**[读懂tomcat6 之Catalina.sh --注释版](http://zhanghonglun.iteye.com/blog/429711)**

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**粗体字部分是我的注释，可能对那些不太熟悉Shell 的人有点帮助吧，等你读懂了，再去配置心里就有底了。**

#!/bin/sh

#......

# limitations under the License.

#......

# $Id: catalina.sh 750920 2009-03-06 14:43:19Z markt $  
# -----------------------------------------------------------------------------  
# OS specific support.  $var \_must\_ be set to either true or false.  
cygwin=false  
os400=false  
darwin=false  
**#uname 命令用于显示操作系统名称， `...` 命令替换，将反引号中的字符串做为命令来执行**   
case "`uname`" in  
CYGWIN\*) cygwin=true;;  
OS400\*) os400=true;;  
Darwin\*) darwin=true;;  
#case 结束  
esac

# resolve links - $0 may be a softlink  
**# $0 程序的执行名，可能是./catalish.sh**   
PRG="$0"

**#文件测试，-h ,表示为符号链接，即软连接**   
while [ -h "$PRG" ]; do  
  ls=`ls -ld "$PRG"`  
  **#expr 模式匹配，group 用法，返回匹配的内容，抽取最后一个软连接-> 所指向的文件，即\*-> 后面的部分，也就是要执行的文件了**   
  link=`expr "$ls" : '.\*-> \(.\*\)$'`  
**#>/dev/null 输出到空设备,一般Expr 模式匹配，返回匹配到的个数，判断link 变量中是否有‘/’**   
  if expr "$link" : '/.\*' > /dev/null; then  
    PRG="$link"  
  else  
    PRG=`dirname "$PRG"`/"$link"  
  fi  
done

# Get standard environment variables  
**# dirname 找出文件所在文件夹，可能是.**PRGDIR=`dirname "$PRG"`

# Only set CATALINA\_HOME if not already set  
**#-z 字符串为空，执行命令替换，设定Catalina\_home**   
[ -z "$CATALINA\_HOME" ] && CATALINA\_HOME=`cd "$PRGDIR/.." ; pwd`

**#-r,文件属性，存在并且可读**   
if [ -r "$CATALINA\_BASE"/bin/setenv.sh ]; then  
  . "$CATALINA\_BASE"/bin/setenv.sh  
elif [ -r "$CATALINA\_HOME"/bin/setenv.sh ]; then  
  . "$CATALINA\_HOME"/bin/setenv.sh  
fi

# For Cygwin, ensure paths are in UNIX format before anything is touched  
if $cygwin; then  
  [ -n "$JAVA\_HOME" ] && JAVA\_HOME=`cygpath --unix "$JAVA\_HOME"`  
  [ -n "$JRE\_HOME" ] && JRE\_HOME=`cygpath --unix "$JRE\_HOME"`  
  [ -n "$CATALINA\_HOME" ] && CATALINA\_HOME=`cygpath --unix "$CATALINA\_HOME"`  
  [ -n "$CATALINA\_BASE" ] && CATALINA\_BASE=`cygpath --unix "$CATALINA\_BASE"`  
  [ -n "$CLASSPATH" ] && CLASSPATH=`cygpath --path --unix "$CLASSPATH"`  
  [ -n "$JSSE\_HOME" ] && JSSE\_HOME=`cygpath --absolute --unix "$JSSE\_HOME"`  
fi

# For OS400  
if $os400; then  
  # Set job priority to standard for interactive (interactive - 6) by using  
  # the interactive priority - 6, the helper threads that respond to requests  
  # will be running at the same priority as interactive jobs.  
  COMMAND='chgjob job('$JOBNAME') runpty(6)'  
  system $COMMAND

