




IBM Software Group

IBM Tivoli Workload Scheduler

TWSd: Customizing and Tuning Tivoli Workload Scheduler Local and Global Options

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ON DEMAND BUSINESS™

Abstract

Session will discuss:

- Localopts file attributes
- Globalopts file attributes
- Global options attributes
- Optman Command

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Attributes

Processing and monitoring of jobs are controlled by parameters in the workstation localopts file and TWS database global options.

- Localopts file attributes – Flat text file with attributes that apply only to the local workstation which are edited via an editor.
- Globalopts file attributes – (Used by pre 8.3 versions and is no longer used for setting global options) Flat text file stores a copy of three global options attributes stored in the TWS database. Edited via an editor, normally no editing is required.
- Global options attributes – Attributes in the TWS database used to define the global operation of TWS. These attributes are edited via the optman command.

Note: These parameters are described in the *Tivoli® Workload Scheduler: Administration Guide*.

- The text “**Tw**” (tweak) in this document will be used to identify attributes that may be tweaked.



Globalopts File Attributes

- Globalopts file consists of a copy of three TWS database global options attributes. The attributes are not case-sensitive, and spaces between attribute and value are ignored except for value for Company attribute.

Company = Company's name, up to 40 characters. If the name contains spaces, enclose the entire name in quotation marks ("").

Master = Name of master domain manager. Attribute is set during the installation of TWS and used for report production.

Note: Must be edited only when the master domain manager has changed. A backup of the globalopts should be created prior to editing.

Start = Start time of the TWS processing day in 24 hour format, *hhmm* (**0000-2359**).

Note: A globalopts file template is located in TWA_home/TWS/config directory.



Localopts Attributes

- Localopts file is unique to each workstation.
- Localopts attributes are not case-sensitive, and spaces between words in attribute names are ignored. The following attribute names are valid for attribute **“is remote cli”**:

is remote cli
Is Remote CLI
isremotekli
ISREMOTECCLI
isRemoteCLI

- Related attributes are grouped together in the localopts file.
- Changes to localopts take effect once netman has been stopped and restarted.
- Localopts default template is located in TWA_home/TWS/config directory.



Localopts File Attributes – Grouped Sample

```

#-----
# General attributes of this workstation:
#
thiscpu=gman86mdm
merge stdlists =yes
..
#-----
# The attributes of this workstation for the batchman process:
#
bm check file =120
bm check status =300
..
#-----
# The attributes of this workstation for the jobman process:
#
jm job table size =1024
jm look =300
..
#-----
# The attributes of this workstation for custom formats
#
date format =1 # The possible values are 0-yyyy/mm/dd, 1-mm/dd/yyyy
# 2-dd/mm/yyyy, 3-NLS.
composer prompt =-
..
#-----
# The attributes of this workstation for the customization of I/O on mailbox files
#
sync level =low
#-----
# The attributes of this workstation for networking
#
tcp timeout =300
tcp connection timeout =15
#-----
# General Secure options
#
SSL auth mode =caonly
SSL auth string =tws
#-----
# OpenSSL option, TWS uses them if "SSL Fips enabled" is "no" ( the default )
#
SSL key ="/home/m86/TWA/TWS/ssl/TWSPriVateKeyFile.pem"
SSL certificate ="/home/m86/TWA/TWS/ssl/TWSPublicKeyFile.pem"
..
#-----
# GSKIT options, TWS uses them if "SSL Fips enabled" is "yes"
#
SSL keystore file = "/home/m86/TWA/TWS/ssl/TWSKeyRing.kdb"
SSL certificate keystore label = "IBM TWS 8.6 workstation"
..
#-----
# Application server check attributes
Appserver check interval = 5 #minutes
Appserver auto restart = yes #yes/no
..
#-----
# The TWS instance has been installed as REMOTE CLI
IS REMOTE CLI = no # yes for a REMOTE CLI installation,
# no otherwise
#-----
# Attributes for CLI connections
#
HOST = 127.0.0.1 # Master hostname used when attempting a connection.
PROTOCOL = https # Protocol used to establish a connection with the Master.
PORT = 38616 # Protocol port
..
#-----
# Event Management parameters
#
CAN BE EVENT PROCESSOR = yes # yes for MDM and BKM, no otherwise
#-----
# The directory where the book file is created by the TWS DLA
CCMDB BOOK PATH = "/home/m86/TWA/TWS/CCMDB"

```

Localopts File Attributes

- General workstation attributes :

thiscpu = *workstation* – Name of workstation. Default is **<workstation name specified at installation>**.

