



# Variables

## Overview

TES provides a rich set of variables representing system, job and job event data points. In addition, users can define their own variables to represent dynamic information. You can use variables for command parameters, in various action messages and in job and job group dependencies. You can update user-defined variables through variable actions. For more information about jobs and job groups, see [Chapter 5, “Jobs”](#).

Variables are useful for specifying information that continually changes or is only available at certain times. For example, if you want to know which queue your job enters when it runs, you can use the **Queue Name** variable to specify that information. Using the **Queue Name** variable in a mail action message, you can email yourself the name of the queue your job enters at every runtime.

TES’s variables function is a blend of power and flexibility that you expect in a world-class application.



### Note

Any argument that either explicitly has a space in it or could have a space in the argument should be enclosed in quotation marks; otherwise, the argument is returned as separate arguments wherever the spaces occur. For example, a job called Section 59 Tally would be returned as separate arguments, “Section,” “59” and “Tally.” Similarly, if a variable like `<jobname>` could return an argument containing a space, it also should be enclosed in quotation marks.

## Types of Variables

### System Variables

System variables cover general information such as:

- Current date
- Current time
- System name

### Job Variables

You can use job variables to use the information that pertains to a specific job in its definition. Job property information is represented by many variables. Some of these variables are:

- **Job ID** – The identification number of the job occurrence. Each job ID is unique.
- **Job Name** – The name of the job or job group.
- **Job Owner** – The owner (workgroup or user) of the job or job group.
- **Job Occurrence** – Information such as job status, exit code, and start time
- **Job Parent** – The parent job group that the job belongs to (if any).
- **External ID** – The job's ID number on the agent platform. For example, the External ID for a job run on a Unix agent would be the Unix process ID. The External ID for an SAP job would be the job's unique SAP instance number.

In addition, to the variables for the job being defined, if a job is dependent on another job, then the variables for job “A” also show under the job variables for job “B.” That is, the same variables defined for Job “A” become available for use in the dependent job “B.”

## Parent-Child Variables

In the same way, child jobs can access the job variables of their parent. The job variables of the parent and higher-level job groups appear as a submenu of the Job Variables menu under the name of the job group.

When the parent variable is selected, the level within the parent-child hierarchy is denoted by a suffix of a period and the letter p (**.p**). (Some variables without a time or date format may have two periods.) When the child job uses the parent variable, it is distinguished as a parent variable by a **.p** suffix. A grandparent variable would be **.p2**, a great-grandparent variable would be **.p3**, and so on.

Job variables can also be used to help communicate and/or diagnose the condition under which a job's action was triggered.

## Event Variables

Event variables include event and action information such as:

- Event Name
- Event Owner
- Action Name
- Action Owner

## User-Defined Variables

You can define your own variables to use as command parameters or in action message text.

By using the same user-defined variable in multiple job and action definitions, you can update all the jobs and actions by just updating the variable you created.

## Public Variables

You can declare any user-defined variable as public. Any TES user can refer to a public variable. For example, you could use public variables to refer to key employees by their title. For example, if you had a public variable named **Payroll Manager** which refers to the name of the Payroll Manager, you would update the variable definition when a new employee takes that position, and all instances of **Payroll Manager** would be updated.

## Dependencies Variables

You can use variables as dependencies to prevent jobs from running until their value qualifies. Variable dependencies are defined as a part of a job or job group definition. In the definition, you specify the value a variable must have before the job or job group can run. You can change variables manually to satisfy dependencies or they can change automatically when a job event or system event triggers a variable action. Thus, you can use variables to trigger the start of a job based on any system or job event.

For example, assume Job A needs to run 100 times, and when it runs, it saves a file. Job A also increments a variable from 1 to 10. When the variable reaches 10, Job B starts, resets the variable to 1, and transfers the files created by Job A to another location, freeing up disk space. TES repeats this process 10 times until Job A has run 100 times.

## Variables Interface

From the **Navigator** pane, select **Definitions>Variables** to display the **Variables** pane.

## Buttons

The **Variables** interface contains the following buttons:

- **Add Variable** – Displays the **Variable Definition** dialog to add a variable.
- **Edit Variable** – Displays the **Variable Definition** dialog to edit a variable.
- **Copy Variable** – Creates a copy of the selected action with the same information as the selected variable, except for the name.
- **Delete Variable** – Removes the variable definition from the TES database.
- **Refresh** – Updates the data in the current pane.
- **Print** – Displays the **Reports** pane to view and print your variable definitions. For more information, see [Chapter 11, “Monitoring Production”](#).

