Process Director Documentation

System Variables Reference Guide

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Contents

Documentation Formatting Note

Text and Code Formatting Conventions

To highlight terms and concepts that have special relevance, this documentation implements several formatting conventions to make key words and terms more noticeable.

- Control Label: This format will identify the text labels or properties for Process Director objects, or the names of dialog boxes.
  Example: The Name text box.
- UI Element: This format will identify user interface elements such as buttons, tabs, or other UI objects used to perform interface operations.
  Example: The Submit button.
- Formal Control Name: This format will identify named Process Director controls.
  Example: A Section End control.
- Process Director Object: This format will identify named instances of Process Director Folders, Forms, Process Timelines, Knowledge Views, etc.
  Example: The Travel Expense Approval Process Timeline.
- Key Terms: This format will identify key terms and concepts introduced into the text of the document, and which are important to learn.
  Example: A Case is group of processes, transactions, or responses that define a complex activity.
- `Code`: This format will identify code samples, system variables, formulas, or other fixed programmatic syntax.
  Example: Type the following formula: `AirFare + Lodging`.
- `Code Option`: A section of a code sample to denote placeholder values that must be replaced by the user manually at design time.
  Example: `{CURR_USER, format=FormatType}`
- `Code Comment`: A section of a code sample that is used for text comments, rather than runnable code.
  Example: `// This is a comment.`
- `Code Variable`: A programming object whose value is usually determined from a command written in code.
  Example: `var formControls = BaseCurrentForm.FormControls;`

In addition to the above, extended samples of program code are presented in a special format to set them off from the rest of the text, as demonstrated below:

```
// Called after database initialized
public override void SetSystemVars(BPLogix.WorkflowDirector.SDK.bp bp)
{
    // Before we make SDK calls that access the database,
    // ensure DB has been opened
    if (bp.DBOpenComplete)
    {
        // Place custom code here
    }
}
```

Important text or warnings are presented in a special callout box for special attention:

This is an Important item.

Notes of general interest are also presented in special callout boxes:

This is a note.

Hopefully, the use of these formatting conventions will make it easier for you to determine the various types of objects to which the text refers.

Icons

Some universal icons are used in the documentation. They are listed below:

ICON	NAME	DESCRIPTION
#	Link	A hyperlink to the specific URL and named anchor of a topic, heading, or other item.
+	Dropdown Closed	An icon that, when clicked, will expand dropdown text in a topic.
−	Dropdown Open	An icon that, when clicked, will close the expanded drop-down text in a topic.

Finally, some topic headers within each online document may display a link symbol (#) when you mouse over the header. Clicking the link will navigate to that specific section of the document, which can then be bookmarked in your browser.

Other Conventions

URLs displayed in sample will, unless used for commands or URLs used on the local host machine, use the "HTTPS" prefix by default, as modern practice has evolved to use the encryption layer to access URLs, instead of the plain-text method (HTTP) of accessing URLs.

System Variables Reference Guide

Welcome to the System Variables Reference Guide for BP Logix Process Director software. BP Logix specialists update the online Help regularly.

Browsing Help

You can browse the help for each documentation section by using the mini Table of Contents on the right side of the page. To switch to a different section of the documentation, you can choose the desired section from the dropdown menus in the page header. Additionally, you can navigate backwards from any page to a higher-level help topic by using the breadcumb list that's displayed at the top of the page, just above the page content.

Searching Help

The search bar enables you to search for documentation topics from any or all of the Process Director documentation topics. To search across all topics, simply enter your desired search term in the search bar. To limit the topics returned by your search, click on the search bar's Filter icon to display the list of search filters, then click on the filter you'd like to apply to your search.

User Feedback

Every topic page in the documentation has a feedback button at the bottom of each page. To provide feedback, simply click the feedback button to display the Feedback dialog box, and enter your feedback in the dialog box. Your email address will be included with your feedback as a required field, so that a documentation specialist can contact you directly.

System Variable Modifiers and Parameters

Class Types

There are several classes of system variable that are similar, in that they all refer to processes in some form. First, there are the classes that refer to specific process models:

- Process Timeline: These System Variables refer specifically to Process Timeline definitions and instances.
- Timeline Activity: These System Variables refer specifically to Timeline Activity definitions and instances.
- Workflow: These System Variables refer specifically to Workflow definitions and instances.
- Workflow Step: These System Variables refer specifically to Workflow Step definitions and instances.

BP Logix recommends the use of Process Timelines for all new development. Workflow is the legacy process model used in earlier versions of the product. Workflows remain in the product for backwards compatibility, are no longer in active development, and have received no new functionality updates since Process Director v.4.5.

Process Timelines have definition objects that provide their configuration, and instances that are created each time the definition is invoked. The Process Timeline and Timeline Activity System Variables should be the first choice for referencing attributes of their corresponding objects in *most* (but not all) cases.

When a Process Timeline is run, it invokes both a Timeline instance and a Process instance that run concurrently. The Process instance has its own set of System Variable classes.

- Process: These System Variables refer specifically to existing Process instances.
- Process Task: These System Variables refer specifically to existing Process Task instances.

Processes do not have definition objects, only instances. Processes can't be directly configured, and inherit their configuration from the Process Timeline that invokes them. A process-based System Variable can only return data from existing instances, and only data that is related to the Process instance. In many cases, the Process and Timeline variables return the same information, but the selection of Process System Variables is more limited than the Process Timeline System Variables. Process Task System Variables are even more limited, since Process Tasks are primarily relevant specifically to user activities.

Despite the more limited range of Process System Variables, they must sometimes be used to extract unique information that isn't available from the process model's variables. Some information only exists in relation to a Process or Process Task instance, and isn't defined in the Process Timeline definition.

For example, User Delegation is configured at the system level, and isn't accessible from the Process Timeline definition, or its associated System Variables. Instead, the**Task on Behalf of** Process Task System Variable returns the name of the user who delegated a task to another user. User delegation only occurs in the context of a running process, and the Task on Behalf of variable only has a value when the del-

egation actually occurs. Delegation can only be invoked while the Process Task is running, and the identity of the delegator and delegate is only supplied in that context.

> The Advanced Options tab of a User Timeline Activity does have an *Allow Task Sharing* property that, when checked, enables a task to use Shared Delegation, but the identity of the possible delegates is, again, configured at the system level. So, while this property *enables* Shred Delegation for the task, it provides no configuration for it.

Parameters

System variables will often contain Modifiers or Parameters that control the data the system variable will return. These are specified in SysVar tags using the following syntax:

```
{VARNAME, format=FormatType}
```

`VARNAME` is the name of the system variable, and `FormatType` can be one of any member of the set of the relevant formatters, depending on the system variable in which it's used.

System variable Modifiers aren't case sensitive.

Escape Characters and Defaults

When Process Director sees a string with text enclosed in curly braces, it will attempt to interpret the enclosed text as a system variable. To prevent it from doing so, add two backslashes and an additional curly brace before each desired curly brace you want to display as text. For example, the string "`\\{{CURR_DATE\\}}`" will display the text "{CURR_DATE}", instead of displaying the current date.

System variables for form fields use the locale specified in the form definition when formatting the string. For example, a form field defined as a currency field, and whose locale is specified in the form definition as "Japan", will render its value as Japanese Yen.

When used in a condition, system variables referring to running Process Timeline Activities (e.g., `{ACTIVITY_RUN_TIME}`), when used without specifying the name of a specific activity, will default to the "current" activity. However, if multiple activities are running, the result can be hard to predict. Process Director will now first look at the context in which the condition is being evaluated: for example, if the condition controls visibility on a form, and that form is being viewed in the context of a task, the "current" activity will always be that task.

Parameters

Many parameters described below require a specific data type to evaluate properly. You cannot call a user parameter for a date value, or a date parameter for a string value. This is especially important to remember if you're evaluating Form field system variables, since different Form fields have different data types.

For example, Date Picker fields can only return a datetime value, so only a datetime parameters can be evaluated for Date Picker controls. Input controls, on the other hand are much more flexible, and can be assigned text, numeric, and datetime values in their Field Properties settings. By default, Input controls

return the string data type. To properly evaluate an Input field using a parameter for a different data type, you'd need to change the Data Type property of the Input control to the data type that matches the parameter you wish to use.

For most use cases, BP Logix recommends that you use controls of the correct data type for the data you wish to store, e.g., a Date Picker to store date data or a User Picker to store user data, rather than using an Input control as a generic field to store different types of data.

Object Name Specifications

Many System Variables require that you specify the name of a specific Content List object for the System Variable to work properly. For instance, calling the number of times a Timeline Activity has run requires that you specify the name of the activity in the System Variable, using the syntax:

```
{ACTIVITY_NUM_TIMES_RUN:ActivityName}
```

...where ActivityName is the name of the Timeline Activity you are evaluating. If you use spaces in the Activity name, then you must enclose the name in quotation marks, e.g.:

```
{ACTIVITY_NUM_TIMES_RUN:"Activity Name"}
```

...to ensure that the name is parsed properly. Activity names that don't contain spaces may be referenced without the quotation marks.

As a best practice, you may wish to consider using quotation marks any time you reference an object name in a system variable.

Group Modifier

Most system variables can be configured via the “group” Modifier, which limits the results of a system variable such that it will return only results belonging to the specified group. Use the following syntax to add a group restriction to a SysVar tag:

```
{SYSTEM_VARIABLE, group=GroupName}
```

Encode Types

Encoding types are special characters put inside system variable tags to force the tag to return a certain type. These are often used to prevent improperly encoded values from breaking a query. The format used to specify an encode type is as follows:

```
{encode-typeSysVar}
```

Process Director v4.0 and higher can be set to automatically encode all System Variables on a Form as HTML, which eliminates the need to use the "!" encode symbol. To set this behavior as a default, you must set the DefaultHTMLEncode custom variable to "true". You can force Process Director not to encode as HTML by using the "|" encode symbol.

Where encode-type can be any one of the following symbols:

SYMBOL	DESCRIPTION
!	Encodes the result as HTML
$	Ensures the result is a valid SQL string
*	Converts the result into a valid SQL list of strings (e.g. 'string one', 'string two', 'string three')
#	Ensures the result is a valid SQL number
&	Converts the result to a URL encoded value
@	Ensures the result is valid for a calculation control or system variable tag
+	Ensures the result is a valid SQL Server date
–	Ensures the result is a valid Oracle date
^	Returns an LDAP encoded string which can be passed to an LDAP filter
~	Ensures the result is a valid string when used in LIKE comparisons in a WHERE clause
>	Ensures the result will render the string into a Windows filename-friendly format. E.g., if {FORM:fname} yields "a$b", then {>FORM:fname} yields "a_b".
|	Turns off the automatic HTML encoding for system variables used on a Form. **BP Logix does *not* recommend the use of this encoding option.**
`	Ensures the result is a JSON-encoded **datetime** value.
;	Ensures the result is a JSON-encoded **string** value.

Examples

```
SELECT * FROM MyTable WHERE col1 = '{$:text1}'
```

The $ encode will safely type the value of "text1" from:

```
Bob's Place
```

To:

```
Bob''s Place.
```

```
SELECT * FROM MyTable WHERE col1 LIKE '%{~:text1}%' ESCAPE '\'
```

When used in in a LIKE statement, the ~ encode type will perform the same safe encoding as the $ does. Additionally, when adding the ESCAPE clause to the SQL statement, values that require escapes for special characters will be added to the encoding. So, for a value of:

```
100%
```

The combination of the ~ encode and the ESCAPE clause in the example will produce an encoded value of:

```
100\%
```

In order to reduce security issues, Process Director v4.5 and higher issues a warning for using non-encoded System Variables in the SQL Statements used by Business Values or Custom Tasks. A Custom Variable setting, fAllowUnencodedSysvarsinBV, will, when set to "false", prevent users from saving any object that has unencoded variables in a SQL statement.

Pre, Post, and Null

Pre, post, and null are options specifying what text a system variable will display before the result, after the result, and if there is no result, respectively. Pre and post will display when the system variable result isn't null, and the null text will display otherwise. To specify the Pre, Post, and Null values in a SysVar tag, use the following format:

```
{SYSTEM_VARIABLE pre="Text before Var", post="Text after Var", null="Value if Null"}
```

String Cases and Substrings

String system variables can be manipulated by using case and substring Modifiers.

Examples:

The Case Modifier will convert string text into all upper case or lower case as desired.

```
{:someFormField, case=upper|lower}
```

The substring Modifier enables you to extract a desired substring by identifying the starting character location with the "subStart" Modifier, and the length of the substring with the "subLength" Modifier. The position of the "subStart" Modifier is zero-based, meaning that the first character position is 0, rather than 1.

```
//This syntax will render the string "abcdefghijklmnop" as "ghijklmnop".
{:someFormField, subStart=6, subLength=10}
```

The Case Modifier can also be used in conjunction with the substring Modifiers.

```
//This syntax will render the string "abcdefghijklmnop" as "GHIJKLMNOP".
{:someFormField, case=upper, subStart=6, subLength=10}
```

Pattern, Replace, and Trim

Pattern and Replace are Modifiers that can be added to any system variable. Data in the result of a system variable matching a regular expression specified in the Pattern Modifier will be replaced as specified in the Replace Modifier. See Microsoft's documentation on regular expressions in .NET for more information

regarding regular expressions. The Trim Modifier can also be added to any system variable. When set to 1, it will trim leading and trailing spaces off the result of the system variable.