Note: When a switch is made between the master domain manager and a backup domain manager, using the switchmgr command, the Symphony header value for this cpu is overwritten by the **thiscpu** value in the localopts file.

merge stdlists = *yes/no* - Enable or disable sending of all of the TWS processes, except Netman, console messages to a single standard list file or to separate standard list files. Default is **yes**.

stdlist width = *columns* - Maximum width of the Tivoli Workload Scheduler console messages. Range can be **1** to **255**. Lines are wrapped at or before the specified column. Specify a negative number or zero to ignore line width. Default is **0** columns.

syslog local = *facility* – (UNIX and Linux systems only) Enables (0-7) or disables (-1) TWS system logging via corresponding local facility (0 – 7) for its messages to another local session window. Default is **-1**.

restricted stdlists = *no/yes* – (UNIX only workstations) Used to implement a higher degree of security to create, modify or read file in the stdlist directory and to its subdirectories. Default is **no**.

Tw: Enable if higher security is necessary.



Localopts File Attributes

- Workstation attributes for batchman process:
 - bm check file** = *seconds* - Seconds Batchman waits before checking for the existence of a file that is used as a dependency. Default is **120**.
 - bm check status** = *seconds* - Seconds Batchman waits between checking the status of an internetwork dependency. Default is **300** seconds.
 - Tw**: Set to a large value if not using internetwork dependencies.
 - bm look** = *seconds* - Minimum number of seconds Batchman waits before scanning and updating its production control file. Default is **15** seconds.
 - Tw**: Set lower for fast response time but will increase CPU usage.
 - bm read** = *seconds* - Seconds Batchman waits for a message in the Intercom.msg message file. Default is **10** seconds.
 - Tw**: Set lower for fast response time but will increase CPU usage.
 - bm stats** = *off/on* - Specify if batchman sends its startup and shutdown statistics to its standard list file. Default is **off**.



Localopts File Attributes

- Continued workstation attributes for batchman process:

bm verbose = *off/on*— Specify if Batchman sends all job status messages (debug information) to its TWSMERGE file. Default is **off**.

Note: Previously used to store debug information in TWSMEGE logs but replaced by xtrace which gathers more detailed information.

bm check until = *seconds* - Maximum number of seconds Batchman waits before reporting the expiration of an Until time for job or job stream. Default is **300** seconds.

Tw: Setting lower provides quicker status for missed latest start times but increases batchman activity.

bm check deadline = *seconds* - Minimum number of seconds Batchman waits before checking if a job has missed its deadline. Value of “**0**” disables checking of deadlines. Default value is **0**.

Tw: Should be implemented (non-zero value) only on master or backup master, since checks are performed for all jobs and job streams in the Symphony file, regardless of the workstation where the jobs and job streams are defined. Will be inefficient for all other agents.

bm late every = *minutes* - Maximum number of minutes that elapse before TWS skips a job with both **every** and **at** dependency that does not start at its expected start time. Default is **<not defined>**.



Localopts File Attributes

- Workstation attributes for the jobman process:

jm job table size = *entries* – Maximum number of concurrent jobs that may be active. Default is **1024** entries.

Tw: Increase value if there will be more than 1024 concurrent active jobs on the local workstation.

jm look = *seconds* - Minimum number of seconds Jobman waits before looking for completed jobs and performing general job management tasks. Default is **300** seconds.

Tw: Set lower (as low as 1), for quicker updates on job statuses but will consume more CPU resources since jobman process runs as root.

jm nice = *value* – (UNIX and Linux systems only) **Nice** value applied to **root only** user jobs to change their priority. Default is **0**.

Note: Non-root jobs inherit the nice value of the Jobman process. The UNIX command **ps -el |grep JOBMAN** displays jobman's "nice" value (0).



Localopts File Attributes

- Continued workstation attributes for the jobman process:
 - jm promoted nice** = *<critical job priority>* - (UNIX and Linux systems only)
Used in workload service assurance to assign a priority value to a critical job or predecessor that needs to be promoted so that it can start at their critical start time Default is **-1**.

Note: **Promotion process is effective with negative values only.** The system will default to **-1**, if value is set to a positive value, and log a warning message every time Jobman starts.

If a critical job runs as root and is promoted the values for **jm nice** and **jm promoted nice** are added.

Defining an exceedingly high number of jobs as mission critical and specifying the highest priority value for **jm promoted nice** may overload the operating system, negatively impacting the overall performance of the workstation.



Localopts File Attributes

- Continued Workstation attributes for the jobman process:
 - jm promoted priority** = *<critical job priority>* - (Windows only systems) Used in workload service assurance to assign a priority value to a critical job or predecessor that needs to be promoted so that it can start at their critical start time. Default is **AboveNormal**.

