Tomcat Clsutering

— *2020/12/08 17:19*

⚠️ Tomcat 8.x
. Tomcat 7.x .

Tomcat Clustering https://tomcat.apache.org/tomcat-9.0-doc/cluster-howto.html
.

- web.xml `<distributable/>`
- Session attributes `java.io.Serializable` .
  `sessionAttributeFilter` .
- DeltaManager
  `org.apache.catalina.ha.session.ClusterSessionListener` .
- DeltaManager 4 . 5
  BackupManager
-
  .

```
<Cluster className="org.apache.catalina.ha.tcp.SimpleTcpCluster"/>
```

.

DeltaManager .
. 4
. DeltaManager Tomcat
, ———————————————————— .

BackupManager . BackupManager
. 4
DeltaManager BackupManager .

.

- 228.0.0.4 .

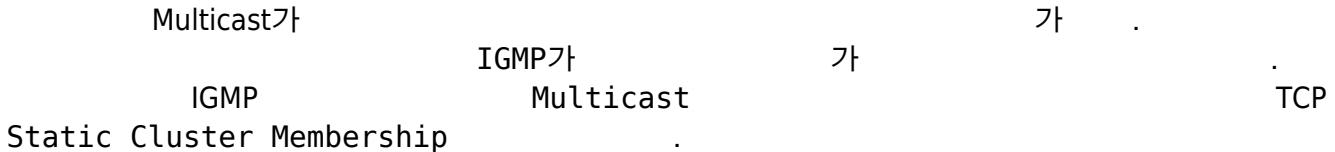- 　　　　　　　　45564　　　(　　　　　　　　　　　　　　　　　　　　　　　　　　)
- 　　　　　IP　java.net.InetAddress.getLocalHost().getHostAddress()
　.(127.0.0.1　　　　　　　　　　　　　　　.　　　　　　　　　　　　　　　　　　　)
- 　　　　　　　　　TCP　　　4000-4100　　　　　　　　　　　　　　　　　　　　　　　.
- 　　ClusterSessionListener　　　　　　　.
- TcpFailureDetector　　MessageDispatchInterceptor　　　　　　　　　　　　　　　.

TCP StaticMembership

　　　　　　Multicast　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　.
　　　　　　　　　　　　IGMP　　　　　　　　　　　　　　　　　　　　　　　　　　.
　　　　　IGMP　　　　　　　　　　Multicast　　　　　　　　　　　　　　　TCP
　Static Cluster Membership　　　　　　　　.

> ⚠️ Tomcat 9.0.17　　　　　　　Membership
> StaticMembershipService　　　　　　　　　　　　　　.
> 　　　　　　　　　StaticMember　　　　　　　　　2
> 　　　　.

StaticMembershipService　　　　　　　　　　　(　　)

1. McastService Membership　　　　　　　　　　　StaticMembershipService　　　.
2. TCPPingInterceptor　　　- StaticMember　　　　　　　　　　　　.

```
<Cluster className="org.apache.catalina.ha.tcp.SimpleTcpCluster"
        channelSendOptions="6">

  <Manager className="org.apache.catalina.ha.session.DeltaManager"
          expireSessionsOnShutdown="false"
          notifyListenersOnReplication="true"/>

  <Channel className="org.apache.catalina.tribes.group.GroupChannel">
    <!-- multicast membership -->
    <!--
    <Membership
className="org.apache.catalina.tribes.membership.McastService"
                address="${tomcat.cluster.member.address}"
                port="${tomcat.cluster.member.port}"
                frequency="500"
                dropTime="3000"
                />
    -->
    <!-- static membership
  9.0.17                          StaticMembershipService          .
    Interceptor                                                    .
```

```
            -->
            <Membership
className="org.apache.catalina.tribes.membership.StaticMembershipService">
               <Member
className="org.apache.catalina.tribes.membership.StaticMember"
                        port="5011"
                        host="10.33.0.51"
                        uniqueId="{1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,1}"/>
               <Member
className="org.apache.catalina.tribes.membership.StaticMember"
                        port="5011"
                        host="10.33.0.52"
                        uniqueId="{1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,2}"/>
            </Membership>

            <Receiver
className="org.apache.catalina.tribes.transport.nio.NioReceiver"
                      address="${tomcat.cluster.receiver.address}"
                      port="${tomcat.cluster.receiver.port}"
                      autoBind="100"
                      selectorTimeout="5000"
                      maxThreads="6"
                      />

            <Sender
className="org.apache.catalina.tribes.transport.ReplicationTransmitter">
               <Transport
className="org.apache.catalina.tribes.transport.nio.PooledParallelSender"/>
            </Sender>
            <!-- if use StaticMembership enable TcpPingInterceptor -->
            <Interceptor
className="org.apache.catalina.tribes.group.interceptors.TcpPingInterceptor"
/>
            <Interceptor
className="org.apache.catalina.tribes.group.interceptors.TcpFailureDetector"
/>
            <Interceptor
className="org.apache.catalina.tribes.group.interceptors.MessageDispatchInte
rceptor"/>

        </Channel>

        <Valve className="org.apache.catalina.ha.tcp.ReplicationValve"
               filter=""/>
        <Valve
className="org.apache.catalina.ha.session.JvmRouteBinderValve"/>
        <!--
        <Deployer className="org.apache.catalina.ha.deploy.FarmWarDeployer"
                  tempDir="/tmp/war-temp/"
                  deployDir="/tmp/war-deploy/"
                  watchDir="/tmp/war-listen/"
```

```
                     watchEnabled="false"/>
        -->

      <ClusterListener
className="org.apache.catalina.ha.session.ClusterSessionListener"/>
      </Cluster>
```