Examples:

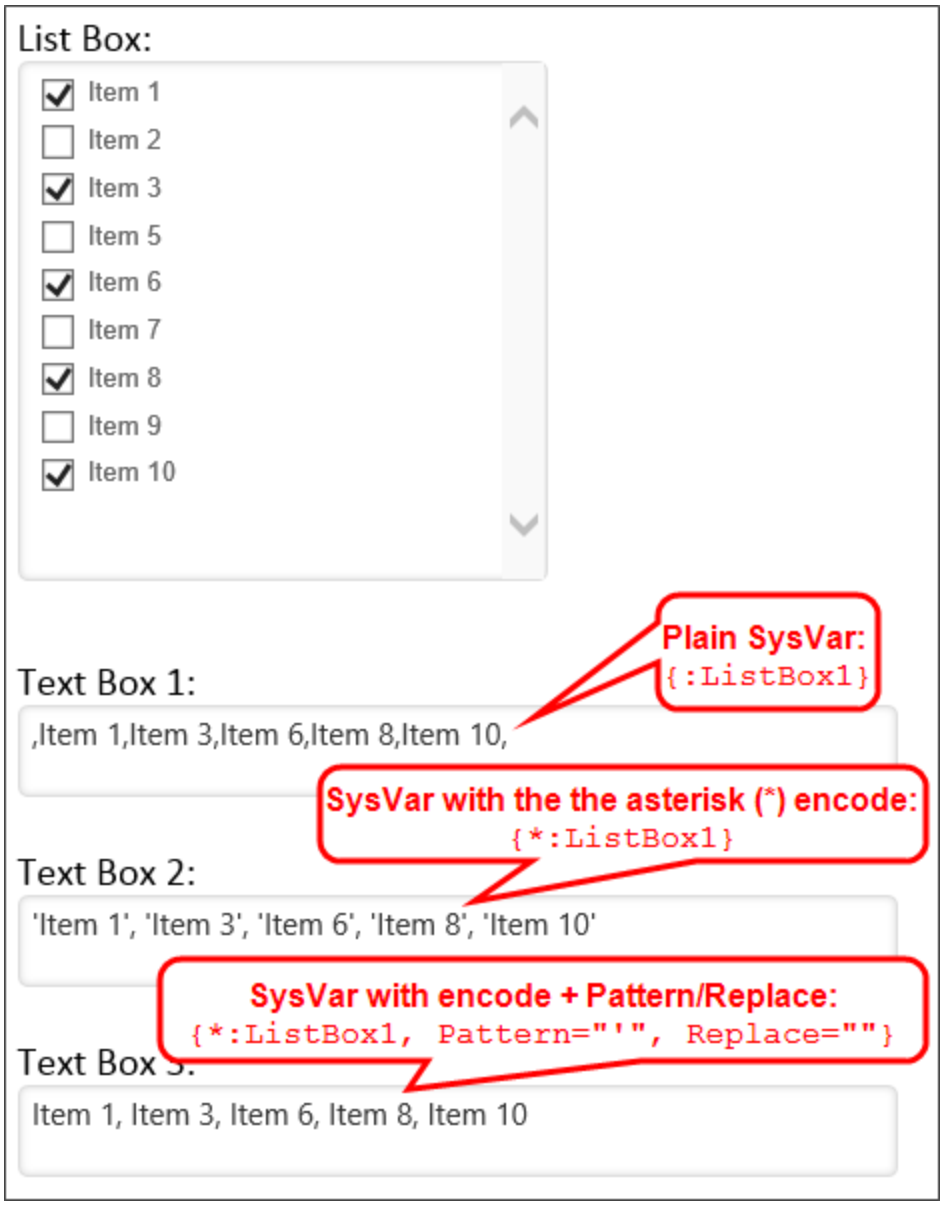
This Control Tag will replace the text “some text” in a form field with the text “other text”:

```
{:someFormField, Pattern="Some text", Replace="Other text", Trim=1}
```

This System Variable tag will remove any semicolons from the current user’s name:

```
{CURR_USER, Pattern=";", Replace=""}
```

You can also combine Encoding characters and Pattern/Replace together to modify strings. For instance, the sample below shows various ways to display the selected items from a ListBox.



String Index Position

For process Director v5.1 and higher, string variables enable you to use an "indexOf" modifier to return the 0-based index of the starting location for a specified substring. If the substring isn't found, this variable will return "-1". The substring search is case insensitive.

Example

In this example, a form field, "myField" contains the following text string: "I Do Approve This". To find the starting index of the substring "approve", the following syntax would be used:

```
{:myField, indexOf="approve"}
```

The System variable will, in this case, return "5".

Instance Modifier

Some System Variables return information about Timeline activities. These activities and steps may be run several times over the course of a process. Using the “instance” Modifier, you can specify which instance or instances of the activity you are referring to.

To get a total for all instances, set the instance Modifier to “all”. This will add up the results of the System Variable for every time the activity or step has run within a Timeline instance, and return a concatenated list of all users that have completed the activity, including all instances of that activity when it is iterating.

To get the value for the most recent instance, set the instance Modifier to 0. To get the value for the second most recent instance, set the instance Modifier to -1. To get the value for the third most recent instance, set the instance Modifier to -3, and so on.

To get the value for the first instance of the activity in the Timeline instance, set the instance Modifier to 1. To get the value for the second instance of the step or activity, set the instance Modifier to 2, and so on.

Examples:

```
{ACTIVITY_RUN_TIME:"Some Activity", instance=all}
```

This system variable will return the total time the activity has run in the Timeline instance.

```
{ACTIVITY_RUN_TIME:SomeActivity, instance=0}
```

This system variable will return the time it took the most recent instance of the activity to run in the Timeline instance.

```
{ACTIVITY_RUN_TIME:"Some Activity", instance=-2}
```

This system variable will return the time it took for the third most recent instance of the activity to run.

```
{ACTIVITY_RUN_TIME:SomeActivity, instance=1}
```

This system variable will return the time it took for the first instance of the activity to run in the Timeline instance.

Comma-Separated List (CSV) Strings

Any time a system variable returns a comma-separated list of values, you can use the modifier format=distinct to remove any duplicate values from the list.

Form Fields

A number of general formatting and value options apply to Form Field values.

Format:

`{FORM:SomeFieldName, format=Formatter}`

- **Currency:** Formats the system variable into a format representing currency. Applies only to fields configured as a "Number" data type, or to Calculation fields.
  A field containing the value "2245" would be displayed as "$2,245.00".
- **[.NET Format String]:** For form fields and case properties that are specified as a "Number" data type, you can use a .NET format string to format a numeric result. Process Director supports the .NET format strings described on MSDN here and here. For instance, you can use a format string to display a numeric field to 2 decimal places. In this example, a field value of "32.5675" would be displayed as "32.57" by using the syntax:
  `{FORM:MyNumberField, format="##.##"}`
  Similarly, a Calculation field can convert a field value of "0.2557" to "25.57%" by using the syntax:
  `{CALC, formula="{FORM:MyNumberField}*100", format="##.##"}%`
  Additionally, the Microsoft format string specifiers for numeric values can also be used. For instance, a value of "1052.0329112756" can be converted to a scientific (exponential) notation result of 1.052033E+003 by using the syntax:
  `{FORM:MyNumberField, format="E"}`
- **Value:** Returns the value of a dropdown field. This option is generally unnecessary, since the value of a Dropdown controls is returned by default, e.g., `{:FormFieldName}` will return the value selected in the Dropdown control.
- **String:** Returns the text in an Input field, or the displayed text of a Dropdown field.
- **Friendly:** When used in conjunction with a Form Field Picker, returns the friendly field name of a form field.
- **ClientID:** Returns HTML ID of the control suitable for JavaScript.
- **DisplayString:** Returns the displayed text of a Dropdown field instead of the value, e.g., `{:FormFieldName, format=DisplayString}`
- **Length:** Returns the length of a STRING value stored in a form field.
- **first_value:** Returns the first value saved in the field, ***when Form Field Auditing is enabled.***
- **prev_value:** Returns the immediately previous value saved in the field, ***when Form Field Auditing is enabled.***
- **name:** For a TabStrip control, this formatter will return the name of the active Tab, instead of the Tab ID.

- **count:** For Process Director v5.31 and higher, list controls that have multiple selection enabled, such as the UserPicker and List Box, as well as Input controls that display comma-separated lists, can use this formatter to return the number of items in the list.

ROW_NUM:

```
{FORM:SomeFieldName, ROW_NUM=2}
```

If this form control is part of an array, returns the value specified by the ROW_NUM Modifier. The Row Number Modifier can also be specific with a shorthand alias:

```
{FORM:SomeFieldName:2}
```

In this example, the row number is specified by the "`:2`" syntax.

Separator

```
{FORM:someColumnFieldName, SEPARATOR=|}
```

If this form control is part of an array, a list of users, or a list of groups, this option specifies which character will be used to separate the different values in the different elements of the array. By default, the separator is a comma. The Separator modifier can also be used for any list field that can use the "format=count" formatter.

Numerical System Variables

System variables that return numbers will have the following options:

Format

```
{FORM:SomeFieldName, format=FormatType}
```

- **Currency:** Formats the system variable into a format representing currency (e.g. $22.99).
- **Number:** Ensures that a system variable returns an integer.

Digits

```
{FORM:SomeFieldName, digits=Number}
```

Adding the formatter `digits=n`, where "n" is the number of digits, will return the number formatted as an n-digit number. This Modifier will PAD the form field value with 0's, and it won't truncate. Example usage: A numeric form field using the Modifier `{FORM:fieldname, digits=3}` and that contains the value "23" will return "023".

For v5.23 or higher, this formatter is available for use for any system variable, and will unconditionally convert any value to digits. Passing a non-numeric value will result in a n-digit number of 0s.

DateTime System Variables

System variables that return a datetime value have the several modifiers that enable a specified time increment to be added or subtracted from any system variable that returns a date value. For example, let's say you use a system variable that returns a datetime value like:

```
{ACTIVITY_START_DATE:ActivityName, BUSINESS_DAYS=10}
```

If the activity begins on December 1, 2023, this system variable will return a value of December 15, 2023, by adding 10 business days, as December 2-3 and December 9-10 are weekend days.

Similarly, you can use a negative value for the modifier to subtract time from a datetime value. For example:

```
{ACTIVITY_START_DATE:ActivityName, BUSINESS_DAYS=-10}
```

In this case, for an activity that begins on December 1, 2023, the system variable would subtract 10 business days to return a value of November 17, 2023.

The following date modifiers are available to implement this function.

- **YEARS:** adds a specified number of years to a DateTime or TimeSpan SysVar result.
- **MONTHS:** adds a specified number of months to a DateTime or TimeSpan SysVar result.
- **DAYS:** adds a specified number of days to a DateTime or TimeSpan SysVar result.
- **HOURS:** adds a specified number of hours to a DateTime or TimeSpan SysVar result.
- **MINUTES:** adds a specified number of minutes to a DateTime or TimeSpan SysVar result.
- **SECONDS:** adds a specified number of seconds to a DateTime or TimeSpan SysVar result.
- **BUSINESS_DAYS:** adds a specified number of business days to a DateTime or TimeSpan SysVar result.
- **BUSINESS_HOURS:** adds a specified number of hours to a DateTime or TimeSpan SysVar result. By default, business hours are from 8:00am to 6:00pm, but business hours can be configured in the vars.cs file via the BusinessHourStart and BusinessHourStop variables.
- **FULLYEARS:** Adds the number of full, 365-day years for a DateTime or Timestamp SysVar result.
- **FULLMONTHS:** Adds the number of full, 30.414-day months for a DateTime or Timestamp SysVar result.
- **FULLDAYS:** Adds the number of full, 24-hour days for a DateTime or Timestamp SysVar result.
- **OR NEAREST BUSINESS DAY:** This option instructs all date system variables to return the evaluated date if that date is a business day, and otherwise to return the previous or next business day, as directed. The time portion of the date value is unaffected, only the date portion is (potentially) modified. The syntax is `{DATETIME_VARIABLE, OrNearestBusinessDay=Prev|Next}`.

The Types YEARS, MONTHS, DAYS, HOURS, and MINUTES use "calendar" elapsed times, which is to say that, if a time span crosses a calendar date, it counts as a full increment of the selected calendar Type (Day, Month, etc.). For example, a time span from 11:59 PM on Dec 31 to 12:01 AM on Jan 1 is only a two-minute time span, but it will be counted as 1 day in DAYS, 1 month in MONTHS, or 1 year in YEARS. Any time span which crosses a date will be counted as a full increment of the Type chosen.

The Types FULLDAYS, FULLMONTHS, and FULLYEARS compare the time span to a pre-defined length of time. FULLDAYS returns 1 for every actual 24 hours elapsed, FULLMONTHS returns 1 for every 30.416 days, and FULLYEARS returns 1 for every 365 days. Using these Types, the time span from 11:59 PM on Dec 31 to 12:01 AM on Jan 1 would return 0 for all three types.

Format

Datetime system variables also have a format Modifier that can be used to determine how the date and time are displayed. The Format modifier can be set to any combination of the following options:

```
{FORM:MyDateField, format=option, years=numberOfYears, months=numberOfMonths...}
```

- **d:** displays the current day of the month as a number (1 – 31)
- **dd:** displays the current day of the month as a number, padding to two digits with a zero if necessary (01 – 31)
- **ddd:** displays the abbreviated name of the day (Sun. – Sat.)
- **dddd:** displays the full name of the day (Sunday – Saturday)
- **h:** displays the hour as 1-12. Without specifying AM or PM, 1:00pm is indistinguishable from 1:00am (and so on) with this formatting option.
- **hh:** displays the hour as 01-12. Padding using a zero is applied to ensure that the value returned is two characters long. Without specifying AM or PM, 1:00pm is indistinguishable from 1:00am (and so on) with this formatting option.
- **H:** displays the hour as 0-23.
- **HH:** displays the hour as 00-23. Padding using a zero is applied to ensure that the value returned is always two characters long.
- **m:** displays the current minute as a number 0 – 59
- **mm:** displays the current minute as a number 00 – 59. Left padding using a zero is added to ensure the return value is two characters long
- **M:** displays the month as a number 1 – 12
- **MM:** displays the month as a number 01 – 12. Left padding using a zero is added to ensure the return value is two characters long.
- **MMM:** returns the abbreviated name for the month (Jan. – Dec.)
- **MMMM:** returns the full name for the month (January – December)
- **s:** displays the seconds as a number 0 – 59
- **ss:** displays the seconds as a number 00 – 59. Padding using a zero is added to the left of the return value to ensure it is two characters long.
- **t:** displays an A if the time is before noon or P if it is after noon
- **tt:** displays A.M. if the time is before noon. Otherwise displays P.M.
- **y:** displays the year as a one or two digit number. The first two numbers of the year are always omitted. The third digit of the year is omitted if the year is between ’00 and ’09 (e.g. 1, 17, 93)
- **yy:** displays the last two digits of the year. (e.g. 48, 67, 73)
- **yyyy:** displays all four digits of the year. If the year is less than four digits long, zeros are added to pad the year value to four digits (e.g. 1982, 2009)
- **separators (/ : “ ‘):** quotation marks, apostrophes, colons, and slashes can be added to the datetime formatting. They will displayed literally, and can be used to separate different elements of the datetime string.
- **AUTO:** This option is valid for TimeSpan values only, and will format the result into the nearest logical unit of time for human consumption. The result will include a number as well as a unit of time. For example, a TimeSpan of 25 hours would evaluate to “1 day”, while a period of 2 hours would evaluate to “2 hours”.

