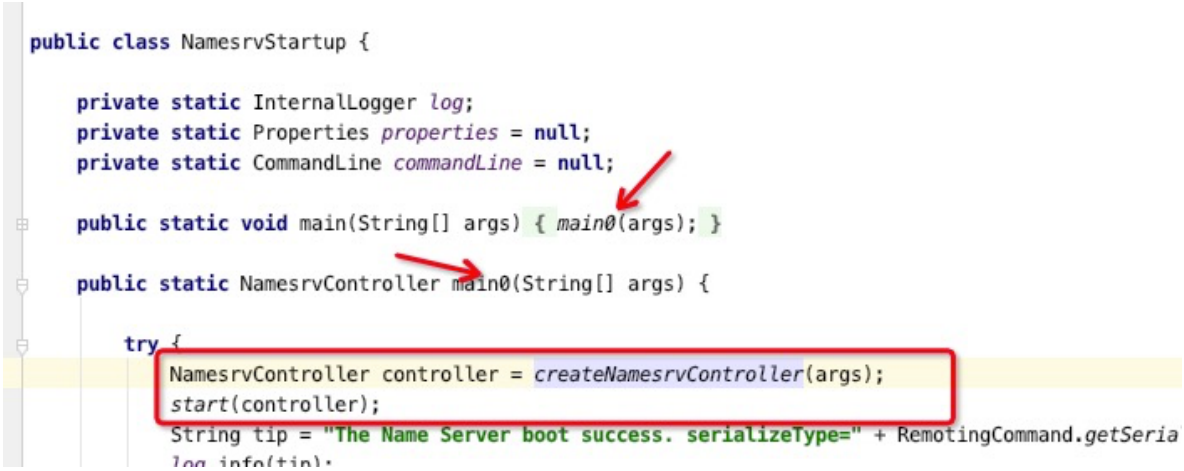
读书笔记 5 NameServer 源码解析

源码结构图

一个 NameServer 的启动过程：



```
public class NamesrvStartup {

    private static InternalLogger log;
    private static Properties properties = null;
    private static CommandLine commandLine = null;

    public static void main(String[] args) { main0(args); }

    public static NamesrvController main0(String[] args) {

        try {
            NamesrvController controller = createNamesrvController(args);
            start(controller);
            String tip = "The Name Server boot success. serializeType=" + RemotingCommand.getSeria
            log.info(tip);
```

```java
public static NamesrvController createNamesrvController(String[] args) throws IOException, JoranException {
    System.setProperty(RemotingCommand.REMOTING_VERSION_KEY, Integer.toString(MQVersion.CURRENT_VERSION));
    //PackageConflictDetect.detectFastjson();

    Options options = ServerUtil.buildCommandlineOptions(new Options());
    commandLine = ServerUtil.parseCmdLine( appName: "mqnamesrv", args, buildCommandlineOptions(options), new PosixParser());
    if (null == commandLine) {
        System.exit( status: -1);
        return null;
    }

    final NamesrvConfig namesrvConfig = new NamesrvConfig();
    final NettyServerConfig nettyServerConfig = new NettyServerConfig();
    nettyServerConfig.setListenPort(9876);
    if (commandLine.hasOption('c')) {
        String file = commandLine.getOptionValue('c');
        if (file != null) {
            InputStream in = new BufferedInputStream(new FileInputStream(file));
            properties = new Properties();
            properties.load(in);
            MixAll.properties2Object(properties, namesrvConfig);
            MixAll.properties2Object(properties, nettyServerConfig);

            namesrvConfig.setConfigStorePath(file);

            System.out.printf("load config properties file OK, %s%n", file);
            in.close();
        }
    }

    if (commandLine.hasOption('p')) {
        InternalLogger console = InternalLoggerFactory.getLogger(LoggerName.NAMESRV_CONSOLE_NAME);
        MixAll.printObjectProperties(console, namesrvConfig);
        MixAll.printObjectProperties(console, nettyServerConfig);
        System.exit( status: 0);
    }

    MixAll.properties2Object(ServerUtil.commandLine2Properties(commandLine), namesrvConfig);
```