StaticMembershipInterceptor   (9.0.17   -

)

  1. McastService Membership   .
  2. TCPPingInterceptor   - StaticMember   .
  3. StaticMembershipInterceptor

     StaticMembershipInterceptor   TCP StaticMember

.

```
       <!-- channelSendOptions      6:          8:
    8:                  Receiver    selectorTimeout   5000(5 )
       channelStartOptions
                    .
       -->
       <Cluster className="org.apache.catalina.ha.tcp.SimpleTcpCluster"
                channelSendOptions="6">

         <!-- Delta Manager -->
         <Manager className="org.apache.catalina.ha.session.DeltaManager"
                  expireSessionsOnShutdown="false"
                  notifyListenersOnReplication="true"/>

         <!-- Backup Manager
         <Manager className="org.apache.catalina.ha.session.BackupManager"
                  expireSessionsOnShutdown="false"
                  notifyListenersOnReplication="true"
                  mapSendOptions="6"/>
         -->

         <Channel
className="org.apache.catalina.tribes.group.GroupChannel">

           <!-- Multicast Member -->
           <!--
           <Membership
className="org.apache.catalina.tribes.membership.McastService"
                       address="${tomcat.cluster.member.address}"
                       port="${tomcat.cluster.member.port}"
                       frequency="500"
                       dropTime="3000"/>
```

```
            -->

            <Receiver
className="org.apache.catalina.tribes.transport.nio.NioReceiver"
                      address="${tomcat.cluster.receiver.address}"
                      port="${tomcat.cluster.receiver.port}"
                      selectorTimeout="100"
                      maxThreads="6"/>

            <Sender
className="org.apache.catalina.tribes.transport.ReplicationTransmitter">
                <Transport
className="org.apache.catalina.tribes.transport.nio.PooledParallelSender"/>
            </Sender>

        <!--

    ping           .


                              .
                TcpFailureDetector                         . -->
            <Interceptor
className="org.apache.catalina.tribes.group.interceptors.TcpPingInterceptor"
/>
        <!--                                                          -
->
            <Interceptor
className="org.apache.catalina.tribes.group.interceptors.TcpFailureDetector"
/>
            <Interceptor
className="org.apache.catalina.tribes.group.interceptors.MessageDispatchInte
rceptor"/>
            <Interceptor
className="org.apache.catalina.tribes.group.interceptors.ThroughputIntercept
or"/>

            <!-- StaticMember
    . -->
            <Interceptor
className="org.apache.catalina.tribes.group.interceptors.StaticMembershipInt
erceptor">
        <!--
            : Tomcat 9.0.17                    <LocalMember>
                              .
                                          <Member>
  , Tomcat                              .
                LocalMember                               .
https://tomcat.apache.org/tomcat-9.0-doc/config/cluster-membership.html#Sett
ing
            -->
            <!--
            <LocalMember
```

```
className="org.apache.catalina.tribes.membership.StaticMember"
                          domain="staging-cluster"
uniqueId="{1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,1}"/>
                -->

        <!--                                      -->
              <Member
className="org.apache.catalina.tribes.membership.StaticMember"
                        port="4000"
                        securePort="-1"
                        host="tomcat2"
                        domain="staging-cluster"
                        uniqueId="{1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,2}"/>
            </Interceptor>

        </Channel>

      <!--                                                    -->
          <Valve className="org.apache.catalina.ha.tcp.ReplicationValve"
filter=".*\.gif|.*\.js|.*\.jpeg|.*\.jpg|.*\.png|.*\.htm|.*\.html|.*\.css|.*\
.txt"/>

          <!-- route           jvmRoute            .
                  route            jvmRoute            failback
-->
          <Valve
className="org.apache.catalina.ha.session.JvmRouteBinderValve"/>

      <!--                                                  <Host

        <Deployer
className="org.apache.catalina.ha.deploy.FarmWarDeployer"
                    tempDir="/tmp/war-temp/"
                    deployDir="/tmp/war-deploy/"
                    watchDir="/tmp/war-listen/"
                    watchEnabled="false"/>
        -->

        <!-- DeltaManager            -->
        <ClusterListener
className="org.apache.catalina.ha.session.ClusterSessionListener"/>
      </Cluster>
```

- https://tomcat.apache.org/tomcat-9.0-doc/cluster-howto.html
- https://indienote.tistory.com/401
  - tomcatcluster_0.pdf

From:
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