Timespan System Variables

Timespan system variables return amounts of elapsed time. They are distinct from Datetime system variables in that they don't return specific points in time, but amounts (durations) of time. For example, let's calculate a Timespan between two dates:

- **Date 1:** 1/1/2015 8:00:15 AM
- **Date 2:** 8/18/2015 1:30:30 PM

The resulting Timespan returned from calculating the difference between these two dates would be "229.05:30:15 ", which is a duration of 229 days, 5 hours, 30 minutes, and 15 seconds.

Format

You can specify the format of Timespan system variables using the Format= option. The Format= option determines how the Timespan is displayed in text. The string specifying the format of a Timespan can have any text, and should also include at least one of the options below. Timespan formatters must be enclosed in square brackets, as shown below.

For each option below, we will use the sample Timespan of "229.05:30:15" to calculate the sample values.

- **[d]:** the days portion of the timespan (Sample value: 229).
- **[D]:** the duration of the timespan expressed in days, padded to two decimal places (Sample value: 229).
- **[h]:** the hours portion of the timespan (Sample: If the time is 5:47.21 am, the value will return: 5).
- **[H]:** the duration of the timespan expressed in hours (Sample value: 5501)
- **[m]:** the minutes portion of the timespan (Sample: If the time is 5:47.21 am, the value will return: 47).
- **[M]:** the duration of the timespan expressed in minutes (Sample value: 330090).
- **[s]:** the seconds portion of the timespan (Sample: If the time is 5:47.21 am, the value will return: 21).
- **[S]:** the duration of the timespan expressed in seconds (Sample value: 19805415).

Each of these options can be modified to pad the variable to two or three characters in length, by changing the format string from [x] to [xx] or [xxx] respectively. For example, to pad the seconds portion of the timespan to three characters in length, you'd use the format string [sss], and to pad the duration of the timespan in days to two characters in length, you could use the format string [DD].

Formatting strings can be concatenated into a single formatting string to return complex formatting results for a timespan system variable. For example, a DateDiff Form field (Form Control tag) formatted as:

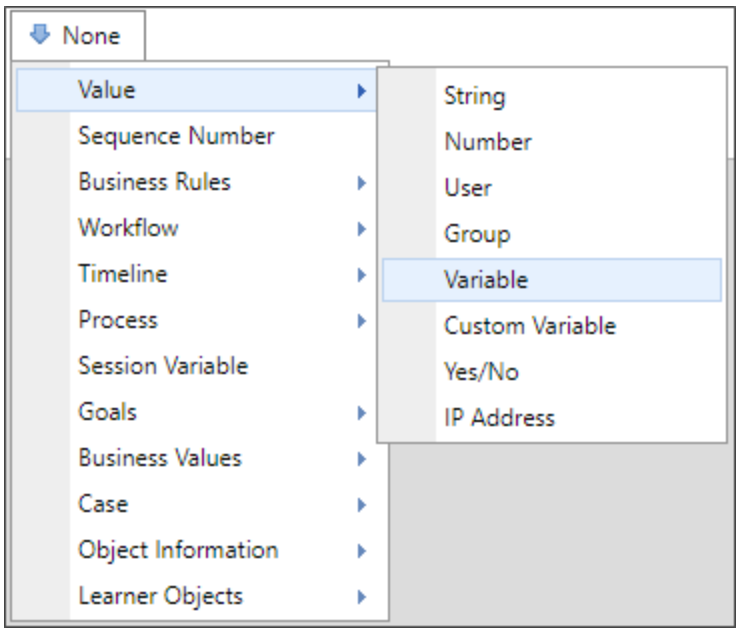
```
{DateDiff:FieldName, Date1=Date1, Date2=Date2,FORMAT="[d] days, [h] hours, [m] minutes"}
```

Might return the notional result:

```
2 days, 4 hours, 23 minutes
```

Generic Variables

Process Director enables you to create custom variable placeholders by using the generic Variable selector, or the generic `{VARIABLE:VarName}` syntax.



This feature enables you to create generic variables for use with URL parameters to set the default value of a field or to pass a filter parameter to a Knowledge View. Detailed explanations of how to use generic variables with URL parameters can be seen in the Knowledge View and Form topics. Additionally, this feature can be used to pass chart parameters, as described in the Drill down target section of the Charts topic that uses an example showing the `{VARIABLE:VarName}` syntax.

Attachment Number Variables

For Process Director v5.34 and higher, System Variables that return the number of attachments for Timelines (`TIMELINE_ATTACHMENT_NUM`), Forms (`FORM_ATTACHMENT_NUM`), etc., enable the use of wildcards and lists of group names in the system variables. For example, if you have two groups named "Final Drafts" and Final Documents", setting the wildcard for the group name as "Final%" will return attachments in both groups.

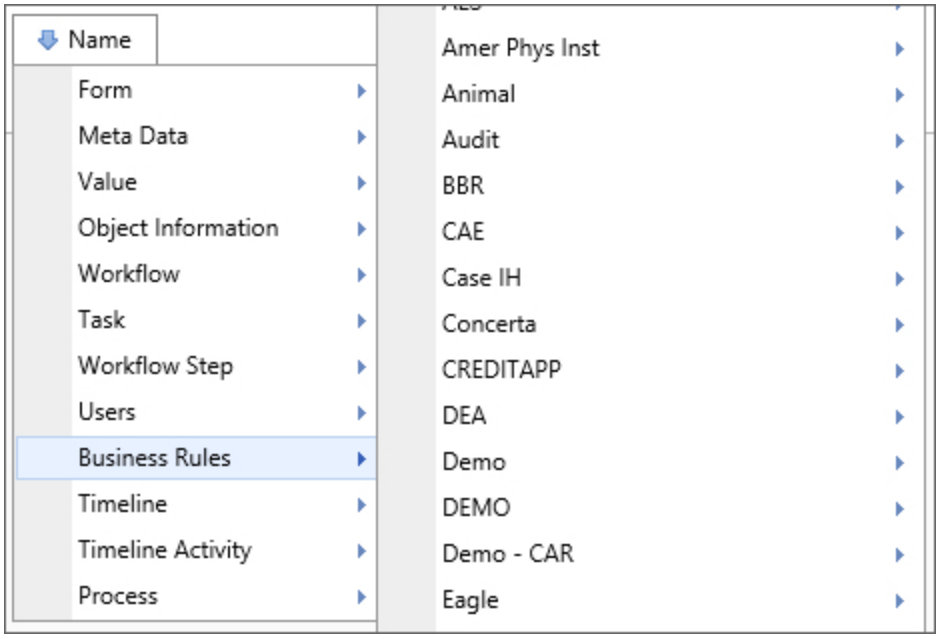
Example

```
{TIMELINE_ATTACHMENT_NUM, GroupName="Final%"}
```

Business Rule System Variables

Business rules that you create are added to the System Variables dropdown menu so that the Business Rule can be accessed in any place where system variables are used.

Business Rule



Returns

This system variable returns the result of a selected Business Rule.

SysVar Tag

```
{RULE:BusinessRuleName, $ParameterName=Value, format=FormatString}
```

Parameters

BusinessRuleName: The name of the Business Rule whose value you wish to return.

$ParameterName (Optional): A Business Rule can be configured to accept one or more custom parameters in the Parameters section of the Business Rule definition. Business Rule custom parameters can only be accessed via System Variables. There is no UI convention for passing a paramater value, such as there is for Business Values. A custom parameter can be passed as the parameter name configured in the Business Rule, and the name must be preceded by the `$` encoding character. As an example, let's say you have a Business Rule named CheckCustomerState, which has a custom parameter named StateName, which accepts the text name of a US state. You could call this Business Rule via system variable with the syntax:
`{RULE:CheckCustomerState, $StateName=Texas}`. Please see the Business Rules topic of the Implementer's guide for additional information.

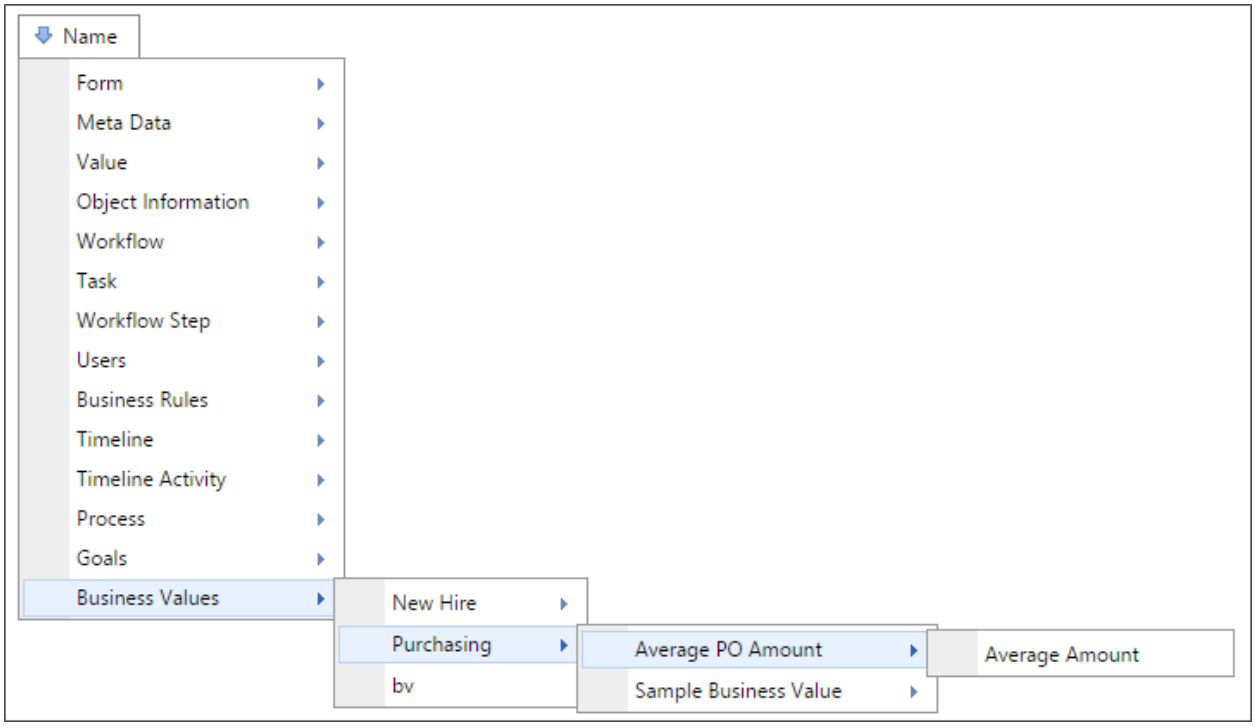
Modifiers

Format: The result of this system variable can be formatted according to the options available to the type of data the Business Rule returns. A rule can be formatted as a currency using the `format=currency` modifier, for example.

Business Values System Variables

Business Values that you create are added to the System Variables dropdown menu so that the Business Value can be accessed in any place where system variables are used.

Business Value



Returns

This system variable returns the result of a selected Business Value.

SysVar Tag

```
{BUSINESS_VALUE:BusinessValueName.PropertyName, $ParameterName=Value, Format=currency}
```

The result of this system variable can be formatted according to the options available to the type of data the Business Rule returns.

Parameters

BusinessValue.Name: The dot-notation name of the Business Value property you wish to return, e.g., "MyBusinessValue.MyProperty".

Modifiers

$ParameterName: Since Business Values are often database-driven, an optional parameter can be used to retrieve the appropriate data, and the name of the parameter is configured in the Business Value

definition. To use the parameter in a system variable, the parameter name is always proceeded by a dollar sign, e.g., `$ParameterName`. The parameter name and value must be passed as a name/value pair, in the format:

```
$ParameterName=Value
```

So, if you have a parameter named "Category" and you want to set the value of the Category parameter to "Furniture", then you'd use the syntax:

```
$Category=Furniture
```

The value of the parameter can be passed manually, or through another system variable, such as a form field variable.

Passing a Parameter Value Manually

```
{BUSINESS_VALUE:BusinessValueName.PropertyName, $ParameterName=Value}
```

Passing a Parameter Value via System Variable

```
{BUSINESS_VALUE:BusinessValueName.PropertyName, $ParameterName={FORM:FormFieldName}}
```

Format (Optional): Business Values will accept the `format` parameter set to `currency`.

Alternate Syntax

The Business Value will also be correctly returned using the alternate syntax options below:

```
{BV:BusinessValueName.PropertyName}
{BIZVAL:BusinessValueName.PropertyName}
{BUSINESSVALUE:BusinessValueName.PropertyName}
```

Case Management System Variables

Case

Returns

The value of the specified Case Property Name.

SysVar Tag

```
{CASE:PropertyName, true="value1", false="value2", format=FormatType}
```

Modifiers

true/false: For Case system variables that represent a checkbox value on a Form, you can use the "true" and "false modifiers to assign true and false values, just as you do on a checkbox for a Form.

format: This parameter accepts the argument `value` for Case properties that are derived from a Drop-down control. By default, the Case system variable will return the display string of the property. Specifying `format=value` will return the actual value of the dropdown.

Alternate Syntax

```
{CASE_PROP:PropertyName}
```

```
{CASE_PROPERTY:PropertyName}
```

Case Attachments

Returns

This system variable returns a comma-separated list of object names attached to this Case instance.

SysVar Tag

```
{CASE_ATTACHMENTS, ShowName=1, ShowDesc=0, ShowID=0, GroupName=Group}
```

Modifiers

Groupname: Filters the results returned by group, and only returns items that match the specified group.