## Search Field

Enter text that you want to search for within the columns displayed into this field.



### Note

This field at the top right of the grids will only search text columns that are not grayed out and are string-based. See [Searchable Columns, page 2-35](#).

## Columns

The **Variables** interface contains the following buttons:

- **Name** – The name of the variable.
- **Owner** – The owner of the variable.
- **Public** – Specifies that the variable is public, that is, available to all TES users.
- **Type** – The type of variable; whether **String**, **Date**, **Number** or **Boolean**.

- **Value** – The value of the variable.
- **Published** – Shows whether the variable is available for use with remote masters.
- **Modified** – The last time the variable definition was modified.

## Variables Preferences Dialog

If you select **Preferences** from the **View** main menu while viewing the **Variables** pane, the **Variables Preferences** dialog displays.

From the **Variables Preferences** dialog, you can select which columns are displayed in the **Variables** pane and in what order they appear.

- A checkmark to the left of a column title indicates that it displays in the pane. No checkmark indicates that it is not displayed.
- To rearrange the order in which the columns are displayed, select the column and click the up or down arrow.

## Navigator Context Menu

When you right-click in the **Navigator** pane while viewing the **Variables** pane, the **Navigator** context menu displays.

The following describes the items in the Variables **Navigator** context menu:

- **Add Variable** – Displays the **Variable Definition** dialog to add a new connection. Has the same function as the **Add Variable** button.
- **Preferences** – Displays the **Preferences** dialog for the **Variables** pane.
- **Print** – Displays the **Reports** pane to view and print your variables definitions. Has the same function as the **Print** button on the TES toolbar. For more information, see [Chapter 11, “Monitoring Production”](#).
- **Export** – Saves the data in the current pane as an ASCII text file. You can then use the file data in other applications.
- **Refresh** – Updates the data in the current pane.

## Variables Pane Context Menu

When you right-click in the **Variables** pane, the **Variables** pane context menu displays.

The **Variables** pane context menu contains the following options:

- **Add Variable** – Displays the **Variable Definition** dialog to add a new variable.
- **Edit Variable** – Displays the **Variable Definition** dialog to edit an existing variable.
- **Delete Variable** – Deletes the selected variable.
- **Print** – Displays the **Reports** pane to view and print your variables definitions. Has the same function as the **Print** button on the TES toolbar. For more information, see [Chapter 11, “Monitoring Production”](#).

## Variable Definition Dialog

The **Variable Definition** dialog displays when adding or editing a variable.

This dialog contains the following elements:



### Note

**Name** – The name of the variable that displays in the variable pane and in the variable selection context menus. The name of a variable cannot include the following five characters: <, >, :, . or @.

- **Owner** – The owner of the variable. By default, the creator of the variable is the owner.
- **ID** – The variable's identification number. The ID number is automatically appended to the variable name so that variables with the same name can be created between users and workgroups. You cannot edit the ID.
- **Type** – The data type of the variable. You can choose from the following types of data:
  - **String** – The value of the variable will be a text string consisting of no more than 255 characters. Note that if you type a number when the **STRING** type is selected, the result will still be a string, not a numerical value.
  - **Number** – The value of the variable must be a number (base 10).
  - **Date** – The value of the variable will be a date string and must conform to the same format as set in the operating system that the master is running.
  - **Boolean** – The variable uses Boolean logical operators to determine a true or false value.
- **Value** – The value of the variable. Do not use quotation marks unless you want them to be a part of your text string (when the **STRING** type variable is selected). If Boolean was selected in the **Type** field, **True** or **False** are presented as the options in this field.
- **Calculated** – This check box appears only if the **Date** option is selected in the **Type** field. Select this option to make the variable calculate a date based on a formula. Selecting this check box, makes the **Value** field unavailable since the value will be calculated and displays a **Browse** button at the end of the field. Clicking this **Browse** button displays the **Date Calculation** dialog.
- **Description** – This is an empty text field for typing a description or notes about the variable.
- **Public** – When selected, this option makes the variable available to all TES users on the master. You can make this option default to either selected or cleared from the **System Configuration** dialog, **Defaults** tab.
- **Publish this variable to remote masters** – The variable is available for use by other masters.
- **Read only** – The defined variable is available to other masters but the variable can not be modified. (This option is only available if the **Publish this variable to remote masters** option was selected.)

