpathControllerMSH7NHXRFL:/var/log/springpath# cat zk-debug-storfs.log
```

```
2017-01-22 23:47:18,702:5866(0x7fd1f7ef5700):ZOO_INFO@check_events@1760: initiated connection to
server [192.168.5.163:2181]
2017-01-22 23:47:18,704:5866(0x7fd1f7ef5700):ZOO_INFO@check_events@1807: session establishment
complete on server [192.168.5.163:2181], sessionId=0x159165ff6310005, negotiated timeout=17001
2017-01-22 23:47:18,704:5866(0x7fd1f76f4700):ZOO_INFO@process_completions@2170: Calling a
watcher for node s], type = s
2017-01-23 01:50:16,809:5866(0x7fd1f7ef5700):ZOO_ERROR@handle_socket_error_msg@1778: Socket
[192.168.5.163:2181] zk retcode=-4, errno=112(Host is down): failed while receiving a server
response
2017-01-23 01:50:16,818:5866(0x7fd1f76f4700):ZOO_INFO@process_completions@2170: Calling a
watcher for node s], type = s
2017-01-23 01:50:16,818:5866(0x7fd1f7ef5700):ZOO_INFO@check_events@1760: initiated connection to
server [192.168.5.164:2181]
2017-01-23 01:50:16,818:5866(0x7fd1f7ef5700):ZOO_ERROR@handle_socket_error_msg@1778: Socket
[192.168.5.164:2181] zk retcode=-4, errno=112(Host is down): failed while receiving a server
response
2017-01-23 01:50:17,819:5866(0x7fd1f7ef5700):ZOO_ERROR@handle_socket_error_msg@1740: Socket
[192.168.5.162:2181] zk retcode=-4, errno=115(Operation now in progress): poll refused to accept
read/write from the client
```

```
root@help:/var/log/springpath# cat zkEvents.log
```

```
INFO:ZkEvents:Send changes to listeners
INFO:EventDB:Received message{"timestamp": 1559200009008, "description": "Cluster policy
compliance is satisfied", "id": "ClusterPolicyComplianceSatisfiedEvent"}
DEBUG:kazoo.client:Received EVENT: Watch(type=3, state=3,
path='/zkEvents/lastModificationTime')
DEBUG:kazoo.client:Sending request(xid=42): GetData(path='/zkEvents/lastModificationTime',
watcher=<bound method DataWatch._watcher of <kazoo.recipe.watchers.DataWatch object at
0x7fec80ffd0d0>>)
DEBUG:kazoo.client:Received response(xid=42): ('{"timestamp": 1559200009009, "description":
"Cluster is healthy", "id": "ClusterHealthNormalEvent"}', ZnodeStat(czxid=4294968021,
mzxid=85899377486, ctime=1543045592975, mtime=1559200010730, version=465, cversion=0,
aversion=0, ephemeralOwner=0, dataLength=99, numChildren=0, pzxid=4294968021))
INFO:ZkEvents:Version: 465, data: {"timestamp": 1559200009009, "description": "Cluster is
healthy", "id": "ClusterHealthNormalEvent"}
INFO:ZkEvents:Send changes to listeners
INFO:EventDB:Received message{"timestamp": 1559200009009, "description": "Cluster is healthy",
"id": "ClusterHealthNormalEvent"}
INFO:EventDB:Client(38) disconnected
INFO:EventDB:New client connected and was given id 39
INFO:EventDB:Client(39) disconnected
```

```
root@SpringpathControllerPZTMTRSH7K:/var/log/springpath# tail exhibitor.log
```

```
05-20 05:28:52.223 INFO org.mortbay.log - Started SocketConnector@10.197.252.99:8180
05-20 05:29:20.106 INFO com.netflix.exhibitor.core.activity.ActivityLog - State: down
05-20 05:29:20.106 INFO com.netflix.exhibitor.core.activity.ActivityLog - Attempting to stop
instance
05-20 05:29:20.106 INFO com.netflix.exhibitor.core.activity.ActivityLog - Attempting to
start/restart ZooKeeper
05-20 05:29:20.328 INFO com.netflix.exhibitor.core.activity.ActivityLog - jps didn't find
```

```
instance - assuming ZK is not running
05-20 05:29:20.347 INFO com.netflix.exhibitor.core.activity.ActivityLog - Process started via:
/usr/share/zookeeper/bin/zkServer.sh
05-20 05:29:20.353 ERROR com.netflix.exhibitor.core.activity.ActivityLog - ZooKeeper Server:
ZooKeeper JMX enabled by default
05-20 05:29:20.353 ERROR com.netflix.exhibitor.core.activity.ActivityLog - ZooKeeper Server:
Using config: /usr/share/zookeeper/bin/./conf/zoo.cfg
05-20 05:29:21.366 INFO com.netflix.exhibitor.core.activity.ActivityLog - ZooKeeper Server:
Starting zookeeper ... STARTED
05-20 05:29:50.128 INFO com.netflix.exhibitor.core.activity.ActivityLog - State: serving
```

## **Fichiers journal de Zookeeper de Support-paquet (storfs)**

Dans un support-paquet, ce sont d'importants fichiers aux regarder :

```
root@SpringpathControllerMSH7NHXRFL:/var/log/zookeeper# echo conf | nc localhost 2181
clientPort=2181
dataDir=/var/zookeeper/version-2
dataLogDir=/var/zookeeper/version-2
tickTime=3000
maxClientCnxns=60
minSessionTimeout=6000
maxSessionTimeout=60000
serverId=3
initLimit=10
syncLimit=3
electionAlg=3
electionPort=3888
quorumPort=2888
peerType=0
```