ShowName: The option is set to 1 by default. When set to 1, it will display the name of the attachment.

ShowDesc : The option is set to 0 by default. If set to 1, it will display the attachment's description.

ShowID : The option is set to 0 by default. If set t 1, it will display the object's internal ID.

If both `ShowName` and `ShowDesc` are set to `1`, each attachment will be returned in the format "name : description".

Case Attachment Size

Returns

This system variable returns the cumulative size of all documents attached to the Case.

SysVar Tag

```
{CASE_ATTACHMENT_SIZE, groupname=GroupName}
```

Modifiers

groupname: The option can be used to have the system variable return the cumulative size of only the documents in the specified group.

Case Definition Name

Returns

The string name of the case definition used by the case instance.

SysVar Tag

```
{CASE_DEF_NAME}
```

Case Instance ID

Returns

The string ID of the case that is currently in context.

SysVar Tag

```
{CASE_INSTANCE_ID}
```

Case Instance Name

Returns

The string name of the Case instance that is in context.

SysVar Tag

```
{CASE_INSTANCE_NAME}
```

Alternate Syntax

```
{CASE_NAME}
```

Case Instance URL

Returns

The string URL of the case Instance.

SysVar Tag

```
{CASE_INSTANCE_URL}
```

Case Submitter

Returns

The User object of the user who created the case instance.

SysVar Tag

`{CASE_SUBMITTER}`

Alternate Syntax

`{CASE_SUBMIT_USER}`

Case Submit Date

Returns

The Datetime value of the date the case was submitted.

SysVar Tag

`{CASE_SUBMIT_DATE}`

In Case Context

Returns

A boolean value of "true" if the operation is in the context of a Case.

SysVar Tag

`{IN_CASE_CONTEXT}`

In Case Folder View

Returns

A boolean value of "true" if an object—usually a Form—is being displayed in a Case Folder.

SysVar Tag

`{IN_CASE_FOLDER_VIEW}`

Alternate Syntax

`{CASE_FOLDER_VIEW}`

In Dashboard View

Returns

A boolean value of "true" if an object—usually a Form—is being displayed in a Dashboard.

SysVar Tag

`{IN_DASHBOARD_VIEW}`

Alternate Syntax

```
{DASHBOARD_VIEW}
```

Num Case Attachments

Returns

This system variable returns the number of attachments to a Case instance.

SysVar Tag

```
{CASE_ATTACHMENT_NUM, ObjectType=Document|Form, CSStatus=Pending|NotPending|Failed|Done|PendingOrFailed, GroupName=Group}
```

Modifiers

ObjectType: Restricts this system variable's results by object type. Acceptable values are `document` and `form`.

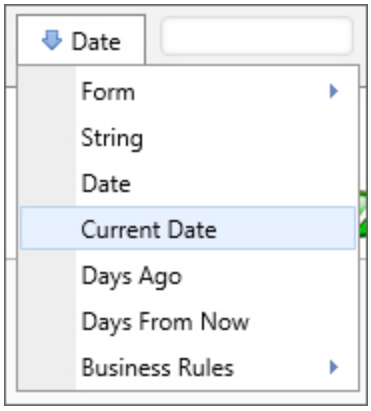
CSStatus: The option is available with Concept Share integration. When a value is specified, the system variable will return only the number of documents matching that stated. If `Failed` is selected, this system variable will return the number of documents that failed to upload to Concept Share.

GroupName: The option limits the system variable such that it only returns the number of attachments in the specified group.

DateTime System Variables

System variables that return a DateTime value will have the universal formatting options to perform date calculations specified in the DateTime section of the System Variable parameters topic. System variables that return a Timespan value will have the universal formatting options specified in the Timespan section of the System Variable parameters topic.

Current Date



Returns

This system variable returns the date (or date component) at the moment the system variable is evaluated.

SysVar Tag

`{CURR_DATE}`

`{CURR_DATETIME}` (for the time as well)

`{CURR_TIME}` (for just the time)

You can also return a date component of the current date by using the following syntax:

`{CURR_ YEAR|CURR_ MONTH|CURR_ WEEK|CURR_ DAYOFYEAR|CURR_ DAY|CURR_ DAYOFWEEK|CURR_ HOUR|CURR_MINUTE}`

Each component system variable will return the appropriate numeric value when evaluated. For example, if the data is January 1, 2019, the following returns could be expected:

`{CURR_YEAR}` returns 2019

`{CURR_MONTH}` returns 01

`{CURR_DAYOFYEAR}` returns 01

Modifiers

This system variable can be formatted according to the options available to all datetime system variables.

The Current Date System Variable has an additional modifier, `days`, that is treated as a separate system variable in the product's UI. Please see the Days Ago/Days From Now topic for more information on this modifier.

Optional Tags

The Current Date/Time/Month.Year, etc., will also be correctly returned using the alternate syntax options below:

```
{CURRENT_DATE}
{CURRENT_DATETIME}
{CURRENT_TIME}
```

And so forth.

Current GMT Offset

Returns

This variable returns the offset (in minutes, hours, or seconds) between local time and Greenwich Mean Time (GMT), also known as Coordinated Universal Time (UTC). Process Director stores all times in GMT/UTC, and, in most cases automatically converts GMT/UTC to local time when times and dates are displayed to users. In some cases, Business Values or other data sources that use the raw time value from the Process Director database will display the GMT/UTC time rather than the local time. This variable enables you to determine the time difference between local time and GMT/UTC, in order to perform the appropriate time conversions manually.

SysVar Tag

```
{CURR_GMTOFFSET, format=hours|minutes|seconds}
```

Modifiers

format: The result of this form field SysVar tag can be formatted according to the options available for datetime SysVar tags.

Sample

If you are in Pacific Standard Time Zone, the following syntax will return "-8" in most cases, indicating that the time is 8 hours behind GMT/UTC. Britain and the US enter Daylight Savings Time on slightly different dates, so the value will vary +-1 hour, depending on those dates.

```
{CURR_GMTOFFSET,format=hours}
```

Optional Tags

The Current GMT Offset will also be correctly returned using the alternate syntax option below:

```
{CURRENT_GMTOFFSET, format=IncrementType}
```

Date

Returns

This option allows the user to specify a datetime from a datetime picker. While not technically a system variable, information about a date can be gathered via SysVar tags by referencing a date picker.

SysVar Tag

```
{FORM:someDateTimePicker}
```

Parameters

someDateTimePicker: The name of a DateTime Picker control on a form.

Modifiers

The result of this form field SysVar tag can be formatted according to the options available for form field SysVar tags.

Date Difference

Returns

This system variable is used ***for Forms only***, to return the difference between two datetime values. For performing date calculations in other contexts

SysVar Tag

```
{DATEDIFF,  DATE1= [someDate],  DATE2= [someOtherDate],  TYPE=YEARS|MONTHS|DAYS|HOURS|
MINUTES|SECONDS|BUSINESS_     DAYS|BUSINESS_     HOURS|FULLDAYS|FULLMONTHS|FULLYEARS,
INCLUDEENDDATE=true|false}
```

Modifiers

DATE1 (Required): The first date to compare.

DATE2 (Required): The second date to compare.

TYPE: Using the "Type=" parameter, this system variable can return the difference in years, months, days, minutes, seconds business days, or business hours.

INCLUDEENDDATE: When using the "IncludeEndDate= " parameter, the value can be true or false. The default is false. If this value is set to true, the system will include the "end date" in the date diff calculation. This will take into account the "business days" parameter and only include the end date if it falls on a business day.

Date Difference (Email)

Returns

This system variable is used ***for email templates only***, to return the difference between two datetime values.

SysVar Tag

```
{DATEDIFF_ SYSVAR, DATE1= [someDate], DATE2= [someOtherDate],
TYPE=YEARS|MONTHS|DAYS|HOURS|MINUTES|SECONDS|BUSINESS_ DAYS|BUSINESS_ HOURS|
FULLDAYS|FULLMONTHS|FULLYEARS, INCLUDEENDDATE=true|false}
```

Modifiers

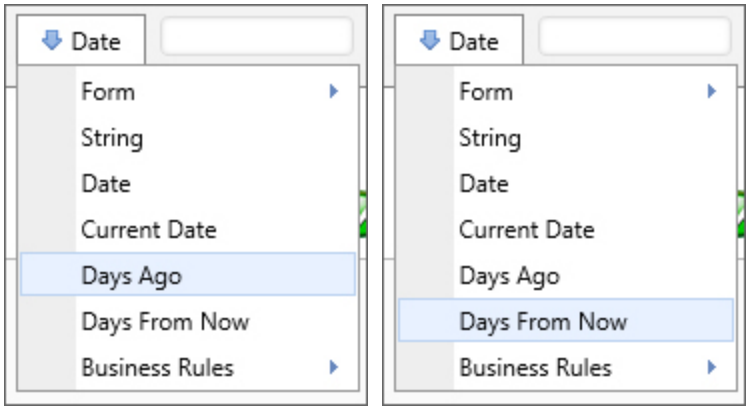
DATE1 (Required): The first date to compare.

DATE2 (Required): The second date to compare.

TYPE: Using the "Type=" parameter, this system variable can return the difference in years, months, days, minutes, seconds business days, or business hours.

INCLUDEENDDATE: When using the "IncludeEndDate= " parameter, the value can be true or false. The default is false. If this value is set to true, the system will include the "end date" in the date diff calculation. This will take into account the "business days" parameter and only include the end date if it falls on a business day.

Days Ago/Days From Now



Returns

These two items appear as separate system values in the product UI, as shown in the screen shots above, but they're both an implementation of the Current Date, using the "days" formatter. These items are provided in the Date dropdown menu in the Condition Builder for your convenience, so you can return a date that matches a specified number of days prior to or subsequent to, the current date, without having to manually format a System Variable. In other contexts, where this menu isn't available, you could use manually created system variables to achieve the same result.

To show dates prior to the current date, you'd use a negative value, while showing future dates would require using a positive value. For instance, to show the date two days ago using a manually typed system variable, you'd use the syntax:

```
{CURR_DATE, days=-2}
```

Similarly, to show the date two days from now, using a manually typed system variable, you'd use the syntax:

```
{CURR_DATE, days=2}
```

SysVar Tag

Days Ago

`{CURR_DATE, days=-N}`

Days From Now

`{CURR_DATE, days=N}`

Optional Parameters

This system variable can be formatted according to the options available to datetime system variables.

Is Business Day

Returns

This system variable returns True if the evaluated date is a business day. The default date the variable evaluates is the current date.

SysVar Tag

`{IS_BUSINESS_DAY}`

`{IS_BUSINESS_DAY, Date=DateTimeValue}`

`{IS_BUSINESS_DAY:DateTimeValue}`

Modifiers

Date: A DateTime value other than the current date, which you wish to be evaluated. Omitting this variable will cause the variable to evaluate the current DateTime. You can omit the modifier by using the syntax `{IS_BUSINESS_DAY:DateTimeValue}`

Is Business Hour

Returns

This system variable returns True if the evaluated DateTime value falls within business hours. Since this variable only evaluates times, you must first use the `IS_BUSINESS_DAY` variable to determine if the date is a business day, prior to using this variable to determine whether the time falls within business hours. So, for a given datetime value, both `IS_BUSINESS_DAY` and `IS_BUSINESS_HOUR` must return true to determine that the DateTime value actually occurs during business hours.

SysVar Tag

`{IS_BUSINESS_HOUR}`

`{IS_BUSINESS_HOUR, Date=DateTimeValue}`

`{IS_BUSINESS_HOUR:DateTimeValue}`

Modifiers

Date: A DateTime value other than the current date, which you wish to be evaluated. Omitting this variable will cause the variable to evaluate the current DateTime. You can omit the modifier by using the

syntax `{IS_BUSINESS_HOUR:DateTimeValue}`

Is Business Date

Returns

This system variable returns True if the evaluated DateTime value is a business date and time. Unlike `IS_BUSINESS_DAY` and `IS_BUSINESS_HOUR`, this variable evaluates both the date and time.

SysVar Tag

`{IS_BUSINESS_DATE}`

`{IS_BUSINESS_DATE, Date=DateTimeValue}`

`{IS_BUSINESS_DATE:DateTimeValue}`

Modifiers

Date: A DateTime value other than the current date, which you wish to be evaluated. Omitting this variable will cause the variable to evaluate the current DateTime. You can omit the modifier by using the syntax `{IS_BUSINESS_DATE:DateTimeValue}`

Email System Variables

Email Anonymous Task List URL

Returns

This system variable returns the URL to a task list that can be used to see the task list for an anonymous user, based on the user's email address. To use this variable, the option "Allow anonymous users to be assigned tasks by email address" has to be turned on in the Advanced Options of the Process Timeline activity.

This variable requires a "kvid" parameter that identifies the Knowledge View ID of a Task List partition Knowledge View . No filter is needed on the Knowledge View to identify the user, as the variable will filter the Task List items to display only those that match the user's email address.

Of course, the task list Knowledge View will need appropriate permissions set to allow anonymous users to view it.

SysVar Tag

There are two methods to set the required KVID parameter in the variable.

Since you usually only need one Knowledge View in your Process Director Installation to generate the task list for anonymous user, there is a universal method to set the value of the KVID when you place the variable in an email template. Simply set the value as a Custom variable in the vars file as described in the Creating Your Own Custom Variables section of the Developer's Guide. The sample syntax for setting this variable might be:

```
bp.Vars["TaskListKV"] = "KViewID";
```

Once the custom variable has been set, it can be referenced in the "kvid" parameter as:

```
{EMAIL_ANON_TASKLIST_URL, kvid={CUSTOMVAR:TaskListKV}}
```

This is the recommended method for setting the KVID.

The second method for setting the KVID is simply to pass the KVID directly in the email template. A Knowledge View with the KVID of "ea89390c-53b7-44dc-b6cb-12938efbc236" could be called by using the syntax:

```
{EMAIL_ANON_TASKLIST_URL, kvid=ea89390c-53b7-44dc-b6cb-12938efbc236}
```

The drawback to this method is that if the variable is widely used in different email templates, and you want to change the partition Knowledge View that displays the Task List, you'll need to replace the old KVID with the new one *in every email template where it is used*, versus simply changing the value of the variable in the vars file

Either way, any time you import the email template from a development to a production system, you'll need to manually edit the KVID, as the ID will be different on the production system.