## Date Calculation Variable Dialog

If you wish to use a specific calendar date for the date value then simply enter the date in a specified format. The date format is defined on the **Date** tab of your computer's **Regional Options** setting (**Start>Settings>Control Panel>Regional Options**).

If you wish to calculate a date, then you must configure the formula to be used in creating the date variable. You associate a date calculation with a variable from the **Date Calculation** dialog.

To display the **Date Calculation** dialog:

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- Step 1** Select the **Date** option in the **Type** field of the **Variable Definition** dialog.
- Step 2** Select the **Calculated** option.
- Step 3** Click the drill-down button in the **Value** field to display the **Date Calculation** dialog.
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This dialog contains the following elements:

- **Calendar Start Section** – The fields that are available in the **Date Calculation** dialog vary according to the option selected in the **Starting with** field in the **Calendar Start** section. Some fields are unavailable with certain options while other options display new fields.

**Starting with** – The starting point of the date calculation. All defined offsets are offset from this date. As soon as an option is selected from the drop-down list, the resulting date displays in parentheses to the right of the field.

The possible starting points of the date calculation and their definition are listed in the following table:

**Table 9-1**      **Date Calculation Options**

<b>Date Calculation Starting Points</b>	<b>Definition</b>
System Date	The date displayed in the computer system. Usually this is the same as the current date.
Production Date	The date used when scheduling production schedules. This may differ from the current date if a production offset has been configured.
Job's Actual Run Date	The date that the job actually runs. This may be different than the scheduled date due to production carryover.
Job's Scheduled Date	The date assigned to a job to run.
Last Sunday	The Sunday that occurred before the current date.
Last Monday	The Monday that occurred before the current date.
Last Tuesday	The Tuesday that occurred before the current date.
Last Wednesday	The Wednesday that occurred before the current date.
Last Thursday	The Thursday that occurred before the current date.
Last Friday	The Friday that occurred before the current date.
Last Saturday	The Saturday that occurred before the current date.
Specific Date (m/d/yy)	A date is specified within a designated year.
Specific Date (m/d)	A date is specified within the current year.
Fiscal Month	The current month within a selected fiscal year.
Fiscal Week	The current week within a selected fiscal year.
Fiscal Quarter	The current quarter within a selected fiscal year.
Fiscal Year	The current year within a selected fiscal year.
Calendar Month	The current calendar month.

- n **Using** – This field displays only when the **Specific Date** options and the **Fiscal** period options are selected in the **Starting with** field. This field varies according to the option selected in the **Starting with** field.