High
AboveNormal
Normal
BelowNormal
Low or Idle

NOTE: If set to a lower priority value than given to noncritical jobs, no warning is given and specified value will be used.



Localopts File Attributes

- Continued workstation attributes for the jobman process:

jm no root = *no/yes* – (UNIX and Linux systems only) **Yes** prevents Jobman from launching **root** jobs. **No** allows Jobman to launch **root** jobs. Default is **no**.

Note: Setting of yes will prevent “all checking” for the existence of files (“opens” dependency), since check is performed by a root user process.

jm read = *seconds* - Maximum number of seconds Jobman waits for a message in the Courier.msg message file. Default is **10** seconds.

Tw: Could be lowered (as low as 1), but will consume more CPU resources since jobman process runs as root.



Localopts File Attributes

- Workstation attributes for the mailman process:

autostart monman = *yes/no* - Used in event rule management to disable or enable the auto restart of the monitoring engine when the next production plan is activated. Default is **yes**.

mm cache mailbox = *yes/no* – Enables or disables Mailman to cache incoming mailbox messages to memory. Only messages considered essential for network consistency are cached. Default is **yes**.

mm cache size = *bytes* – Maximum cache value. Default is **512**.

Tw: Increase to larger value than **512**. May be set as high as 32767 even though guide says maximum is **512**.



Localopts File Attributes

- Workstation attributes for the mailman process:
 - mm resolve master** = *yes/no* – (Applies to extended agents with host value of \$MASTER or \$MANAGER variable in CPU definition). Used to define when value \$MASTER or \$MANAGER in host field of an extended agents CPU definition is resolved. This attributes facilitates the switching of the host of an extended agents host when the switchmgr command is executed. Default is **yes**.

If set to **yes**, the \$MASTER or \$MANAGER variable, in “host” field of an extended agents CPU definition, is resolved at the beginning of the production day and the host of any extended agent is switched after the next JnextPlan (long-term switch) to the current Master.

If set to **no**, the \$MASTER variable is not resolved at JnextPlan and the host of any extended agent can be switched after a conman **switchmgr** command (short-term and long-term switch).

Tw: Set to **no** and define extended agents with host value of **\$MASTER** or **\$MANAGER** to facilitate switching of extended agents between master and backup master. The **mm resolve master** value should match for both master domain manager and backup domain manager.



Localopts File Attributes

- Continued workstation attributes for the mailman process:
 - mm read** = *minutes* - Maximum number of seconds Mailman waits for a connection with a remote workstation. Default is **15** seconds.
Tw: Could be set to a lower value (as low "1") for fast response times at the expense of CPU utilization.
 - mm response** = *seconds* - Maximum number of seconds Mailman waits for a response before reporting that a workstation is not responding. Minimum wait time for a response is **90** seconds. Default is **600** seconds.
Tw: Could be set to a lower value (≥ 90) to identify a non-responding workstation sooner.
 - mm unlink** = *seconds* - Maximum number of seconds Mailman waits before unlinking from a workstation that is not responding. Default is **960** seconds.
Tw: If lowered, verify that value is larger than **mm response** value.
 - mm retrylink** = *seconds* - Maximum number of seconds Mailman waits after unlinking from a non-responding workstation before it attempts to link to the workstation again. Default is **600** seconds.
Tw: Set to lower value if you want link retry to happen sooner than **600** seconds.



Localopts File Attributes

- Workstation attributes for the netman process

nm mortal = *no/yes* – Specify if Netman stops or continues running when all of its child processes have stopped i.e. when Batchman dies. Default is **no**.

nm port = *port number* - TCP port number used by Netman to respond on the local computer. Value must match the TCP/IP port in workstation definition. Default value is **<supplied during product installation>**.

nm read = *seconds* - Maximum number of seconds Netman waits for a connection request before checking its message queue for **stop** and **start** commands. Default is **10** seconds.

nm retry = *seconds* - Maximum number of seconds Netman waits before retrying a connection that failed. Default is **800** seconds.

Note: Setting lower values for **nm read** or **nm retry** does not improve overall performance..



Localopts File Attributes

- Workstation attributes for the writer process:

wr read = *seconds* - Number of seconds Writer process waits for an incoming message before checking for a termination request from Netman. Default is **600** seconds.

wr unlink = *seconds* - Number of seconds the Writer process waits before exiting if no incoming messages are received. The minimum is **120** seconds. Default is **180** seconds.

Note: Setting lower values for **wr read** or **wr unlink** does not improve overall performance.

wr enable compression = *no/yes* – (Fault-tolerant agents only). Specify if fault-tolerant agent can receive the Symphony file in compressed form from the master domain manager. Default is **no**.