Modifiers

kvid: The Knowledge View ID of the partition Knowledge View that generates the task list for the anonymous user.

Access to Process Director for unauthenticated or anonymous users is enabled by an optionally licensed component.

Email Complete URL

Returns

This system variable returns the URL of the page to automatically complete the task.

SysVar Tag

```
{EMAIL_COMPLETE_URL, action="TaskName", Confirm=1, Comments=1}
```

Modifiers

Action: the name of the task to complete. If unspecified, the user will be given a dropdown of the tasks to complete.

Confirm (Optional): If set to 1, a web page will be shown prompting the user to confirm that he wants to complete the task. By default, this is set to "0".

Comments (Optional): If set to 1, a text box will appear allowing the user to enter comments. By default, this is set to "0".

Email Error Status

Returns

This system variable will return a string explaining why the a user completing a task via email (via the Email Actions Custom Task) was unable to do so. For example, the sysvar will indicate that the task had already been completed, or was not configured for email approval. {EMAIL_ERROR_STATUS} will be blank if the task succeeded. This sysvar is only available within the Email Actions Custom Task.

SysVar Tag

```
{EMAIL_ERROR_STATUS}
```

Email Form Instance URL

Returns

This system variable returns the URL to the form instance or process activity that sent this email.

SysVar Tag

```
{EMAIL_ FORM_ INSTANCE_ URL, CompletePage="URL", CompletePagePrompt=0,
CompleteText="SomeTextString", NoHome=1, AddProcessID=ProcessID}
```

Modifiers

All modifiers for this System Variable are optional.

CompletePage: The full URL of the page to navigate to after the task is completed.

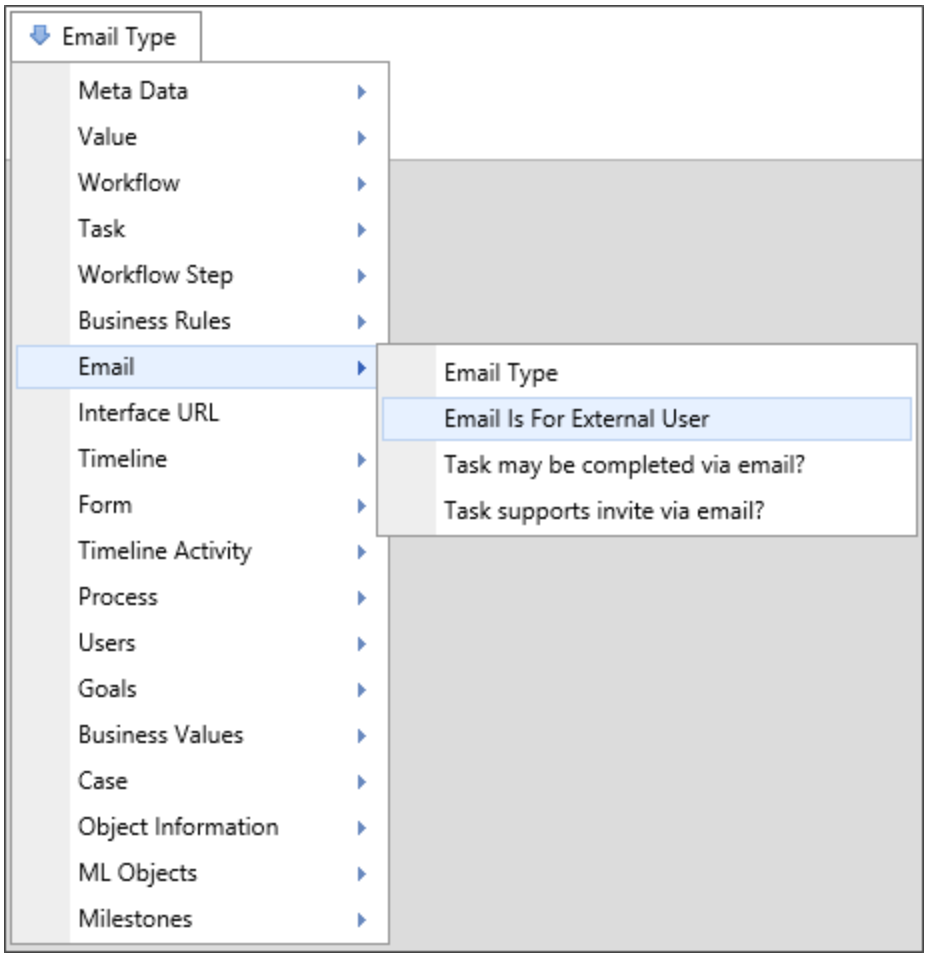
CompletePagePrompt: Set to 0 to prevent a confirmation prompt from displaying. By default, this is set to "1".

CompleteText: text to display after the task is completed

NoHome: Set to 1 to prevent the home page from displaying when the task link is clicked. By default, this is set to "0".

AddProcessID: Adds the ID of the process sending this email to the email URL. This allows the link to associate the form instance with the process, such that the correct attachments, routing slip, etc. are displayed. By default, this is set to "0".

Email is For External User



Returns

This system variable returns a Boolean value reflecting whether the user being emailed is an external user or not.

SysVar Tag

```
{EMAIL_EXT_USER}
```

Email Reminder Description

Returns

This variable returns the reason the email reminder has been generated, as configured in the dropdown value of the notification settings in the Timeline Activity.

SysVar Tag

```
{EMAIL_REMINDER_DESC}
```

Email Result Links

Returns

This system variable returns a list of the URLs of the branches or activity results from the task that sent this email.

SysVar Tag

```
{EMAIL_RESULT_LINKS, comments=1, confirm=1, separator="|", icon=1}
```

Modifiers

All modifiers for this System Variable are optional, though **using the Separator option is highly recommended for readability**.

Confirm: If set to 1, which is the default value, prompts a user to confirm that he wants to take this branch.

Comments: If set to 1, a text box appears allowing the user to enter comments. The default value is "0".

Separator: Specifies arbitrary text or HTML to separate each link. HTML tags must be enclosed in square brackets. For example, `separator="[br/]"` would put a new line between each link. Failing to use a Separator will cause the results text options to display without spaces or other punctuation between each item, which will be confusing to end users.

Icon: Determines if the link returned links to an icon (if set to 1) or the branch or activity result (if set to 0). The default value is "0".

Email Result List

Returns

This variable returns a list of the potential branches or activity results from this task.

SysVar Tag

```
{EMAIL_RESULT_LIST, separator="TextOrHTML"}
```

Modifiers

Separator: Specifies arbitrary text or HTML to separate each result. HTML tags must be enclosed in square brackets. For example, `separator="[br/]"` would put a new line between each link.

Email Task ID

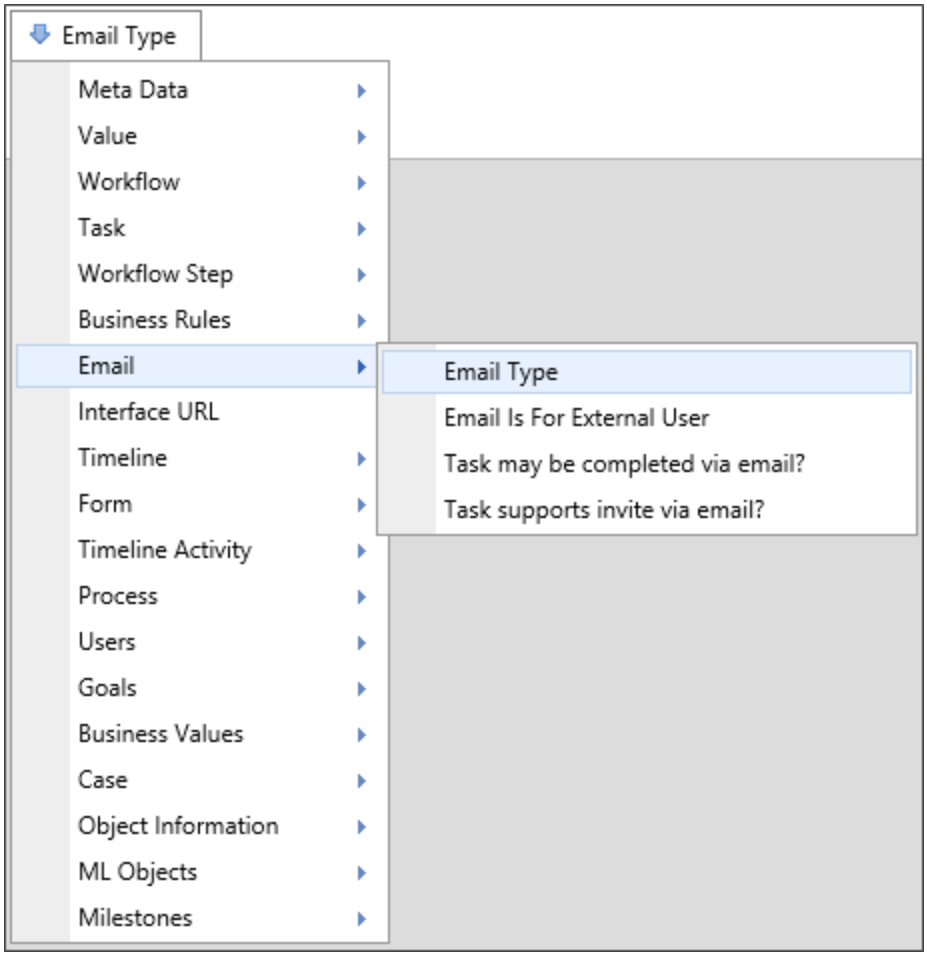
Returns

Replaced with a tag indicating the task list used to send this email.

SysVar Tag

`{EMAIL_TASK_ID}`

Email Type



Returns

This variable returns an integer that indicates the type of email notification email being sent. The following email types are returned:

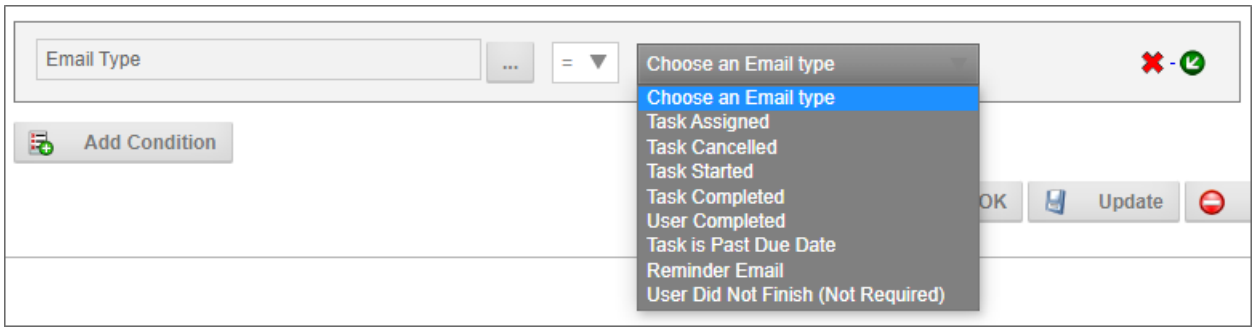
- **0 - NotSet:** An email notification sent outside of the context of the process or task.
- **1 - TaskAssignment:** An email notification sent when a task is assigned.
- **2 - Reminder:** An email notification sent as a reminder because the task was not completed in time.
- **3 - Timeout:** An email notification sent when a timeout occurs.
- **4 - Canceled:** An email notification sent when a user is canceled, reassigned, or removed from running step.
- **5 - StepStart:** An email notification sent when a step or activity is started, but is NOT a Task Assignment notification to the assignee.
- **6 - StepStop:** = An email notification sent when a step or activity is ended.
- **7 - PredictedLate:** = This activity is predicted to be late
- **8 - UserCompletes:** An email notification sent when the user completes the assigned task.
- **9 - UserDidNotFinish:** An email notification sent when a user did not finish a task, e.g., the user was not needed because another user caused the step to complete.
- **10 - CalendarInvite:** An email notification sent via the Send Calendar Invite Custom Task.

SysVar Tag

`{EMAIL_TYPE}`

UI Appearance Note

When the Email Type System Variable is invoked in the Condition Builder, the UI text options use Friendly Names that vary from the text shown above.



The UI options correspond to the values listed below:

- **Choose an Email Type:** 0
- **Task Assigned:** 1
- **Task Cancelled:** 4
- **Task Started:** 5
- **Task Completed:** 6
- **User Completed:** 8
- **Task is Past Due Date:** 3
- **Reminder Email:** 2
- **User Did Not Finish (Not Required):** 9

Email Unsubscribe URL

Returns

This system variable returns the URL of the Unsubscribe page that enables users to opt-out of receiving task notification emails for a specified process. Generally, this variable will be added to an email template to enables the user to opt out of further notifications from that process.

SysVar Tag

```
{EMAIL_UNSUBSCRIBE_URL}
```

Email URL

Returns

This system variable returns the URL of the task to which the email notification refers, if the user is in the context of a task. If the user isn't in task context, the returned URL will most likely be the default form instance for the process, which the user can view, but not use to complete a task.

This system variable can be put in HTML tags for use in hyperlinks.

SysVar Tag

```
{EMAIL_URL, CompletePage="URL", CompletePagePrompt=0, CompleteText="SomeTextString", NoHome=1}
```

Modifiers

All modifiers for this System Variable are optional.

CompletePage: the full URL of the page to navigate to after the task is completed.

CompletePagePrompt: set to 0 to prevent a confirmation prompt from displaying.

CompleteText: Text to display after the task is completed.

NoHome: Set to 1 to prevent the home page from displaying when the task link is clicked.

Email User

Returns

This User system variable returns the user to whom the email message is being sent.

SysVar Tag

```
{EMAIL_USER}
```

This system variable should always be used in email templates to return the name of the task user for that email notification. Do not use CURR_USER in email templates for this purpose.

