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# Tomcat Clustering

— 2024/12/11 13:51



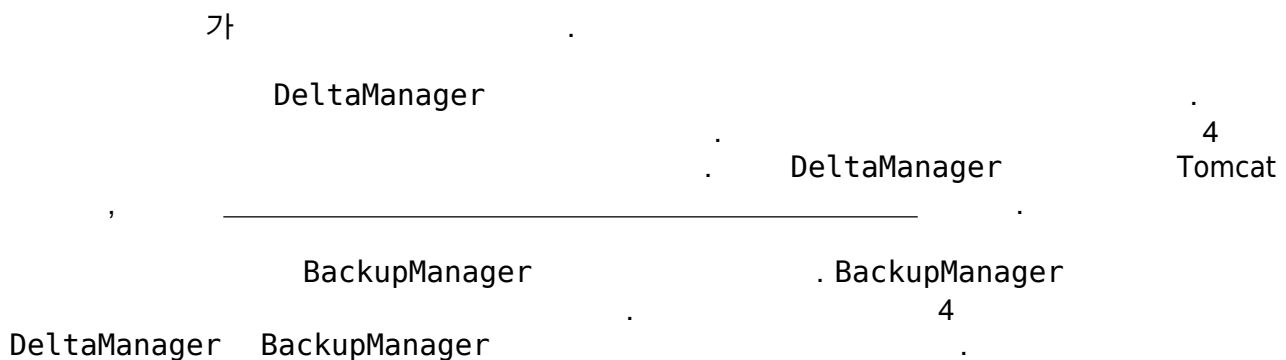
Tomcat 9.x  
Tomcat 7.x

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.ClusterSessionListener가
- DeltaManager 4 . 5  
BackupManager
- 

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



- 가
- 228.0.0.4

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

## TCP StaticMembership

Multicast가 가 .  
 IGMP가 가 .  
 IGMP Multicast TCP  
 Static Cluster Membership .



Tomcat 9.0.17 Membership  
 StaticMembershipService 가 가 .  
 StaticMember 2가

StaticMembershipService	StaticMembershipInterceptor
<Membership>	<Interceptor>
org.apache.catalina.tribes.membership.StaticMembershipService	org.apache.catalina.tribes.group.interceptors.StaticMembershipInterceptor
( ) .	( ) .
<Member> <LocalMember>	<Member>

### 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          가 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      가
-->
<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
        가
        가
        가
        가
        TcpFailureDetector
        -->
        <Interceptor
className="org.apache.catalina.tribes.group.interceptors.TcpPingInterceptor"
/>
        <!--
        가
        -
        ->
        <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
        가
        <LocalMember>

```

```

                                <Member>
, Tomcat
                                LocalMember
https://tomcat.apache.org/tomcat-9.0-doc/config/cluster-membership.html#Setting
                                -->
                                <!--
                                <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
                                route가                                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://tomcat.apache.org/tomcat-9.0-doc/config/cluster-membership.html>
  - tomcatcluster\_0.pdf

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