Tw: Set to **yes** if the network bandwidth is limited, otherwise, the CPU time required to compress file outweighs the benefits of compressing file.



Localopts File Attributes

- Optional workstation attributes for remote database files (Apply to versions prior to 8.3).

mozart directory = *mozart_share* - Defines the name of the master domain managers shared mozart directory. The default is *TWA_home/mozart*.

parameters directory = *parms_share* - Defines the name of the master domain managers shared *TWA_home* directory. The default is **<none>**.

unison network directory = *unison_share* - Defines the name of the Unison network directory. The default is **<TWA_home>/../unison/network**.



Localopts File Attributes

- Workstation attributes for customizing formats

date format = *integer* - Value for desired date format.

0 corresponds to *yy/mm/dd*

1 corresponds to *mm/dd/yy*

2 corresponds to *dd/mm/yy*

3 indicates usage of Native Language Support variables

Default is **1**.

composer prompt = *key* - Prompt for the composer command line. The prompt can be of up to 10 characters in length. Default is dash (-).

conman prompt = *key* - Prompt for the conman command line. The prompt can be of up to 8 characters in length. The default is percent (%).

switch sym prompt = *key* - Prompt for the conman command line after selecting a different Symphony file with the **setsym** command. The maximum length is 8 characters. Default is **n%**.



Localopts File Attributes

- Workstation attributes for the customization of I/O on mailbox files
 - sync level** = *low/medium/high* – (UNIX or Linux systems only) Rate at which TWS synchronizes information written to disk and all mailbox agents.
 - low** – Managed by operating system, by retaining messages in memory rather than flushing them to disk after every write. Most efficient but least fault tolerant.
 - medium** – Flush updates to disk after a transaction has completed. Average performance and fault tolerance.
 - high** – Flush updates to disk every time data is entered. Least efficient but most fault tolerant.
 - Default is **low**.
 - Tw**: Change if more fault tolerance is preferred.
- Workstation attributes for networking
 - tcp timeout** = *seconds* -. Maximum number of seconds to wait for completion of requests, such as start, stop, link, etc. for a connected workstation that is not responding. Default is **300** seconds.
 - tcp connection timeout** = *seconds* - Maximum number of seconds to wait to establish a connection through non-blocking socket. Default is **15** seconds.



Localopts File Attributes

- Workstation attributes for SSL - General

ssl auth mode = *caonly/string/cpu* – TWS behavior during an SSL handshake. Default is **caonly**.

caonly - Verifies that the peer certificate has been issued by a recognized CA.

string - Verifies that the Common Name (CN) of the Certificate Subject matches “**string**” specified in the **ssl auth string** option.

cpu - Verifies that the Common Name (CN) of the Certificate Subject matches the name of the workstation that requested the service.

ssl auth string = *string* - Used in conjunction with the **ssl auth mode** option when a “**string**” value is specified. The **ssl auth string** (1 - 64 characters) is used to verify certificate validity. Default string is **tws**.

ssl fips enabled = *no/yes* - Determines if TWS network is enabled for Federal Information Processing Standards (FIPS) compliance for secure communications.

Setting of **yes** requires setting values for all SSL attributes that apply for GSKit.

Setting of **no** will require setting values for all SSL attributes that apply for OpenSSL.

Default is **no** (OpenSSL).



Localopts File Attributes

- Continued Workstation attributes for SSL - General

nm ssl full port = *value* – (Applies when global option attribute **enSSLFullConnection** is set to **yes**) Port used to listen for incoming SSL connections. Set value to **0** if you plan not to use SSL. Default is **0**.

nm ssl port = *value* - (Applies when global option attribute **enSSLFullConnection** is set to **no**). Port used to listen for incoming SSL connections. Set value to **0** if not using SSL. Default is **0**.

Note: Both **nm ssl full port** and **nm ssl port** values must match the **secureaddr** attribute in the workstation CPU definition. Set SSL ports to different values if multiple TWS instances exist on same computer,



Localopts File Attributes

- Workstation attributes when using OpenSSL and **ssl fips enabled = "no"**

ssl key = *.pem - Name of the private key file. Default is *TWA_home/TWS/ssl/TWSPrivateKeyFile.pem*.

ssl certificate = *.pem – Name of the local certificate file used in SSL communication. Default is *TWA_home/TWS/ssl/TWSPublicKeyFile.pem*.

ssl key pwd = *.sth - Name of file containing the password for the stashed key. Default is *TWA_home/TWS/ssl/TWSPrivateKeyFile.sth*.

ssl ca certificate = *.crt - Name of the file containing the trusted certification authority (CA) certificates required for SSL authentication. Default is *TWA_home/TWS/ssl/TWSTrustedCA.crt*.