Incoming Email

Returns

This system variable is usable only within the Email Actions Custom Task. When a user responds to a task assignment via email, the Custom Task will processes the email, and will extract the sender's email address, subject, and body. The system variable can return any of the extracted data through the use of the format parameter.

SysVar Tag

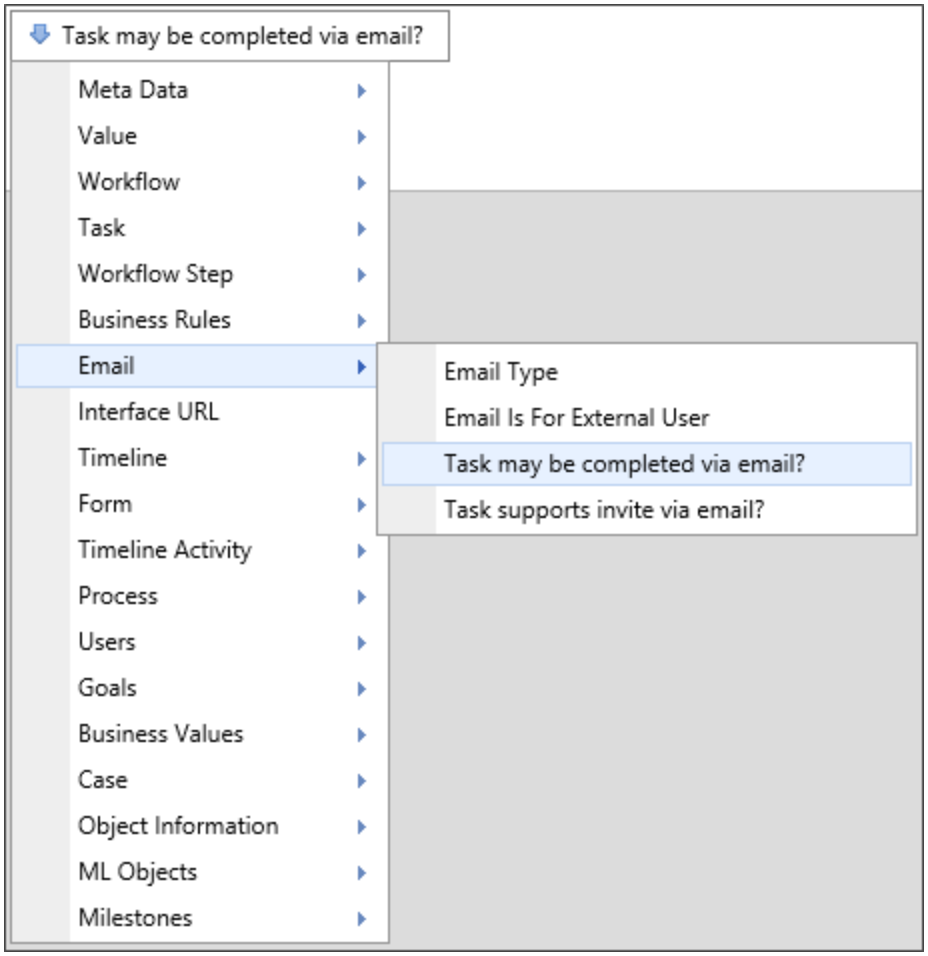
```
{INCOMING_EMAIL, format=Subject|From|To|Body}
```

Modifiers

Format: The Format parameter is used to determine the email data that the system variable returns. The possible formatting options are:

- **Subject:** The subject of the email message.
- **From:** The sender's email address.
- **To:** The Recipient's email address.
- **Body:** the body text of the email.

Task may be completed via Email?



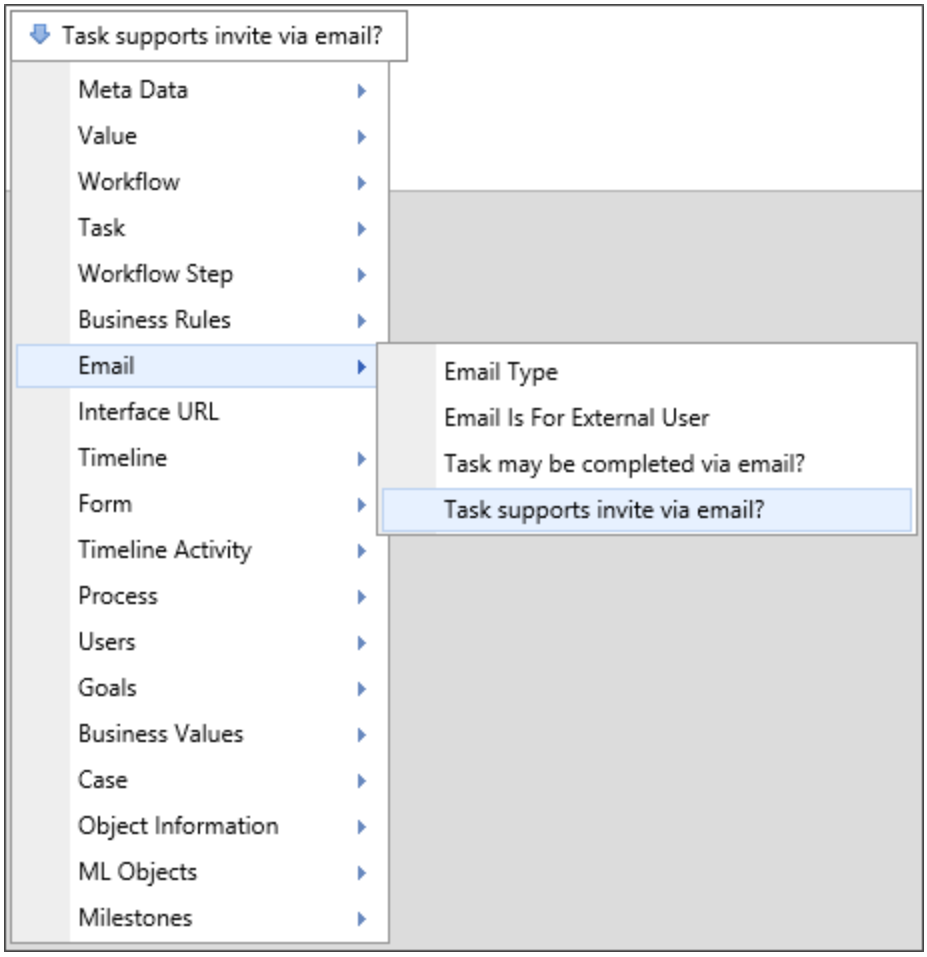
Returns

This system variable returns a Boolean value that specifies whether a task can be completed via email.

SysVar Tag

`{EMAIL_COMPLETION_OK}`

Task supports invite via Email?



Returns

This system variable returns a Boolean value that specifies whether a task can be forwarded to another user for assignment.

SysVar Tag

`{EMAIL_INVITATION_OK}`

Task User Email

Returns

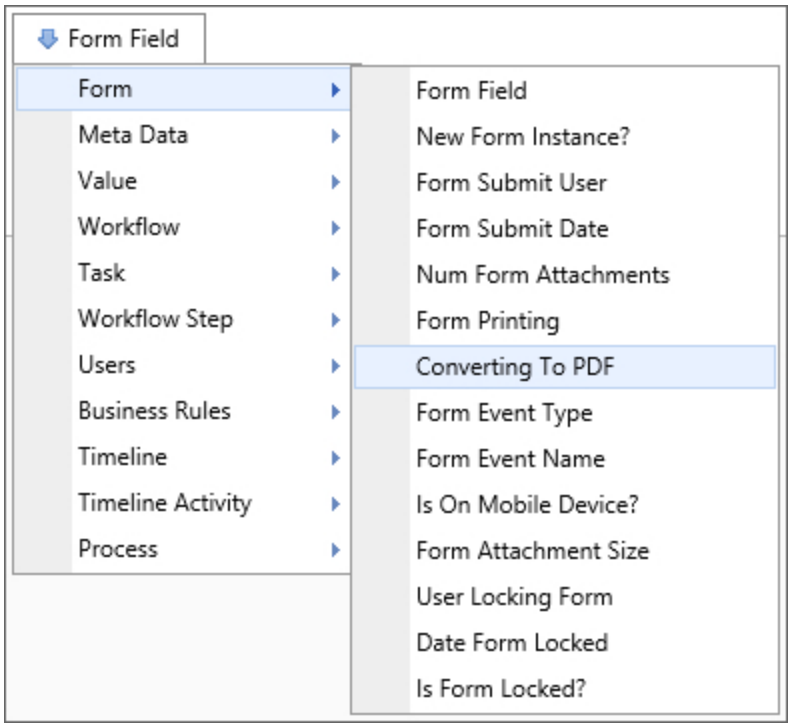
This system variable returns the email of the current Task List user. This is useful for anonymous user tasks and displaying information in a KView column.

SysVar Tag

```
{TASK_USER_EMAIL}
```

Form System Variables

Converting To PDF



Returns

This system variable returns a Boolean value reflecting whether or not the Form is being converted to a PDF. Use this system variable to change is displayed on PDF versions of a Form.

SysVar Tag

```
{FORM_TO_PDF}
```

Current Tab

Returns

This system variable returns the Tab ID, or, with the appropriate modifier, the Name of the currently selected tab in a specified TabStrip control.

SysVar Tag

```
{CURR_TAB, tab=TabStripName, format=name}
```

Modifiers

tab: This required string modifier contains the name of the TabStrip control you wish to evaluate to determine the currently selected tab.

format=name: This optional modifier will return the Name of the current tab, instead of the Tab ID.

Alternate Syntax

```
{CURRENT_TAB, tab=TabStripName}
```

> You can also return the current tab using the form field system variable for the TabStrip control as well, e.g., `{:TabStripName}`. For most use cases, this is probably the simplest method of returning the current tab's name.

Form Attachment Group

Returns

This system variable returns the name of a group that an attached object is in.

SysVar Tag

```
{FORM_ATTACHMENT_GROUP}
```

Form Attachments

Returns

This system variable returns a comma-separated list of object names attached to this form instance.

SysVar Tag

```
{FORM_ATTACHMENTS, ShowName=1, ShowDesc=0, ShowID=0, GroupName=Group}
```

Modifiers

Groupname: Limits the system variable such that it only returns a list of objects in the specified group.

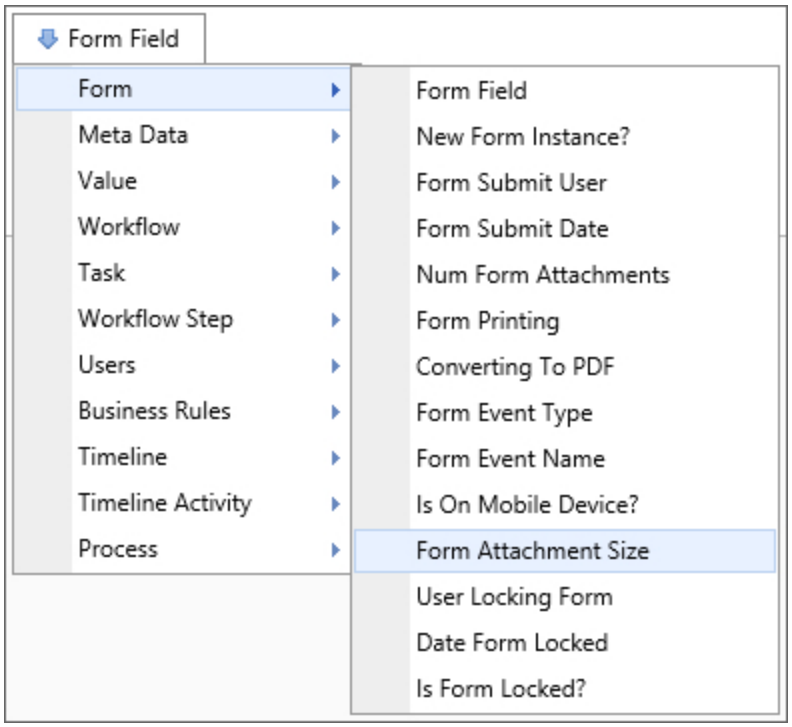
ShowName: The option is set to 1 by default. When set to 1, it will display the name of the attachment.

ShowDesc : The option is set to 0 by default. If set to 1, it will display the attachment's description.

ShowID : The option is set to 0 by default. If set t 1, it will display the object's internal ID.

If both the `ShowName` and `ShowDesc` modifiers are set to `1`, each attachment will be returned in the format "name : description".

Form Attachment Size



Returns

This system variable returns the cumulative size of all documents attached to the form.

SysVar Tag

```
{FORM_ATTACHMENT_SIZE, groupname=GroupName}
```

Modifiers

groupname: The option can be used to have the system variable return the cumulative size of only the documents in the specified group.

Form Definition Name

Returns

This system variable returns a string containing the name of the Form Definition.

SysVar Tag

```
{FORM_DEF_NAME}
```

Form Definition Group Name

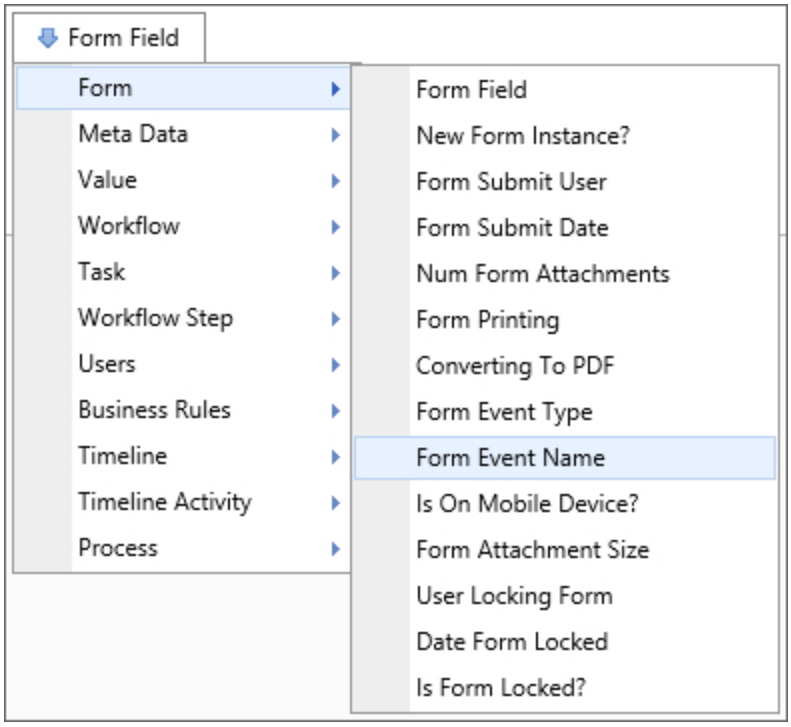
Returns

This system variable returns a string containing the Group name that has been configured in the Form Definition.