  # Enable multi threading  
  export QIBM\_MULTI\_THREADED=Y  
fi

# Get standard Java environment variables  
if $os400; then  
  # -r will Only work on the os400 if the files are:  
  # 1. owned by the user  
  # 2. owned by the PRIMARY group of the user  
  # this will not work if the user belongs in secondary groups  
  BASEDIR="$CATALINA\_HOME"  
  . "$CATALINA\_HOME"/bin/setclasspath.sh   
else  
**#设定Classpath**   
  if [ -r "$CATALINA\_HOME"/bin/setclasspath.sh ]; then  
    BASEDIR="$CATALINA\_HOME"  
    . "$CATALINA\_HOME"/bin/setclasspath.sh  
  else  
    echo "Cannot find $CATALINA\_HOME/bin/setclasspath.sh"  
    echo "This file is needed to run this program"  
    exit 1  
  fi  
fi

# Add on extra jar files to CLASSPATH  
if [ -n "$JSSE\_HOME" ]; then  
  CLASSPATH="$CLASSPATH":"$JSSE\_HOME"/lib/jcert.jar:"$JSSE\_HOME"/lib/jnet.jar:"$JSSE\_HOME"/lib/jsse.jar  
fi  
CLASSPATH="$CLASSPATH":"$CATALINA\_HOME"/bin/bootstrap.jar

**#-z,字符串为空，设定Base = home**   
if [ -z "$CATALINA\_BASE" ] ; then  
  CATALINA\_BASE="$CATALINA\_HOME"  
fi

**#按默认值设定Temp 文件夹**   
if [ -z "$CATALINA\_TMPDIR" ] ; then  
  # Define the java.io.tmpdir to use for Catalina  
  CATALINA\_TMPDIR="$CATALINA\_BASE"/temp  
fi

# Bugzilla 37848: When no TTY is available, don't output to console  
have\_tty=0  
if [ "`tty`" != "not a tty" ]; then  
    have\_tty=1  
fi

# For Cygwin, switch paths to Windows format before running java  
if $cygwin; then  
  JAVA\_HOME=`cygpath --absolute --windows "$JAVA\_HOME"`  
  JRE\_HOME=`cygpath --absolute --windows "$JRE\_HOME"`  
  CATALINA\_HOME=`cygpath --absolute --windows "$CATALINA\_HOME"`  
  CATALINA\_BASE=`cygpath --absolute --windows "$CATALINA\_BASE"`  
  CATALINA\_TMPDIR=`cygpath --absolute --windows "$CATALINA\_TMPDIR"`  
  CLASSPATH=`cygpath --path --windows "$CLASSPATH"`  
  [ -n "$JSSE\_HOME" ] && JSSE\_HOME=`cygpath --absolute --windows "$JSSE\_HOME"`  
  JAVA\_ENDORSED\_DIRS=`cygpath --path --windows "$JAVA\_ENDORSED\_DIRS"`  
fi

# Set juli LogManager config file if it is present and an override has not been issued  
**#指定默认的Log 配置**   
if [ -z "$LOGGING\_CONFIG" ]; then  
  if [ -r "$CATALINA\_BASE"/conf/logging.properties ]; then  
    LOGGING\_CONFIG="-Djava.util.logging.config.file=$CATALINA\_BASE/conf/logging.properties"  
  else  
    # Bugzilla 45585  
    LOGGING\_CONFIG="-Dnop"  
  fi  
fi

**#设定默认的日志管理器**   
if [ -z "$LOGGING\_MANAGER" ]; then  
  JAVA\_OPTS="$JAVA\_OPTS -Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager"  
else   
  JAVA\_OPTS="$JAVA\_OPTS $LOGGING\_MANAGER"  
fi

# ----- Execute The Requested Command -----------------------------------------

# Bugzilla 37848: only output this if we have a TTY  
if [ $have\_tty -eq 1 ]; then  
  echo "Using CATALINA\_BASE:   $CATALINA\_BASE"  
  echo "Using CATALINA\_HOME:   $CATALINA\_HOME"  
  echo "Using CATALINA\_TMPDIR: $CATALINA\_TMPDIR"  
  if [ "$1" = "debug" -o "$1" = "javac" ] ; then  
    echo "Using JAVA\_HOME:       $JAVA\_HOME"  
  else  
    echo "Using JRE\_HOME:       $JRE\_HOME"  
  fi  
fi