Note: The installed TWS SSL configuration files are distributed to all customers, thus not secure and should be replaced with your own secure SSL configuration.



Localopts File Attributes

- Continued workstation attributes when using OpenSSL and **ssl fips enabled = "no"**
ssl random seed = **.rnd* - Pseudo random number file used by OpenSSL on some operating systems. Without this file, SSL authentication might not work correctly. The default is *TWA_home/TWS/ssl/TWS.rnd*.

ssl encryption cipher = *cipher_class* – Cipher class that workstation supports during an SSL connection. Valid classes are SSLv3, TLSv1, EXP EXPORT40, MD5, LOW, MEDIUM, HIGH, NULL. Default is **SSLv3**.

Note: The following command line SSL attributes must be un-commented if configured.

cli ssl server auth = *no/yes* - Specifies if server authentication is to be used in SSL communications with the command line client. Default is **no**.

cli ssl cipher = *cipher_class* - Cipher class used when the command-line client and the server are using SSL authentication. Valid classes are SSLv3, TLSv1, EXP EXPORT40, MD5, LOW, MEDIUM, HIGH, NULL. Default is **MD5**.

cli ssl server certificate = *file_name* - File that contains the SSL certificate when the command-line client and the server use SSL authentication in their communication. There is no default.

cli ssl trusted dir = *directory_name* - Directory that contains SSL trusted certificate when the command-line client and the server are using SSL authentication in their communication. When the directory path contains blanks, enclose path in double quotation marks ("). There is no default.



Localopts File Attributes

- Workstation attributes when using GSKit and ***ssl fips enabled = "yes"***
 - ssl keystore file** = *.kdb - Name of file containing the password for the stashed key. Default is *TWA_home/TWS/ssl/TWSKeyRing.kdb*.
 - ssl certificate keystore label** = *string* - Label which identifies the certificate in the keystore when using SSL authentication. The default is **IBM TWS 8.6 workstation**.
 - ssl keystore pwd** = *.sth - Name of the keystore password file used for SSL authentication. Default is *TWA_home/TWS/ssl/TWSKeyRing.sth*.
 - cli ssl keystore file** = <file> Name of the keystore file used for SSL authentication when the command-line client is using SSL authentication to communicate with the master domain manager. Default is *TWA_home/TWS/ssl/TWSPublicKeyFile.pem*.
 - cli ssl certificate keystore label** = *string* - Label which identifies the certificate in the keystore when the command-line client is using SSL authentication to communicate with the master domain manager. Default is **IBM TWS 8.6 workstation**.
 - cli ssl keystore pwd** = <file> - Password file of the keystore used for SSL authentication when the command-line client is using SSL authentication to communicate with the master domain manager.

Localopts File Attributes

- Workstation attributes for embedded WebSphere® Application Server
 - local was** = *no/yes* - For master domain managers and backup masters connected to the TWS database. Default is **no**.
 - Tw**: Setting of **yes** improves performance of job and job stream submissions from the database.
- Workstation attributes for WAS server checks
 - appserver check interval** = *minutes* - Frequency in minutes that appservman process checks that WAS is still running. Default is **5** minutes.
 - appserver auto restart** = *yes/no* – Specifies if appservman process automatically restarts WAS if it is down. Default is **yes..**
 - appserver min restart time** = *minutes* – Minimum elapsed time that appservman process must wait between each attempt to restart WAS if down. Default is **10** minutes.



Localopts File Attributes

- The TWS instance is a command line client
 - is remote cli** = *no/yes* - Specifies if this instance of TWS is installed as a command line client. Default is **no**.
 - useropts** = *useropts_file* – (For workstations with multiple TWS instances)
Identify the location of *useropts* file used to store the connection parameters for this instance.
- Workstation attribute for Event Management parameter
 - can be event processor** = *yes/no* - Specify if workstation can act as event processing server. Set by default to **yes** for master domain managers and backup masters and set to **no** for all other agents.
 - Tw**: Set to **no** if event management is no longer used on local workstation, ie master or backup master demoted to an FTA.

Global Options

- Global options define the operation of the TWS environment and are defined at install.

Attributes have a full name and short name.

Attributes are not case-sensitive, and spaces between attribute name, “equal sign” and value are ignored.

Attribute values may be case sensitive.

Some changes may be effective immediately, while others may require a specific action, such as running JnextPlan, restarting WAS etc... Required actions for implementing changes are specified in the option descriptions.

Optman command is used to change the attribute values.



Optman command

- The optman command is used to list, show and change the TWS global options attribute values. User must have specific security permissions in the TWS Security file to use the optman command to access the global options.