主要功能，解析命令行参数
&
初始化 controller

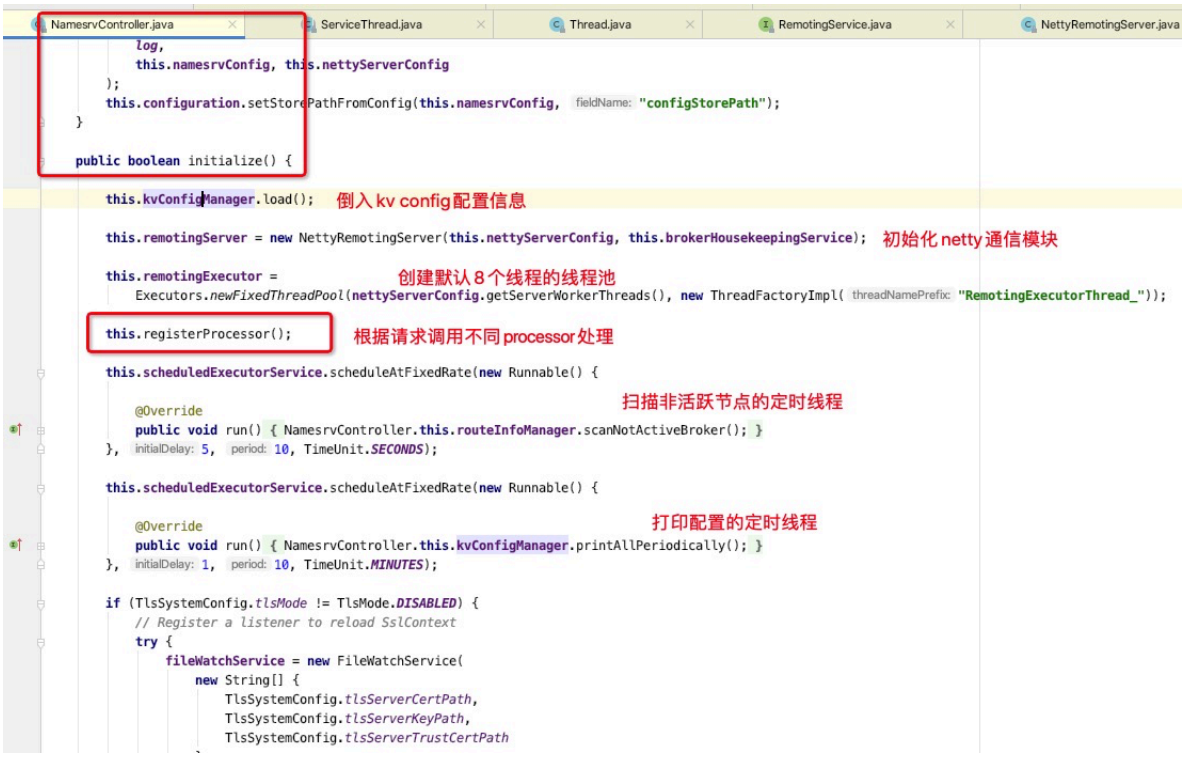
命令行指定配置文件位置

打印所有配置项的值

```java
public static NamesrvController start(final NamesrvController controller) throws Exception {

    if (null == controller) {
        throw new IllegalArgumentException("NamesrvController is null");
    }

    boolean initResult = controller.initialize();
    if (!initResult) {
        controller.shutdown();
        System.exit( status: -3);
    }

    Runtime.getRuntime().addShutdownHook(new ShutdownHookThread(log, new Callable<Void>() {
        @Override
        public Void call() throws Exception {
            controller.shutdown();
            return null;
        }
    }));

    controller.start();

    return controller;
}
```

初始化

开始调用服务




```
private void registerProcessor() {
    if (namesrvConfig.isClusterTest()) {

        this.remotingServer.registerDefaultProcessor(new ClusterTestRequestProcessor( namesrvController: this, namesrvConfig.getProductEnvName()),
            this.remotingExecutor);
    } else {

        this.remotingServer.registerDefaultProcessor(new DefaultRequestProcessor( namesrvController: this), this.remotingExecutor);
    }
}
```

```
@Override
public void registerDefaultProcessor(NettyRequestProcessor processor, ExecutorService executor) {
    this.defaultRequestProcessor = new Pair<NettyRequestProcessor, ExecutorService>(processor, executor);
}

@Override
```

```
25  public interface NettyRequestProcessor {
26      RemotingCommand processRequest(ChannelHandlerContext ctx, RemotingCommand request)
27          throws Exception;
28
29      boolean rejectRequest();
30
31  }
```

```java
public class DefaultRequestProcessor extends AsyncNettyRequestProcessor implements NettyRequestProcessor {
    private static InternalLogger log = InternalLoggerFactory.getLogger(LoggerName.NAMESRV_LOGGER_NAME);

    protected final NamesrvController namesrvController;

    public DefaultRequestProcessor(NamesrvController namesrvController) { this.namesrvController = namesrvController; }

    @Override
    public RemotingCommand processRequest(ChannelHandlerContext ctx,
        RemotingCommand request) throws RemotingCommandException {

        if (ctx != null) {
            log.debug( var1: "receive request, {} {} {}",
                request.getCode(),
                RemotingHelper.parseChannelRemoteAddr(ctx.channel()),
                request);
        }

        switch (request.getCode()) {
            case RequestCode.PUT_KV_CONFIG:
                return this.putKVConfig(ctx, request);
            case RequestCode.GET_KV_CONFIG:
```

例如这里，实现了 NettyRequestProcessor, 上面初始化的时候
生成了一个类型的实例，最后走到类似的逻辑，主体是一个 switch
根据 RequestCode 取调不同的函数实现

RocketMq 集群存储状态：

NameServer 协调保存各种数据，通过 RouteInfoManager 实现

```java
    public void deleteTopic(final String topic) {
        try {
            try {
                this.lock.writeLock().lockInterruptibly();
                this.topicQueueTable.remove(topic);
            } finally {
                this.lock.writeLock().unlock();
            }
        } catch (Exception e) {
            log.error("deleteTopic Exception", e);
        }
    }

    public byte[] getAllTopicList() {
        TopicList topicList = new TopicList();
        try {
            try {
                this.lock.readLock().lockInterruptibly();
                topicList.getTopicList().addAll(this.topicQueueTable.keySet());
            } finally {
                this.lock.readLock().unlock();
            }
        } catch (Exception e) {
            log.error("getAllTopicList Exception", e);
        }

        return topicList.encode();
    }

    public RegisterBrokerResult registerBroker(
```

可重入的读写锁