- n **Specific Date (m/d/yy)** – Click the drop-down arrow to display the current monthly calendar tab. Click the desired date to select it. You can advance or roll back the calendar month by clicking the side arrows in the header bar. Alternately, you can click the month to display a list of the months to select from. You can also click the year and click the up or down arrow to advance or roll back the year.
- n **Specific Date (m/d)** – The **Using** field is split into two fields. The first field is a drop-down list of months. Once a month is selected, click the second field to select a day of the month. The current year is assumed.
- n **Fiscal periods** – click the drop-down arrow in the **Using** field, to display a list of predefined fiscal calendars. This field displays only if one of the following options is selected in the **Starting with** field: **Fiscal Month**, **Fiscal Week**, **Fiscal Quarter** and **Fiscal Year**.
- **Offset section** – Date offsets are optional but you may require one or more offsets from the starting date to calculate the desired date. The offset units used when calculating dates in a variable vary from a specific number of days to fiscal periods and calendar periods. You select a unit of offset from the drop-down list of unit options, select how many units to use and whether the offset is positive or negative.
  - n **Positive/Negative Offset** – Select whether the offset is positive (+) or negative (–).
  - n **Number of Offset Units** – The number of the selected offset units to use. Type a number or use the arrow keys to increase or decrease the value. A zero offset value whether positive or negative has special significance in date calculations.
  - n **+ 0 (Positive zero offset)** – If the start date is the same as the selected offset unit then use that unit's date/day. If the start date and the selected offset unit do not coincide than use the next occurrence of that unit.  
 For example, if the date offset is + 0 Sunday, and the start date falls on a Sunday then use that Sunday, but if the start date falls on a day other than Sunday use the next occurrence of Sunday. If the start date is March 10th, then because the start date falls on the same date as the date unit (Sunday), the calculated date is March 10th. If the start date was on a different day within the week, say on the 12th, then the calculated date would be March 17th.
  - n **– 0 (Negative zero offset)** – If the start date is the same as the selected offset unit then use that unit's date/day. If the start date and selected offset unit do not coincide than use the previous occurrence of that unit.  
 For example, if the date offset is – 0 Sunday, and the start date falls on a Sunday then use that Sunday, but if the start date falls on a day other than Sunday use the previous occurrence of Sunday. If the start date is March 10th, then because the start date falls on the same date as the date unit (Sunday), the calculated date is March 10th. If the start date was on a previous day within the week, say on the 9th, then the calculated date would be March 3th.
- **Offset Units** – Select from the drop-down list of unit options. These options range from specific days of the week to fiscal and calendar periods of time.
  - n **Calendar (Custom Calendar unit only)** – This field only appears if the **Custom Calendar** option was selected in the **Offset Units** field. The field has a drop-down list of calendars that are available from your defined Calendars.
  - n **Fiscal (Fiscal periods only)** – This field only appears if one of the fiscal units is selected (**Fiscal Quarter**, **Fiscal Month**, **Fiscal Week** and **Fiscal Year**). This field has a drop-down list of predefined fiscal calendars.
- **Calendar Offset** – This column lists the defined calendar offset parameters.



- **Offset End** – This column lists the calendar date derived from the defined calendar offset relative to the starting date if the variable were to be calculated now.
- **Add** – Click this button to add the calendar offset parameters that are displayed to the list of calendar offsets.
- **Edit** – Click a listed calendar offset to select it. Click the **Edit** button to display and, if desired, to modify the existing parameters.
- **Delete** – Click this button to remove the selected calendar offset.
- **Test** – Click this button to test the specified date offset. Clicking this button displays a calendar tab dialog. Click a date in the calendar month to apply the offset to that date and display the resulting calculated date. The Test button is unavailable if an offset date is not selected.

## Examples of Calendar Offsets

A few examples may illustrate some important points about how calendar offsets work.

Fiscal calendar offsets key off both the quarter breakdown and the starting date of the fiscal calendar used in the date calculation variable. A fiscal period is often independent of a calendar period. For example, assume that the fiscal calendar being used for a fiscal quarter offset is defined to start on a Monday, January 1st with a 4-4-5 quarter breakdown. If the starting date is February 2, 2001 and the calendar offset is “+ 1 Fiscal Quarter” then the calculated offset date is April 2, 2001. This is calculated from the starting point of January 1st and counting 13 weeks (4-4-5).

Using the same fiscal calendar parameters as the preceding example, for a fiscal month with a starting date of February 2, 2002 and a “+ 1 Fiscal Month” offset calculates an offset date of February 26, 2002. It seems odd that the next fiscal month begins in the same month but the fiscal calendar is counting months according to the designated quarter breakdown and not according to the calendar month. Counting from the start of the fiscal quarter (January 1, 2002), a 4-4-5 quarter breakdown means that the months of the first fiscal quarter start on 1/1, 1/29 and 2/26 respectively. The fourth fiscal month (and second fiscal quarter) begins on 4/2.

You can also use multiple offsets. Each listed calendar offset uses the date calculated from the preceding offset to build upon when calculating its result.

In the multiple calendar offsets in the example, there are three calendar offsets used to arrive at the date offset.

- The first offset, + 1 “full month,” adds a calendar month to the current date (4/30/02) giving a date of 5/30/02.
- The second offset, – 0 “Monday,” moves the calculated date to the previous Monday unless the calculated date already falls on a Monday, giving a date of 5/27/02.
- The third offset, + 0 “Custom Calendar–Workdays,” advances the calculated date by one day by using a custom calendar that defines the workdays for a company. The calculated date from the previous offset, 5/27/02, does not fall on a workday according to the custom calendar because 5/27/02 is Memorial Day, a holiday. This offset ensures that the calculated date is a workday.

A table of more calendar offset examples is provided for the user to study how calendar offsets work.