For optman ls or optman show:

```
FILE NAME=GLOBALOPTS ACCESS=DISPLAY
```

For optman chg:

```
FILE NAME=GLOBALOPTS ACCESS=MODIFY
```

The database application (DB2 or Oracle) and WAS must both be active for optman command to work.

Optman ls - Displays all global option attributes stored in the TWS database.

```
optman ls
```

Optman chg – Changes the value of an attribute

```
optman chg <shortname or fullname>=<value>
```

```
optman chg enPlanAudit = 1 or optman chg pa = 1
```

Optman show – Displays the value for a specific attribute along with the attribute description and required action make changes effective.

```
optman show <attribute shortname or fullname>
```



“optman ls” output for Global Option Attributes

TECServerName / th = localhost
 TECServerPort / tp = 5529
 approachingLateOffset / al = 120
 auditHistory / ah = 180
 auditStore / as = FILE
 baseRecPrompt / bp = 1000
 bindUser / bu = m86
 carryStates / cs =
 companyName / cn = Tivoli
 deadlineOffset / do = 2
 deploymentFrequency / df = 5
 enCFInterNetworkDeps / ci = YES
 enCFResourceQuantity / rq = YES
enCarryForward / cf = ALL
 enCentSec / ts = NO
enDbAudit / da = 1
 enEmptySchedsAreSucc / es = NO
enEventDrivenWorkloadAutomation / ed = YES
 enEventProcessorHttpsProtocol / eh = YES
 enExpandedResources / er = NO
 enForecastStartTime / st = NO
 enLegacyId / li = NO
 enLegacyStartOfDayEvaluation / le = YES
 enListSecChk / sc = NO
 enLogonBatch / lb = NO
enPlanAudit / pa = 1
 enPreventStart / ps = YES
 enRetainNameOnRerunFrom / rr = NO
 enSSLFullConnection / sf = NO
 enStrEncrypt / se = NO
 enSwFaultTol / sw = NO
enTimeZone / tz = YES
 enWorkloadServiceAssurance / wa = YES
 eventProcessorEIFPort / ee = 38631
 eventProcessorEIFSSLPort / ef = 0
 extRecPrompt / xp = 1000
 ignoreCals / ic = NO
 logCleanupFrequency / lc = 5
 logHistory / lh = 10
 logmanMinMaxPolicy / lm = BOTH
 logmanSmoothPolicy / lt = -1
 longDurationThreshold / ld = 150
mailSenderName / ms = TWS
 maxLen / xl = 14
 minLen / ml = 8
 notificationTimeout / nt = 5
 promotionOffset / po = 120
smtpServerName / sn = localhost
 smtpServerPort / sp = 25
 smtpUseAuthentication / ua = NO
 smtpUseSSL / us = NO
 smtpUseTLS / tl = NO
smtpUserName / un = m86
smtpUserPassword / up = ****
startOfDay / sd = 0400
 statsHistory / sh = 10

Optman command

Optman chg command sample output

optman chg pa=1

Tivoli Workload Scheduler (UNIX)/OPTMAN 8.5.1 (20110420) Licensed Materials - Property of IBM*
5698-WSH (C) Copyright IBM Corp. 1998, 2009 All rights reserved. * Trademark of International
Business Machines Installed for user "m851".

Locale LANG set to the following: "en"

AWSJCL050I Command "chg" completed successfully.

Optman show command sample output

optman show sd

Tivoli Workload Scheduler (UNIX)/OPTMAN 8.5.1 (20110420)

Licensed Materials - Property of IBM* 5698-WSH (C) Copyright IBM Corp. 1998, 2009 All rights reserved.

* Trademark of International Business Machines Installed for user "m851".

Locale LANG set to the following: "en"

startOfDay / sd =0005

Description:

Start time of processing day. Specify the start time of the Tivoli Workload Scheduler processing day in 24 hour format: "hhmm" (0000-2359).

After changing this option, you must also change the launch time of the "final" job stream, which is usually set to one minute before the start time. For example, if the StartOfDay is set to 0600, the launch time of the "final"

job stream will be set to "0559" (05:59 AM). The default start time is "0600" (06:00 AM) . **Run "JnextPlan" to make this change effective.**



Global Options Attributes

■ General

CompanyName / cn = *<install_provided>* - Company name. Maximum length is 40 bytes. If the name contains spaces, enclose the name in quotation marks ("). Run JnextPlan to make this change effective.

Note: This attribute and value are included in the masters globalopts file.

enCentSec / ts = *no/yes* – Specify if centralized security is used. Default value is **no**. Run JnextPlan to make this change effective.

Note: Before implementing, a copy of the TWS Security file from master domain manager must be copied to each workstation.

enLegacyStartOfDayEvaluation / le *no/yes* - Specify if Legacy Start Of Day Evaluation calculation is performed for all workstations.