SysVar Tag

`{FORM_DEF_GROUP_NAME}`

Form Event Name



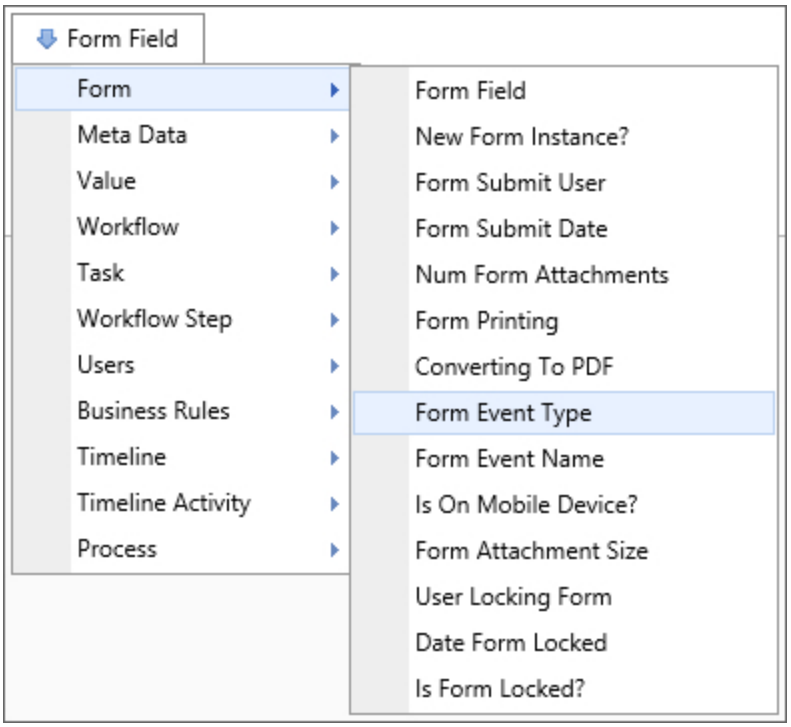
Returns

This system variable returns a string containing the name of the most recent form event.

SysVar Tag

`{FORM_EVENT_NAME}`

Form Event Type



Returns

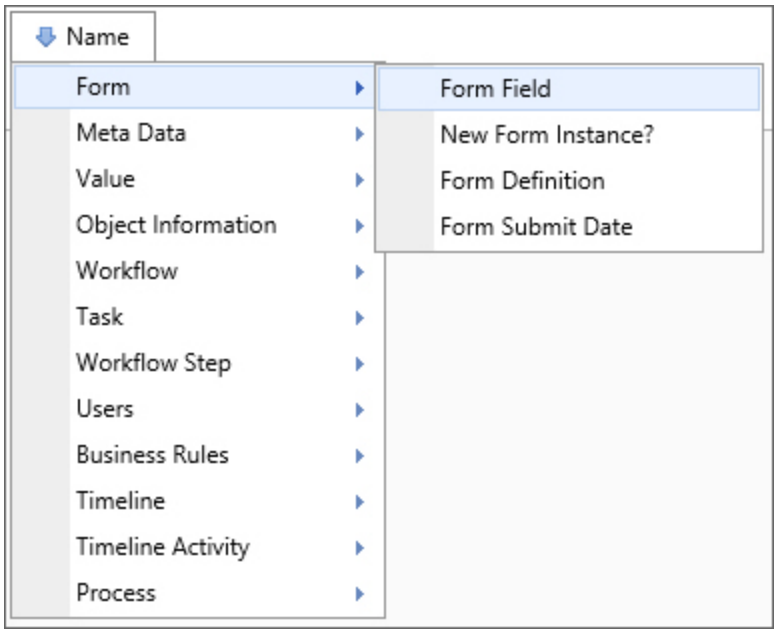
This system variable returns a string reflecting the type of the most recent form event. The returned string can be any of the following values:

- User
- Complete
- Cancel
- Save
- SaveAndClose
- Print
- CancelClose
- DocumentAttached
- ClipboardAttached
- RefreshEvent

SysVar Tag

`{FORM_EVENT_TYPE}`

Form Field



Returns

A Form Field system variable will return the value of a specified form field. The data will be drawn from the active instance of the Form. When the form field name is the name of a column in an array, this system variable will return a comma separated listed of the values of all the non-empty fields in that column. To include empty values in that list, set the optional parameter KeepEmptyRows to true.

SysVar Tag

```
{FORM:form_field_name}
```

OR

```
{:form_field_name}
```

Parameters

form_field_name (Required): The name of the form field whose value you wish to return.

Modifiers

The modifiers available depend on what type of data the form field contains. If the form field contains arbitrary data, then the Form field system variable modifiers apply. If the form field contains data about a user, then the User system variable modifiers apply. No modifiers are available when the form field contains information about an object. The general Form field system variable parameters apply to all text Form fields.

When the form field name is the name of a column in an array, this system variable will return a comma separated listed of the values of all the non-empty fields in that column. To include empty values in that list, set the optional parameter KeepEmptyRows to true.

When the form field is a checkbox, you can use the formatters `True="ValueIfTrue"` and `False="ValueIfFalse"`. These formatters enable you to place any desired string in the "value" to replace the default values of True and False with the desired strings.

When the form field has a numeric values, adding the formatter `digits=n`, where "n" is the number of digits, will return the number formatted as an n-digit number.

When the form field is a Comment Log control, adding the formatter `format=comments` will return the number of comments entered into the comment log.

Form Instance ID

Returns

This system variable returns the ID of the current form instance.

SysVar Tag

`{FORM_INSTANCE_ID}`

Form Instance Version

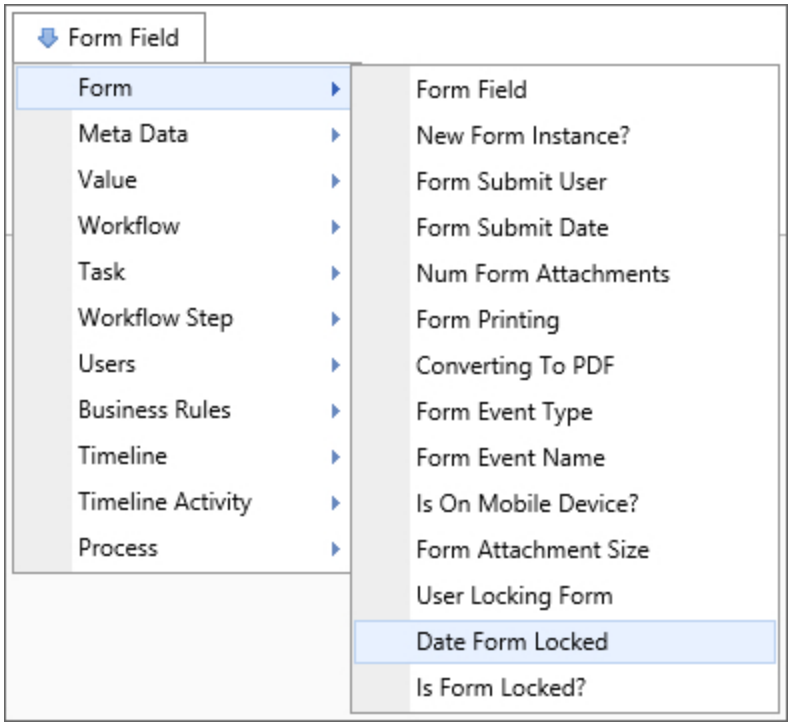
Returns

This system variable returns the version number of the current form instance.

SysVar Tag

`{FORM_INSTANCE_VERSION}`

Form Lock Date



Returns

This system variable returns the date and time the form was locked.

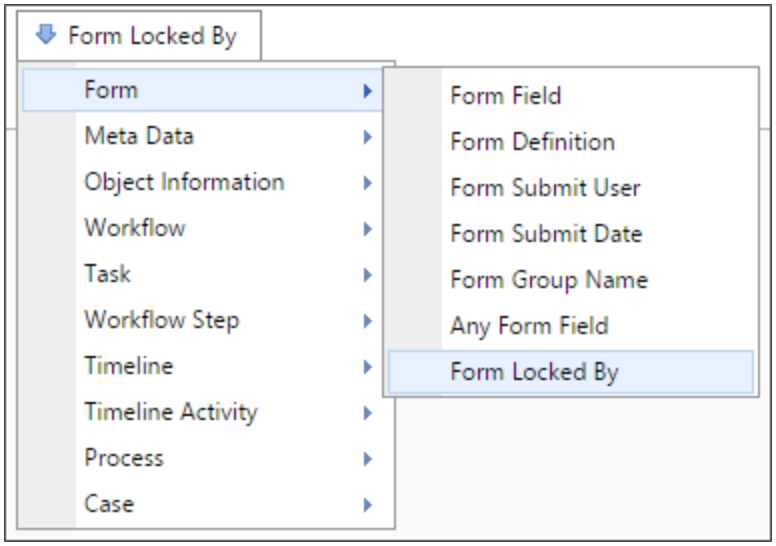
SysVar Tag

```
{FORM_LOCK_DATE}
```

Modifiers

This system variable is a DateTime system variable and can use any of the common DateTime modifiers.

Form Locked By



Returns

This system variable returns the user who locked a form.

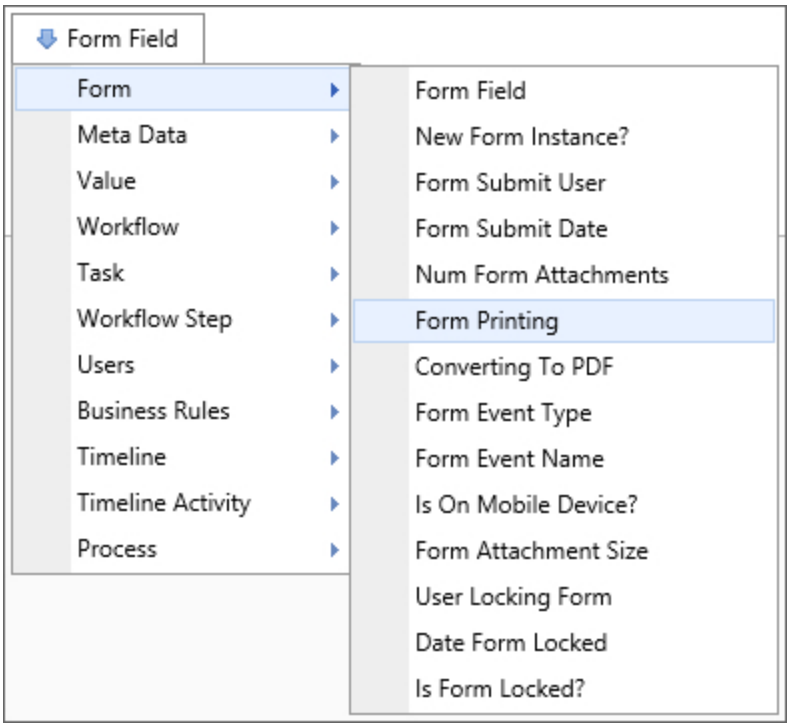
SysVar Tag

```
{FORM_LOCK_USER}
```

Modifiers

This system variable is a User system variable and can use any of the common User modifiers.

Form Printing



Returns

This system variable returns a Boolean value reflecting whether or not the Form is being printed. Use this to change what is displayed on printed versions of the Form.

SysVar Tag

```
{FORM_PRINTING}
```

Form Reference Folder Path

Returns

This system variable returns a string value consisting of the folder path for Form attachments. If there are more than one attachment, then a comma-separated list of folder paths will be returned.

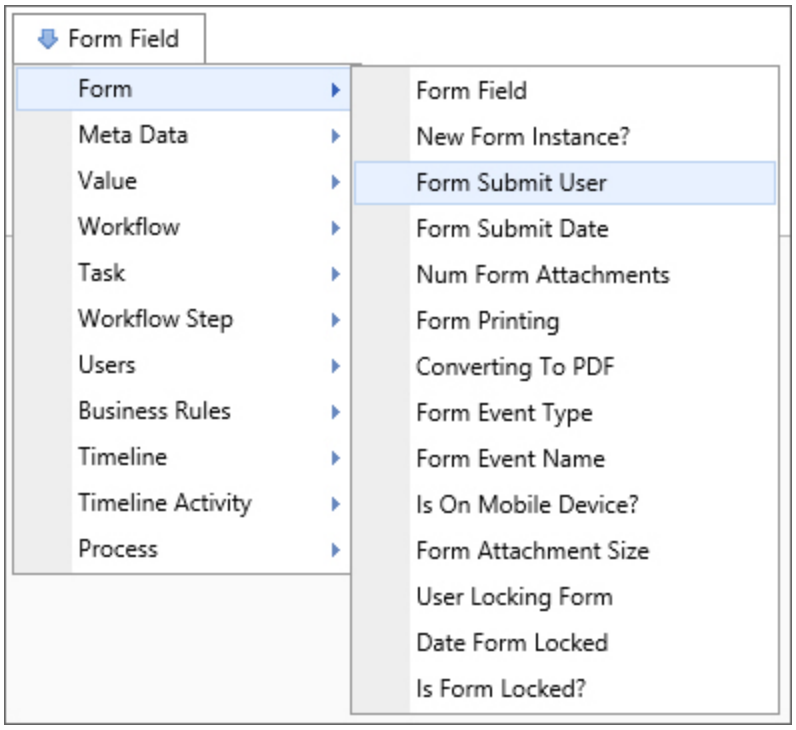
SysVar Tag

```
{FORM_REFERENCE_FOLDER_PATH, groupname="GroupName"}
```

Modifiers

Groupname: Returns only the paths for attachments in the specified group.