**Table 9-2**      **Date Calculation Options**

Calendar Offset	Definition
Add 0 “Monday”	The next Monday following the Starting with date. If today is a Monday, then today’s date is returned.
Add 1 “Monday”	Always the next Monday following the Starting with date.

**Table 9-2**      **Date Calculation Options**

Calendar Offset	Definition
Subtract 1 “Monday”	Go back to the Monday previous to the Starting with date.
Add 2 “Monday”	Move ahead two Mondays from the Starting with date.
Add 2 “Days”	Move ahead two days from the Starting with date.
Add 1 “Week”	Move ahead one week following the Starting with date.
Add 1 “Month”	One month following the Starting with date.
Subtract 2 “Month”	Go back two months previous to the Starting with date.
Add 1 “Calendar Week”	A calendar week begins on Sunday so this offset goes to the next Sunday from the Starting with date.
Add 1 “Fiscal Quarter” Fiscal	The beginning of the next fiscal quarter following the Starting with date. This varies according to the way the fiscal calendar being used is defined. The quarters are calculated according to when the fiscal year starts.
Add 1 “Fiscal Week”	The beginning of the next fiscal week following the Starting with date. This varies according to the way the fiscal calendar being used is defined. The weeks are calculated according to when the fiscal year started.
Add 1 “Calendar Month”	The beginning of the next calendar month following the Starting with date.

## Variables Button Context Menu

The **Variables** button context menu displays when you click the **Variables** button in the **Job, Job Group** or **Action Definition** dialogs.

When selecting a variable for a command parameter, the **Variable Search** dialog displays when there are too many variables to list in a context menu.

You can scroll down the list of variables and make a selection or you can start typing in the name of the variable to display the variables that match your entry.

Click **OK**.

## System Variables

The following describes the **System Variables** available from the **Variables** button context menu.

This context menu contains the following options:

- **System Date** – The date on the TES master. You can select from a list of predefined date formats, or construct your own format using the **Date Format Selection** dialog. For more information about using the **Date Format Selection** dialog, see [“Date Format Selection Dialog” section on page 9-289](#).
- **System Time** – The time according to the TES master when the variable is replaced with a value. You can select from a list of predefined system time formats. For more information about time formats, see [“Time Format Submenu” section on page 9-290](#).
- **System Name** – The name of the TES master.
- **User Name** – The account under which the TES master is running. If it is not running under a specific account, but as part of the system, the value of this variable will be **SYSTEM**.

- **Production Date** – The current production date for the master. This is the same as the **System Date**, unless you are running a schedule from a day other than the current day. You can select from a list of predefined date formats, or construct your own format using the **Date Format Selection** dialog. For more information about using the **Date Format Selection** dialog, see [“Date Format Selection Dialog” section on page 9-289](#).
- **Queue Name** – The name of the queue that triggered the system event.
- **Queue Limit** – The job limit of the queue that triggered the system event.
- **Connection Name** – The name of the connection relevant to the variable. If you are defining a job, the connection name variable relates to the agent that will run the job. If you are defining an intermaster dependency, the connection name variable refers to the connection to the remote master.
- **Agent Limit** – The job limit on the agent that triggered the system event.
- **Remote Master Name** – The name of the remote master that triggered the system event.

## Job Variables

The **Variables** button context menu contains the following Job variables:

- **Job Rule ID** – The identification number for the job. The job rule ID may be shared by numerous job instances that were created from the same job. Compare to Job Instance ID.
- **Job Name** – The name of the job as defined in the **Job Definition** dialog.
- **Job Parent** – The parent job group that the job belongs to (if any).
- **Job Owner** – The owner of the job. The owner can be a user name or a workgroup name.
- **Job Command** – The command that the job executes.
- **Agent Name** – The name of the agent that the job runs on. If the job has an agent list, it is the name of the agent in the agent list to which the job was assigned.
- **Estimated Runtime** – The estimated time that it takes for the command executable to run. If the job has run more than once, this value is a historical average of its actual duration. The time is expressed in minutes in decimal format. This means that a job that runs for one minute and 15 seconds is shown as 1.25.
- **Earliest Start Time** – The beginning of the job’s time window. You can select from a list of predefined system time formats. For more information about time formats, see [“Time Format Submenu” section on page 9-290](#).
- **Latest Finish Time** – The end of the job’s time window added to its estimated duration. You can select from a list of predefined system time formats. For more information about time formats, see [“Time Format Submenu” section on page 9-290](#).
- **Owner’s Phone Number** – The job owner’s phone number, as defined in the owner’s user definition.
- **Owner’s Pager Number** – The job owner’s pager number, as defined in the owner’s user definition.
- **Job Alias** – The alias of the job.
- **Job Run ID** – The number that identifies the individual job instance. A job may run numerous times and each time the job runs it has a different job instance ID. Compare to Job Rule ID.
- **Job Status** – The status of the job.
- **Exit Code** – The exit code of the job when it completed.