If **yes**, the *startOfDay* value on master domain manager is converted and set to the local time zone of each workstation across the network. Adjustment of time for local agent to master based on timezone difference.

If **no**, the *startOfDay* value on the master domain manager is applied as is on each workstation across the network. The default value is **no**. Run JnextPlan to make this change effective. Local agent time will be same as master.

startOfDay / sd = *<hhmm>* - **Start time of processing day.** Start time of the TWS processing day in 24-hour format (*0000-2359*). Default value is **0600** (6:00 a.m.). If change d, the launch time of the *final* job stream, must also be adjusted to one minute before the start time **0559** (5:59 a.m.). Run JnextPlan to make the change of *startOfDay* effective.



Global Options Attributes

■ Auditing and security

auditStore / as = *file/db/both* - Type of store used to log database audit records. Any change of this value is effective immediately. Enter one of the following:

file - To specify that a flat file in the TWA_home/TWS/audit/database directory is used to store the audit records (default value).

db - To specify that the TWS database is used to store database audit records.

both - To have database audit records logged in both the file and database.

Tw: Change to **both** to allow option of pulling of database audit data from db via sql commands.

enDbAudit / da = *0/1* – Enable (1) or disable (0) plan auditing. Default is **0**. JnextPlan must run for change implement change.

enPlanAudit / pa = *0/1* – Enable (1) or disable (0) database auditing. Default is **0**. JnextPlan must run for change implement change.

Tw: **enDbAudit** and **enPlanAudit** should be changed to **1**.

Note: **enDbAudit** and **enPlanAudit** values are applied to all FTA's. Audit logs are local to each agent. Only actions are logged, not the success or failure of the action.

Administration guide incorrectly states that changes are immediate. JnextPlan must run to implement changes.



Global Options Attributes

- **Continued Auditing and security**

auditHistory / **ah** = ## - Enter the number of days for saved database audit record data. Audit records are discarded on a FIFO (first-in first-out) basis. Default value is **180** days. Changes take effect immediately.

Tw: May need to adjust accordingly for more or less audit data if **auditStore** is **db** or **both**..

enListSecChk / **sc** = *no/yes* – Specifies if user is permitted to list objects in the plan with TDWC or a conman show command based on Security file object access permissions.

If **no**, all objects are shown, regardless of the settings in the security file.

If **yes**, only objects with **list** access permissions for user are shown. Default is **no**.

Tw: Change to **yes** to limit view access.



Global Options Attributes

- **Continued Auditing and security**

enLogonBatch / lb = *no/yes* – (Windows jobs only) Automatically grant **logon as batch** rights.

If **yes**, the logon users for Windows jobs are automatically granted the right to **Logon as batch job** except for users running jobs on a Backup Domain Controller, right must be granted manually.

If **no**, or omitted, the right must be granted manually to each user or group. Default value is **no**. Run JnextPlan to make this change effect.

Note: No real benefit to implement to **Logon as batch job** since it is only one of several required Windows user rights that must still need to be assigned.

enSSLFullConnection / sf = *no/yes* | Enable or disable that TWS use a higher level of SSL connection than the standard level. Default value is **no**. Run JnextPlan to make change effective.

Note: Requires defining locatopts attribute **nm ssl full port** if **enSSLFullConnection** is set to **yes**.



Global Options Attributes

■ Planning and scheduling

enCarryForward / **cf** = *all/no/yes* - Specify if incomplete job streams are carried forward from the old to the new production plan (Symphony). Default value is **all**. Run JnextPlan to make this change effective.

Enter **all** to have all incomplete job streams carry forward, regardless of the Carry Forward option.

Enter **no** to completely disable the Carry Forward function and running jobs are moved to the USERJOBS job stream.

Enter **yes** to have incompleting job streams carried forward only if the Carry Forward option is enabled in the job stream definition.

enWorkloadServiceAssurance / **wa** = *yes/no*.- Enables or disables workload service assurance which manages the privileged processing of mission critical jobs and their predecessors. Default value is **yes**. Run JnextPlan to make this change effective.

Note: Minimum requirements for enabling option: **TWS 8.5.1** Fixpack 2, **TWS 8.5** Fixpack 2 and **TWS 8.4** Fixpack 6.

enForecastStartTime / **st** = *no/yes* – (Only applicable if workload service assurance is enabled.) Used to enable or disable calculation of the predicted start time of each job when running a forecast plan. Default value is **no**. Any change of this value is effective immediately. If option is **yes**, the **enPreventStart** global option is ignored during the creation of forecast plans.