**#接收参数**   
if [ "$1" = "jpda" ] ; then  
  if [ -z "$JPDA\_TRANSPORT" ]; then  
    JPDA\_TRANSPORT="dt\_socket"  
  fi  
  if [ -z "$JPDA\_ADDRESS" ]; then  
    JPDA\_ADDRESS="8000"  
  fi  
  if [ -z "$JPDA\_SUSPEND" ]; then  
    JPDA\_SUSPEND="n"  
  fi  
  if [ -z "$JPDA\_OPTS" ]; then  
    JPDA\_OPTS="-agentlib:jdwp=transport=$JPDA\_TRANSPORT,address=$JPDA\_ADDRESS,server=y,suspend=$JPDA\_SUSPEND"  
  fi  
  CATALINA\_OPTS="$CATALINA\_OPTS $JPDA\_OPTS"  
**#shift 参数提升，即$2 变$1...**   
  shift  
fi

if [ "$1" = "debug" ] ; then  
  if $os400; then  
    echo "Debug command not available on OS400"  
    exit 1  
  else  
    shift  
    if [ "$1" = "-security" ] ; then  
      echo "Using Security Manager"  
      shift  
      exec "$\_RUNJDB" "$LOGGING\_CONFIG" $JAVA\_OPTS $CATALINA\_OPTS \  
        -Djava.endorsed.dirs="$JAVA\_ENDORSED\_DIRS" -classpath "$CLASSPATH" \  
        -sourcepath "$CATALINA\_HOME"/../../java \  
        -Djava.security.manager \  
        -Djava.security.policy=="$CATALINA\_BASE"/conf/catalina.policy \  
        -Dcatalina.base="$CATALINA\_BASE" \  
        -Dcatalina.home="$CATALINA\_HOME" \  
        -Djava.io.tmpdir="$CATALINA\_TMPDIR" \  
        org.apache.catalina.startup.Bootstrap "$@" start  
    else  
      exec "$\_RUNJDB" "$LOGGING\_CONFIG" $JAVA\_OPTS $CATALINA\_OPTS \  
        -Djava.endorsed.dirs="$JAVA\_ENDORSED\_DIRS" -classpath "$CLASSPATH" \  
        -sourcepath "$CATALINA\_HOME"/../../java \  
        -Dcatalina.base="$CATALINA\_BASE" \  
        -Dcatalina.home="$CATALINA\_HOME" \  
        -Djava.io.tmpdir="$CATALINA\_TMPDIR" \  
        org.apache.catalina.startup.Bootstrap "$@" start  
    fi  
  fi

elif [ "$1" = "run" ]; then

  shift  
  if [ "$1" = "-security" ] ; then  
    echo "Using Security Manager"  
    shift  
    exec "$\_RUNJAVA" "$LOGGING\_CONFIG" $JAVA\_OPTS $CATALINA\_OPTS \  
      -Djava.endorsed.dirs="$JAVA\_ENDORSED\_DIRS" -classpath "$CLASSPATH" \  
      -Djava.security.manager \  
      -Djava.security.policy=="$CATALINA\_BASE"/conf/catalina.policy \  
      -Dcatalina.base="$CATALINA\_BASE" \  
      -Dcatalina.home="$CATALINA\_HOME" \  
      -Djava.io.tmpdir="$CATALINA\_TMPDIR" \  
      org.apache.catalina.startup.Bootstrap "$@" start  
  else  
**#exec,执行指定的程序，$@ 代表所有的命令行参数**   
    exec "$\_RUNJAVA" "$LOGGING\_CONFIG" $JAVA\_OPTS $CATALINA\_OPTS \  
      -Djava.endorsed.dirs="$JAVA\_ENDORSED\_DIRS" -classpath "$CLASSPATH" \  
      -Dcatalina.base="$CATALINA\_BASE" \  
      -Dcatalina.home="$CATALINA\_HOME" \  
      -Djava.io.tmpdir="$CATALINA\_TMPDIR" \  
      org.apache.catalina.startup.Bootstrap "$@" start  
  fi