- **External ID** – The job’s ID number on the agent platform. For example, the external ID for a job run on a Unix agent would be the Unix process ID. The external ID for an SAP job would be the job’s unique SAP instance number.
- **Runtime User** – The user name under which the job is running.
- **Job Output** – The output from the job that triggered the job event, up to 1024 characters. If this variable is used in a Windows log message, it is limited to 255 characters. This variable does not apply to system events.
- **Scheduled Date** – The date on which the job is scheduled to run. You can select from a list of predefined date formats, or construct your own format using the **Date Format Selection** dialog. For more information about using the **Date Format Selection** dialog, see [“Date Format Selection Dialog” section on page 9-289](#).
- **Actual Runtime** – The length of time that the job ran or has been (if still active) running. The time is expressed in minutes in decimal format. This means that a job that runs for one minute and 15 seconds is shown as 1.25.
- **Start Time** – The time that the job entered **Active** status. You can select from a list of predefined system time formats. For more information about time formats, see [“Time Format Submenu” section on page 9-290](#).
- **Finish Time** – The time that the job completed. You can select from a list of predefined system time formats. For more information about time formats, see [“Time Format Submenu” section on page 9-290](#).
- **Error Message** – For jobs that complete abnormally, the error message currently associated with the job.
- **Queue Name** – The queue in which the job ran.
- **FTP Statistics** – Select from four options that offer details about the FTP operation.
  - **# of Files** – Details the number of files FTP’ed.
  - **# of Bytes** – Details the size of the file (in bytes) that was FTP’ed.
  - **# Skipped** – Details the number of files within a designated directory that were not FTP’ed.
  - **Duration (Seconds)** – Details how long (in seconds) that it took to perform the FTP operation.

## Event Variables

Job event variables are only available when you are composing a message in the message field of an action.

The **Variables** button context menu contains the following Event variables:

- **Event Name** – The name of the job event that triggered the action.
- **Event Owner** – The owner of the job event that triggered the action.
- **Action Name** – The name of the action triggered by the job event.
- **Action Owner** – The owner of the action triggered by the job event.

## User Variables

If you are the owner (by default, the creator) of any variables, this menu selection (replaced with your user name) appears. The submenu lists all your user variables.

## Workgroup Variables

If you or the workgroup to which you belong own any variables, this menu selection will appear. The submenu lists all the variables owned by that workgroup.

## Public Variables

This menu item appears if there are any public variables. Any variable can be made a public variable by selecting the **Public** option in its definition.

## Date Format Selection Dialog

The **Date Format Selection** dialog displays when you choose to change the format of a date variable that was selected from a **Variables** button context menu. You could be in a **Job**, **Job Group** or **Action Definition** dialog.

This dialog contains the following elements:

- **Date Format** – The date format to be applied to a date variable. The drop-down menu shows a list of predefined date formats. You can choose from this list or create a custom format. The drop-down menu offers six common date formats:
  - **ddd (Abbreviated day of the week)** – Use this date format for abbreviated days only. The first letter (of three) is capitalized. For example: **Mon, Tue, Wed**, etc.
  - **dddd (Day of week)** – Use this date format for days only. The first letter is capitalized. For example: **Monday, Tuesday**, etc.
  - **dddd, mmmm dd, yyyy** – The long date format. Use this format to exclude any abbreviations. For example: **Friday, October 6, 2006**.
  - **mmmm dd, yyyy** – Letterhead date format. For example: **October 6, 2006**.
  - **dddd, dd mmmm, yyyy** – An alternative long date format. Use this format to exclude any abbreviations. For example: **Friday, 6 October, 2006**.
  - **dd mmmm, yyyy** – An alternative letterhead date format. For example: **06 October, 2006**.
- **Sample** – An example of the format you selected, using the current date.
- **Custom Format** section – Use this section to define your own date format:
  - **Order** – Arranges the order of the day, month, and year in the date format as follows:
    - Month, Day, Year** – For example: **October 6, 2006**
    - Day, Month, Year** – For example: **6 October 2006**
    - Year, Month, Day** – For example: **2006 October 6**
    - Year, Day, Month** – For example: **2006 6 October**
  - **Separator** – The character to use to separate your format into year, month and day. You can have only one separator character. The default is a forward slash /.
  - **Month/Qtr** – Select this option to include the month or quarter in your custom date format. The default is selected.
  - **Day** – Select this option to include the day in your custom date format. The default is selected.
  - **Year** – Select this option to include the year in your custom date format. The default is selected.
  - **Month, Day and Year drop-down menus** – Selects the format for each of the date elements.

