

ZooKeeper

1. ZooKeeper 什么?

ZooKeeper

```

Zookeeper      /
Master         /

```

Zookeeper

1

2

3

4

5

zookeeper

zookeeper

zookeeper

zookeeper

zxid	Zookeeper Transaction Id
zookeeper	zxid

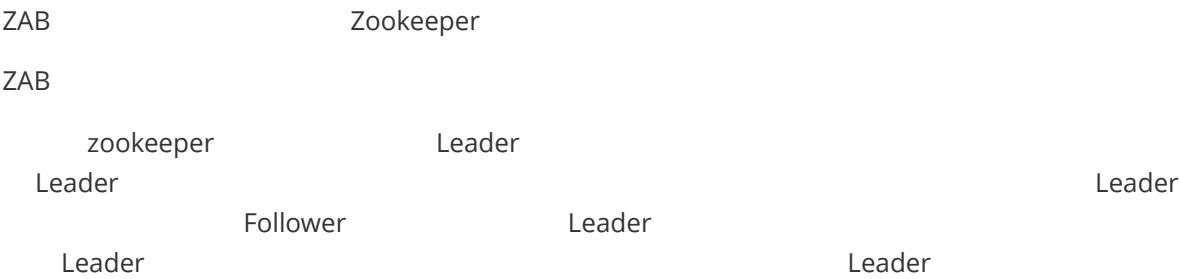
2. ZooKeeper 供了什么?

- 1
- 2

3.Zookeeper 件



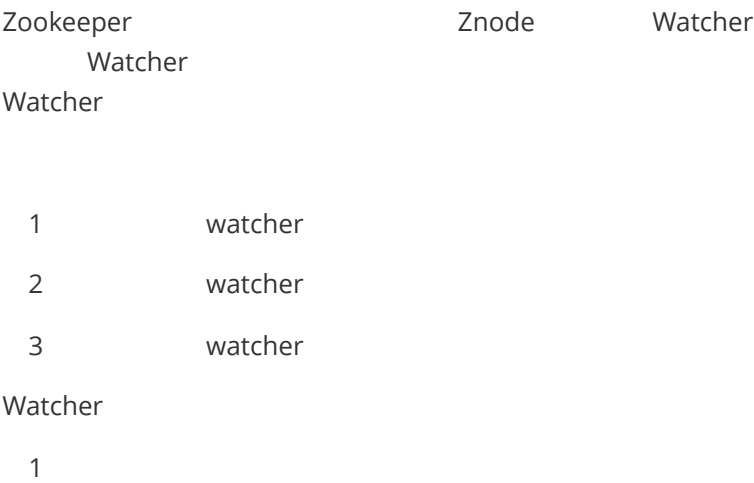
4. ZAB 协 ?



5. Znode

- 1 PERSISTENT- Zookeeper
- 2 EPHEMERAL- zookeeper
- 3 PERSISTENT_SEQUENTIAL-
- 4 EPHEMERAL_SEQUENTIAL-

6. Zookeeper Watcher 制 -- 变



	Watcher	Zookeeper
2		
	Watcher	
3		
3.1	Watcher	
3.2	Watcher boolean	Watcher
4	watcher event socket Zookeeper znode Zookeeper	server client ordering guarantee Zookeeper
5	watcher getData exists getChildren	
6	watcher create delete setData	
7	watch znode exist watch watch	watch client watch

7. 册 Watcher

1	getData()/getChildren()/exist() API Watcher
2	request Watcher WatchRegistration
3	Packet request
4	Watcher ZKWatcherManager
5	

8. 务 Watcher

1	Watcher
	ServerCnxn ServerCnxn Watcher WatcherManager WatchTable watch2Paths
2	Watcher setData() NodeDataChanged
2.1	WatchedEvent SyncConnected NodeDataChanged WatchedEvent
2.2	Watcher

	WatchTable	Watcher		
2.3			Watcher	
2.4	WatchTable	Watch2Paths	Watcher	Watcher
3	process	Watcher		
	process	ServerCnxn	TCP	Watcher