elif [ "$1" = "start" ] ; then

  shift  
  touch "$CATALINA\_BASE"/logs/catalina.out  
  if [ "$1" = "-security" ] ; then  
    echo "Using Security Manager"  
    shift  
    "$\_RUNJAVA" "$LOGGING\_CONFIG" $JAVA\_OPTS $CATALINA\_OPTS \  
      -Djava.endorsed.dirs="$JAVA\_ENDORSED\_DIRS" -classpath "$CLASSPATH" \  
      -Djava.security.manager \  
      -Djava.security.policy=="$CATALINA\_BASE"/conf/catalina.policy \  
      -Dcatalina.base="$CATALINA\_BASE" \  
      -Dcatalina.home="$CATALINA\_HOME" \  
      -Djava.io.tmpdir="$CATALINA\_TMPDIR" \  
      org.apache.catalina.startup.Bootstrap "$@" start \  
      >> "$CATALINA\_BASE"/logs/catalina.out 2>&1 &  
**#2>&1，将错误信息合并到标准输出**   
      if [ ! -z "$CATALINA\_PID" ]; then  
        echo $! > $CATALINA\_PID  
      fi  
  else  
    "$\_RUNJAVA" "$LOGGING\_CONFIG" $JAVA\_OPTS $CATALINA\_OPTS \  
      -Djava.endorsed.dirs="$JAVA\_ENDORSED\_DIRS" -classpath "$CLASSPATH" \  
      -Dcatalina.base="$CATALINA\_BASE" \  
      -Dcatalina.home="$CATALINA\_HOME" \  
      -Djava.io.tmpdir="$CATALINA\_TMPDIR" \  
      org.apache.catalina.startup.Bootstrap "$@" start \  
      >> "$CATALINA\_BASE"/logs/catalina.out 2>&1 &

      if [ ! -z "$CATALINA\_PID" ]; then  
**#将PID 记录到一个文件中，$$ 正在执行的PID,$! 后台运行的最后一个PID 值**   
        echo $! > $CATALINA\_PID  
      fi  
  fi

elif [ "$1" = "stop" ] ; then

  shift  
  FORCE=0  
  if [ "$1" = "-force" ]; then  
    shift  
    FORCE=1  
  fi

  "$\_RUNJAVA" $JAVA\_OPTS \  
    -Djava.endorsed.dirs="$JAVA\_ENDORSED\_DIRS" -classpath "$CLASSPATH" \  
    -Dcatalina.base="$CATALINA\_BASE" \  
    -Dcatalina.home="$CATALINA\_HOME" \  
    -Djava.io.tmpdir="$CATALINA\_TMPDIR" \  
    org.apache.catalina.startup.Bootstrap "$@" stop

  if [ $FORCE -eq 1 ]; then  
    if [ ! -z "$CATALINA\_PID" ]; then  
       echo "Killing: `cat $CATALINA\_PID`"  
       kill -9 `cat $CATALINA\_PID`  
    else  
       echo "Kill failed: \$CATALINA\_PID not set"  
    fi  
  fi

elif [ "$1" = "version" ] ; then

    "$\_RUNJAVA"   \  
      -classpath "$CATALINA\_HOME/lib/catalina.jar" \  
      org.apache.catalina.util.ServerInfo

else  
**#打印一堆的帮助和错误信息**   
  echo "Usage: catalina.sh ( commands ... )"  
  echo "commands:"  
  if $os400; then  
    echo "  debug             Start Catalina in a debugger (not available on OS400)"  
    echo "  debug -security   Debug Catalina with a security manager (not available on OS400)"  
  else  
    echo "  debug             Start Catalina in a debugger"  
    echo "  debug -security   Debug Catalina with a security manager"  
  fi  
  echo "  jpda start        Start Catalina under JPDA debugger"  
  echo "  run               Start Catalina in the current window"  
  echo "  run -security     Start in the current window with security manager"  
  echo "  start             Start Catalina in a separate window"  
  echo "  start -security   Start in a separate window with security manager"  
  echo "  stop              Stop Catalina"  
  echo "  stop -force       Stop Catalina (followed by kill -KILL)"  
  echo "  version           What version of tomcat are you running?"  
  exit 1

fi