- **Fiscal Calendar (For Fiscal Month, Quarter or Year)** – If a fiscal format was selected in either the **Month/Qtr** or **Year** fields then select a predefined fiscal calendar from this drop-down list.
- **Apply** – Click this button to display the custom date format in the **Date Format** field, and show an example using the current date in the **Sample** field.

## Time Format Submenu

The time formats available from the time format submenu use the following conventions:

**Table 9-3** *Time Format Conventions*

Format	Description	Example
h:mm AM/PM	Standard time without preceding '0' showing hours and minutes using ante meridiem (AM) or post meridiem (PM)	7:12 PM
hh:mm AM/PM	Standard time with preceding '0' showing hours and minutes using ante meridiem (AM) or post meridiem (PM)	07:12 PM
H:mm	Military time without preceding '0' showing hours and minutes	7:12
HH:mm	Military time with preceding '0' showing hours and minutes	07:12
h:mm:ss	Standard time without preceding '0' showing hours, minutes and seconds	7:12:31
hh:mm:ss	Standard time with preceding '0' showing hours, minutes and seconds	11:32:44
H:mm:ss	Military time without preceding '0' showing hours, minutes and seconds	15:16:59
HH:mm:ss	Military time with preceding '0' showing hours, minutes and seconds	06:54:07



### Note

By default the characters that comprise the time format are separated by colons but you may replace the colon with a period or manually delete the separator if desired.

## Date Format Conventions

Date formats use the following conventions:

**Table 9-4** *Date Format Conventions*

Format	Description	Example
d	Date	1, 2, ..., 31
dd	Date with leading '0', if applicable	01, 02, ..., 31
ddd	Abbreviated day	Mon, Tue, ..., Sun
dddd	Long day	Monday, Tuesday, ..., Sunday

**Table 9-4**      **Date Format Conventions**

Format	Description	Example
j	Julian date	9, 41, 121, ..., 365
jjj	Julian date with leading '0,' if applicable	009, 041, 121, ..., 365
m	Numerical month	1, 2, ..., 12
mm	Numerical month w\ leading '0', if app.	01, 02, ..., 12
mmm	Abbreviated month	Jan, Feb, ..., De
mmm	Long month	January, February, ..., December
yy	Abbreviated year	99, 00, ..., 02
yyyy	Full year	1999, 2000, ..., 2006
fm	Fiscal Month	1, 2, ..., 12
fmm	Fiscal month w/leading '0,' if app.	01, 02, ..., 12
q	Calendar quarter	1, 2, 3, 4
fq	Fiscal Quarter	1, 2, 3, 4
fyy	Abbreviated fiscal year	99, 00, ..., 02
fyyy	Full fiscal year	1999, 2000, ..., 2006

## Variables Procedures

### Adding Variables

When you create a variable definition, you can use it as a command parameter or as part of the message text in an action.

To add a variable:

- 
- Step 1** From the **Navigator** pane, select **Definitions>Variables** to display the **Variables** pane.
- Step 2** Right-click and select **Add Variable** from the context menu or click the **Add** button on the TES toolbar to display the **Variable Definition** dialog.
- Step 3** In the **Name** field, type a name for the variable you are defining.
- Step 4** In the **Owner** field, if you want to change the ownership of the variable, select a new **Owner** from the drop-down menu.
- Step 5** In the **Type** field, from the drop-down menu, select the type of variable you are defining:
- **String** – This setting accepts any string up to 255 characters, including numerical strings. Note that **STRING** types cannot be incremented with a variable update action.
  - **Number** – This setting accepts only values in numerical format, including those in exponential format (i.e., **1E5**). It does not accept algebraic formats such as **1+2**.
  - **Date** – This setting accepts only date values. You can only enter dates in the format defined in your Windows control panel. For example, if you have selected the short date style **m/d/yy** in the **Regional Settings** control panel, you cannot enter the date here as **10-6-07**.