9. Watcher

	SendThread	EventThread	Watcher
	Watcher		Watcher

10. ACL 制 制

UGO User/Group/Others
Linux/Unix

ACL Access Control List

	Scheme		
1	IP	IP	
2	Digest	username:password	
3	World	digest	"world:anyone"
4	Super		
		IP	
	Permission		
1	CREATE	Znode	
2	DELETE		
3	READ		
4	WRITE		
5	ADMIN		ACL

11. Chroot

3.2.0	Chroot	
	Chroot	
	Chroot	Zookeeper
	Zookeeper	

12. 会话

Zookeeper

“ ” ExpirationTime

$\text{ExpirationTime}_\text{current} = \text{currentTime} + \text{sessionTimeout}$

$\text{ExpirationTime} = (\text{ExpirationTime}_\text{current} / \text{ExpirationInterval} + 1) * \text{tickTime}$

ExpirationInterval, ExpirationInterval Zookeeper tickTime

13. 任务

Leader

1

2

Follower

1

Leader

2

Proposal

3

Leader

Observer

1 3.0

2

Leader

3

14. Zookeeper 下 Server 工作

LOOKING FOLLOWING LEADING OBSERVING

1 LOOKING

Leader

Leader

Leader

2 FOLLOWING

Follower

3 LEADING

Leader

4 OBSERVING

Observer

15. 同

Leader Learner Follower Observer Leader
 Learner Leader

Learner Learder

Zookeeper

1 DIFF
 2 TRUNC+DIFF
 3 TRUNC
 4 SNAP
 Leader

peerLastZxid

· learner ACKEPOCH lastZxid Learner
 ZXID

minCommittedLog

· Leader Proposal committedLog ZXIDmaxCommittedLog
 · Leader Proposal committedLog ZXID DIFF

· peerLastZxid minCommittedLog maxCommittedLog
 TRUNC+DIFF

· Leader Learner
 Learner -- Leader peerLastZxid
 ZXID TRUNC

· peerLastZxid maxCommittedLog
 SNAP

· peerLastZxid minCommittedLog

· Leader Proposal peerLastZxid lastProcessZxid

16. zookeeper 何保 事务 ?

zookeeper Id proposal

zxid zxid 64 32 epoch ; ; ; leader

leader epoch 32 proposal

server

17. 分 中为什么会 Master?

leader

18. zk 何 ?

Zookeeper 3 Zookeeper

Follower 2 Zookeeper

Leader Zookeeper Leader

ZK ZK

3 cluster 1 (leader 2 >1.5)

2 cluster 1 (leader 1 <=1)

19. zookeeper nginx 区别

zk nginx nginx

zk

20. Zookeeper 几 几 ?

21. 几台 , 则 ?

2N+1 N>0 3

22. 动 加 ?

Zookeeper

Zookeeper

23. Zookeeper watch 久 ? 为什么不

Watch

Watch

Watch

getData("/
A
A",true)

A

watch

watch

24. Zookeeper java 些?

java

zk

zkclient

Apache

Curator

25. chubby 什么, zookeeper 你 么 ?

chubby

google

paxos

zookeeper

chubby

zab

paxos

26. 几个 zookeeper 令

ls get set create delete

27. ZAB Paxos 与区别?

1

Leader

Follower

2 Leader

Follower

3 ZAB
Ballot

Proposal

epoch

Leader

Paxos

ZAB

Zookeeper

Paxos

28. Zookeeper 典

Zookeeper /

Zookeeper

Watcher

1 /

2

3

4 /

5

6 Master

7

8

发 /

/

Push

Pull

1

2

3

Zookeeper

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Zookeeper

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Zookeeper

Watcher

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Zookeeper

Zookeeper

zk

zk

分 协

zk

watcher

zk 务 (件)

zk

zk (件 制)

znode

zk

zk znode

znode

watcher

Zookeeper (件 制)

master

zookeeper

highcount

master

Zookeeper 分 (件 制)

zookeeper

zookeeper

znode

```
createznnode
```

```
/distribute_lock
```

distribute_lock

```
/distribute_lock
```

master

Zookeeper

1

2 FIFO

PERSISTENT_SEQUENTIAL

Zookeeper

znode

Watcher

znode

SEQUENTIAL