Global Options Attributes

■ Reporting

statsHistory / sh = ## - Number of days for maintaining job statistics. Statistics are discarded on a FIFO (first-in first-out) basis. Default value of **10** maintains job statistics for the last 10 days. Has no effect on the retention of job stdlist files. Run JnextPlan to make this change effective in the plan. For the database, this option takes effect immediately.

Tw: Increase the value to get a better average of job run time statistics.

■ Event Driven Workload Automation

enEventDrivenWorkloadAutomation / ed = yes/no – Enable or disable the event-driven workload automation feature. After disabling, you must run JnextPlan and stop the event processing server (with the conman **stopevtp** command). After enabling, you must run JnextPlan and start the event processing server (with the conman **startevtp** command). Default value is **yes**.

Note: May need to disable if you have multiple spawning SSMAGENT processes or high CPU usage of SSMAGENT processes.

deploymentFrequency | df (0 - 60) Frequency in minutes, for monitoring event rule changes that require deployment. Default value is 5 minutes. Change is effective immediately.

Tw: Value may be lowered to increase deployment frequency but will use more resources.

logCleanupFrequency / lc = <minutes> (0 - 60) How often the automatic cleanup of log instances is run. Setting of **0** disable auto cleanup. Change is effective immediately.

logHistory / lh = <number of days> – Days saved for rule instance, action run, and message log data. Log instances are discarded on a FIFO (first-in first-out) basis. Changes are effective immediately.

Tw: May increase value for more data.



Global Options Attributes

- **Continued Event Driven Workload Automation - Email**

The following must be configured for event rule actions to send out emails. Emails are sent from the master workstation.

mailSenderName / ms = *user@domain* - Mail sender name used in event rule management. String to be used as the sender of the emails. Name is not verified or validated. Default value is **TWS**. Changes to this parameter are effective for the next mail send action performed.

smtpServerName / sn = *smtp host* – (Used in event rule management) SMTP server name. If you deploy rules implementing an action that sends emails via an SMTP server, specify the name of the SMTP server to be used by the mail plug-in. Changes to this parameter are effective immediately.

Note:(UNIX/Linux) The default value is **localhost**. Default value **localhost**, will work provided that sendmail feature is installed and enabled. Following may be performed to determine if emails can be sent from UNIX/Linux workstations (each command must be on a separate line).

```
<command_path>/sendmail user@domain.com  
message
```

▪

Above character is a period.

smtpServerPort / sp = 25 – Port number used to connect to the SMTP server by the mail plug-in. Valid values are in the range 0–65535. Default value is **25**. Changes to this parameter are effective for the next mail send action performed.

smtpUseAuthentication / ua = *no/yes* – Specify if the SMTP connection needs to be authenticated. Default is **no**. Changes to this parameter are effective immediately.



Global Options Attributes

- **Continued Event Driven Workload Automation - Email**

smtpUserName / un = *user* – SMTP server User name that sends emails via an SMTP server. Default is name of the TWS master domain manager user (the **TWS_user**). Changes to this parameter are effective immediately.

smtpUserPassword / up = *<user_pass>* – SMTP server user password when sending event rule emails via an SMTP server. Password is stored in an encrypted form. Default is **<null>** (blank). Changes to this parameter are effective immediately.

smtpUseSSL / us = *no/yes* – Specify if mail plug-in uses SSL protocol when event rule action sends emails via an SMTP server. Default is **no**. Changes to this parameter are effective immediately.

smtpUseTLS / tl = *no/yes* – Specify if mail plug-in uses TLS protocol when event rule action sends emails via an SMTP server. Default is **no**. Changes to this parameter are effective immediately.



Global Options Attributes

- **Continued Event Driven Workload Automation**

Sample email configurations

enEventDrivenWorkloadAutomation / ed = YES

mailSenderName / ms = TWS

smtpServerName / sn = localhost

smtpServerPort / sp = 25

smtpUseAuthentication / ua = NO

smtpUseSSL / us = NO

smtpUseTLS / tl = NO

smtpUserName / un = m86

smtpUserPassword / up = ***

enEventDrivenWorkloadAutomation / ed = YES

mailSenderName / ms = m851@cyborg.austin.tivlab.ibm.com

smtpServerName / sn = localhost

smtpServerPort / sp = 25

smtpUseAuthentication / ua = NO

smtpUseSSL / us = NO

smtpUseTLS / tl = NO

smtpUserName / un = m851

smtpUserPassword / up = ****



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Any Questions



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IBM Tivoli Workload Scheduler

TWSd: Customizing and Tuning Tivoli Workload Scheduler Local and Global Options

Pete Soto Jr

 STE	June 25, 2012
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Austin, Texas



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