- **Boolean** – The variable uses Boolean logical operators to determine a true or false value.

- Step 6** In the **Value** field type a starting value for the variable. You do not have to use quotation marks. You can type up to 255 characters.
- Step 7** In the **Description** field, type a description for the variable (optional).
- Step 8** If you want the variable to be public, select the **Public** option. This makes the variable accessible to all TES users, within the limits of their security policy.

You can edit a variable when you want to change its current value. The new value will be used everywhere that the variable is referred to, such as in the job definition, or an action definition.

## Deleting Variables



### Note

By default the characters that comprise the time format are separated by colons but you may replace the colon with a period or manually delete the separator if desired.

You can delete variables that are no longer used. If there are references to the variables in jobs and actions, they will be replaced with an empty string.



### Note

If the variable to be deleted is already in use, you will lose that variable's value in all those instances. You can disturb your production schedule, depending on how the variable was used. Once a variable definition is deleted, it will not be automatically replaced in any instances where it has been used, even if the new variable is given exactly the same name.

To delete a variable:

- Step 1** From the **Navigator** pane, select **Definitions>Variables** to display the **Variables** pane.
- Step 2** Right-click the variable and select **Delete Variable** from the context menu or select the variable and click the **Delete** button on the TES toolbar or the **DELETE** key on your keyboard.
- Step 3** When the **Confirmation** dialog displays, click **Yes** to delete the variable.

## Editing Variables

To edit a variable:

- Step 1** From the **Navigator** pane, select **Definitions>Variables** to display the **Variables** pane.
- Step 2** Double-click the variable or right-click the variable and select **Edit Variable** from the context menu, or select the variable and click the **Edit** button on the TES toolbar.
- Step 3** In the **Name** field, edit the name of the variable.



**Note**

If you change the name of the variable, the new variable name does not automatically get updated in all job and action definitions where it was previously used. However, the correct substitution will still occur.

- Step 4** In the **Type** field, edit the type of variable:
- **STRING** – This setting accepts any string up to 255 characters, including numerical string types. Note that **STRING** types cannot be incremented with a variable update action.
  - **NUMBER** – This setting accepts only values in numerical format, including those in exponential format (e.g., **1E5**). It does not accept algebraic formats such as **1+2**.
  - **DATE** – This setting accepts only date values. You can only enter dates in the format defined in your Windows control panel. For example, if you have selected the short date style **m/d/yy** in the **Regional Settings** control panel, you cannot type the date here as **10-6-06**.
  - **Boolean** – The variable uses Boolean logical operators to determine a true or false value.
- Step 5** In the **Value** field, edit the variable's value. You do not have to use quotation marks. You can type up to 255 characters.
- Step 6** In the **Description** field, type a description for the variable (optional).
- Step 7** If you want the variable to be public, select the **Public** option. This makes the variable accessible to all TES users, within the limits of their security policy. To limit use of the variable to yourself and your Workgroup, clear the **Public** option.

## Viewing Variables

You can view all the user-defined variables available to you from the **Variables** pane.

From the **Navigator** pane, select **Definitions>Variables** to display the **Variables** pane.

## Viewing the Value of Variables

To view the value of a variable:

- Step 1** From the **Navigator** pane, select **Definitions>Variables** to display the **Variables** pane.
- Step 2** The **Variables** pane includes a **Value** column. If the **Value** column is not visible in the **Variables** pane, select **Preferences** from the **View** main menu to display the **Variables Preferences** dialog.
- Step 3** On the **Columns** tab, select the **Value** option.
- Step 4** For more information about the **Variables Preferences** dialog, see [“Variables Preferences Dialog” section on page 9-280](#).
- Step 5** You can also double-click the variable, or right-click and select **Edit Variable** from the context menu, or select the variable and click the **Edit** button on the TES toolbar to open the **Variable Definition** dialog and view its value.