Form Submitter



Returns

This system variable returns information about the user that submitted the Form, thus creating the Form instance.

SysVar Tag

```
{FORM_SUBMITTER}
```

Modifiers

This system variable is a User system variable and can use any of the common User modifiers.

When an object is created programmatically, e.g., via a Goal or Stream Action, there will be no value for this variable, unless the object's creation can be traced to a specific user interaction.

Icon

Returns

This system variable displays a specified icon on a Form page.

SysVar Tag

```
{ICON, IconNumber=0000, IconSize=00, IconColor=#000000, IconBackcolor=#000000,
CSSClass=Classname, tooltip="Tooltip text"}
```

Modifiers

IconNumber (Required): The ID Number of the Icon, which is displayed as the icon's tooltip in the Icon Chooser.

IconSize: The number, in pixels, of the vertical size of the icon to be displayed.

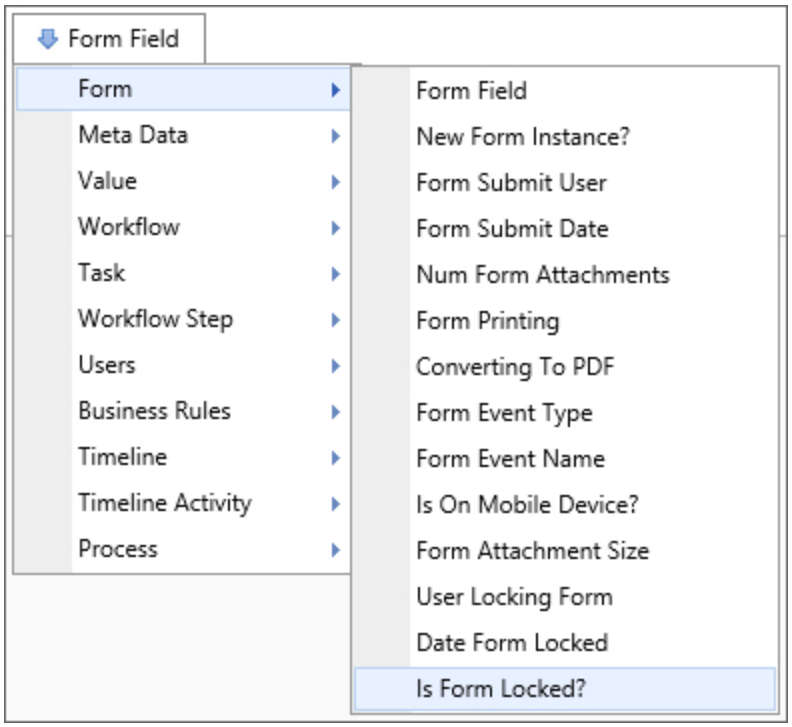
IconColor: The HTML Hexadecimal color of the icon.

IconBackColor: The HTML Hexadecimal color of the icon's background.

CSSClass: A custom CSS Class to apply to the icon.

Tooltip: The tooltip text to display when the user hovers over the icon.

Is Form Locked?



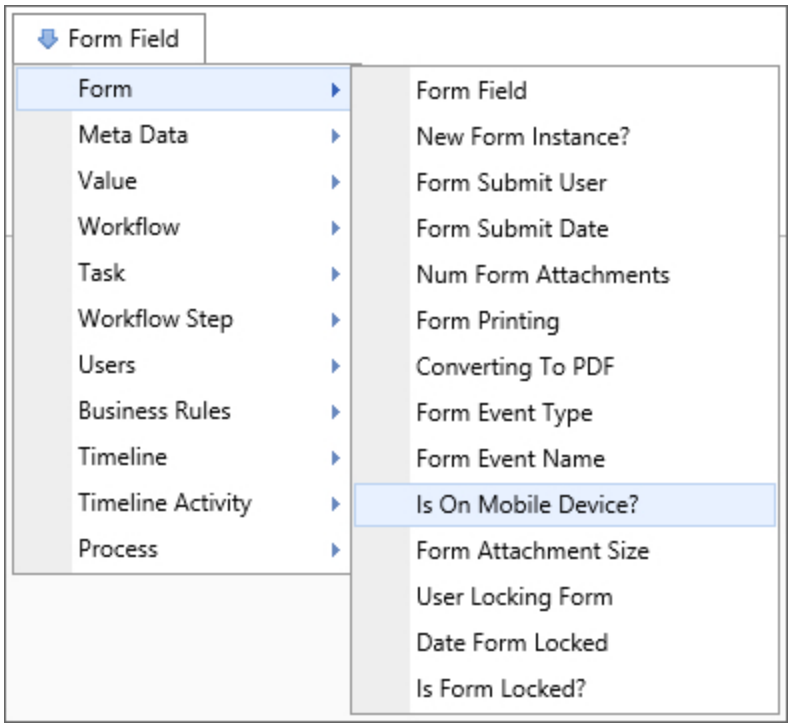
Returns

This system variable returns a Boolean result that is true if another user has locked the form, preventing any other user from making changes to it. Form locking can be enabled by checking the Enable Form Locking property checkbox on the form definition. The behavior of this system variable is different when it is used on a form or in a condition on a form. When this variable is used in a condition when a user is running a form, it will return FALSE *even though the current user has it locked*. When used on a form it will return TRUE only when ANOTHER user has the form instance locked. The Knowledge View behavior is different, in that it simply returns TRUE if *anyone* has it locked.

SysVar Tag

```
{IS_FORM_LOCKED}
```

Is On Mobile Device?



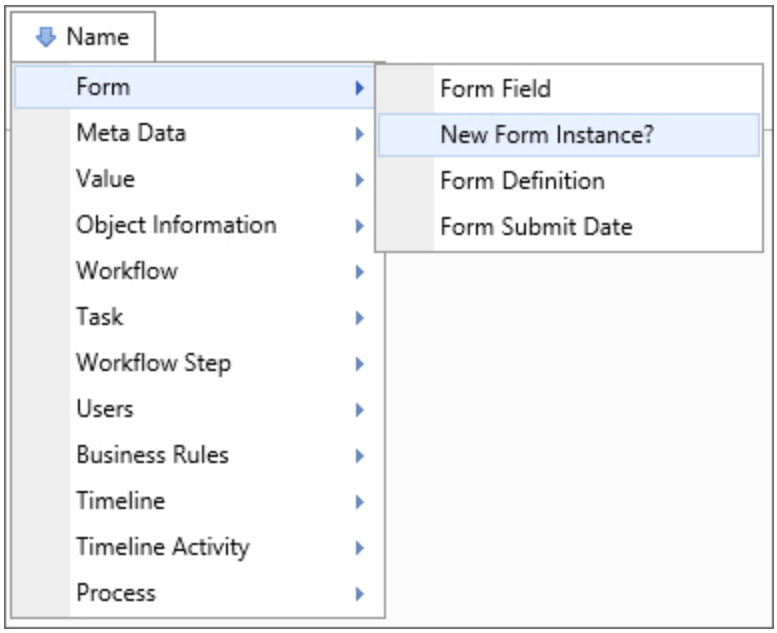
Returns

This system variable returns a Boolean value reflecting whether or not the Form is being displayed on a mobile device. Use this to change what a Form displays depending on what device is displaying a Form. Tablets count as mobile devices.

SysVar Tag

`{FORM_IS_MOBILE}`

New Form Instance



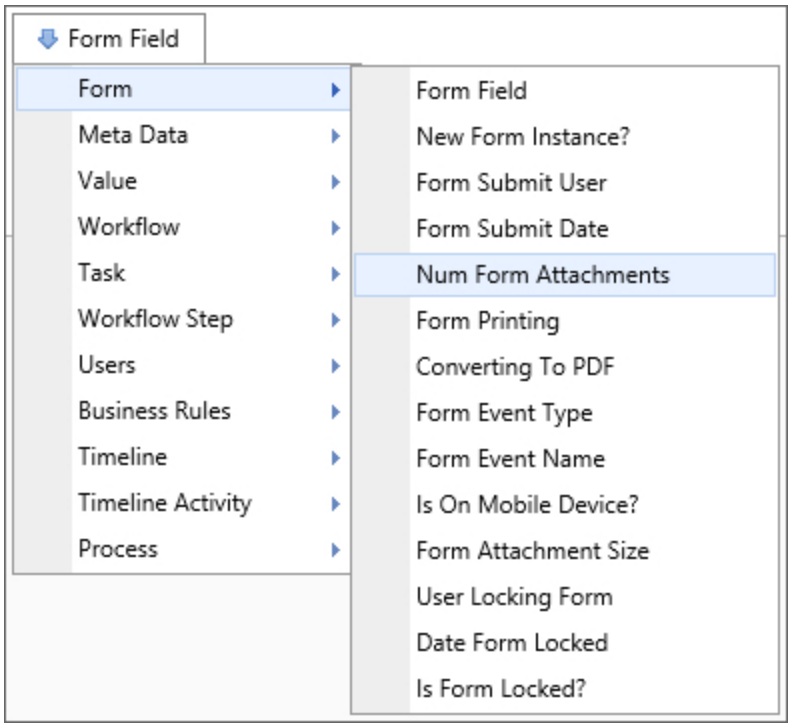
Returns

This system variable returns a Boolean value reflecting whether or not the Form instance has just been created.

SysVar Tag

`{NEW_FORM_INSTANCE}`

Num Form Attachments



Returns

This system variable returns the number of attachments to a Form instance.

SysVar Tag

```
{FORM_ATTACHMENT_NUM, ObjectType=Document|Form,
CSStatus=Pending|NotPending|Failed|Done|PendingOrFailed, GroupName=Group,
UploadStatus=PENDING|NOT_PENDING}
```

Modifiers

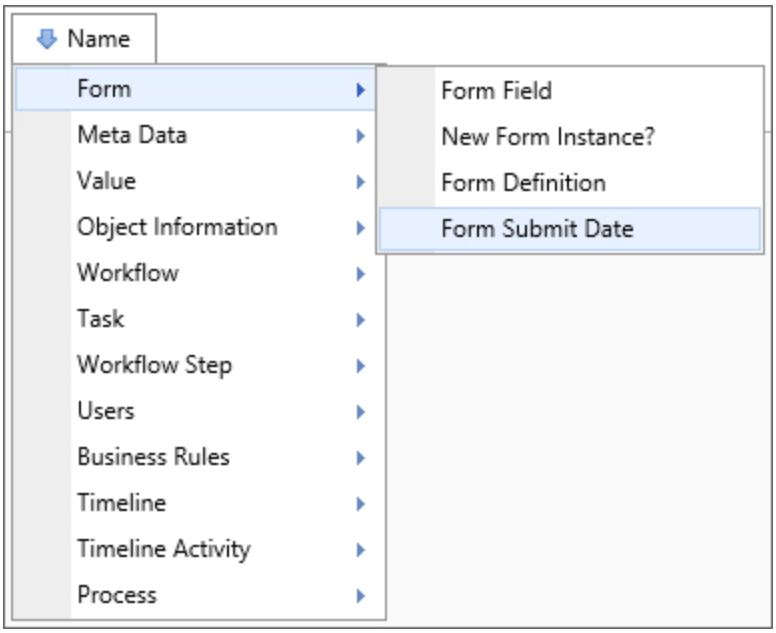
ObjectType: This system variable's results can be restricted by object type using the ObjectType parameter. Acceptable values are `Document` and `Form`.

CSStatus: The option is available with Concept Share integration. When a value is specified, the system variable will return only the number of documents matching that stated. If `Failed` is used, this system variable will return the number of documents that failed to upload to Concept Share.

GroupName: The option limits the system variable such that it only returns the number of attachments in the specified group.

UploadStatus: This parameter will return the number of attachments that meet the specified value.

Submit Date



Returns

The Submit Date system variable returns the date a form instance was submitted on.

SysVar Tag

`{FORM_SUBMIT_DATE}`

Modifiers

This system variable is a DateTime system variable and can use any of the common DateTime modifiers.

Data List Control

For Process Director v6.0.100 and higher, a new Form Control, the Data List, was added to the product, along with appropriate Form field System Variables. The Data List control is relatively unique, with properties not relevant to other Form controls, and with unique formatters and modifiers. Each System Variable may return a single value, or a comma-separated list of values depending on what is selected in the Data List.

Data List

Returns

With a Row Selected: A comma-separated list of all data in the selected row, whether the columns are hidden or visible.

With a cell selected: The data in the selected cell.

With nothing selected: N/A

SysVar Tag

```
{Form:DataListControlName, format="Count|SelectedCount|Visible|Hidden"}
```

OR

```
{:DataListControlName, format="Count|SelectedCount|Visible|Hidden"}
```

Parameters

DataListControlName (required): The Name of the Data List control.

Modifiers

format: This optional modifier specifies the format in which the data will be returned. Not all of the formatters below are available in v6.1.100, and are marked accordingly. The following format attributes are acceptable:

- **Count:** Returns the total number of rows in the Data List control.
- **SelectedCount:** Returns the total number of rows selected in the Data List control. Not applicable to Data Lists that use only cell selection.
- **Visible:** Returns a comma-separated list of data from all visible columns in a selected row. Not applicable to Data Lists that use only cell selection.
- **Hidden:** Returns a comma-separated list of data from all hidden columns in a selected row. Not applicable to Data Lists that use only cell selection. (Not yet added to the Product.)

Example

```
{:MyDataList, format=count}
```

This syntax will return the row count of the MyDataList Data List control on a Form.

Data List Column

This System variable enables you to return data from a specified column in a Data List control.

Returns

With one row selected: The value of the specified column from the selected row.

With multiple rows selected: A comma-separated list of the specified column from all selected rows.

With a cell selected: N/A

With nothing selected: N/A

SysVar Tag

```
{Form:DataListControlName.ColumnName}
```

OR

```
{:DataListControlName.ColumnName}
```

Parameters

DataListControlName (required): The Name of the Data List control.

ColumnName (required): The Name of the Data List column that contains the desired data.

Modifiers

N/A

Example

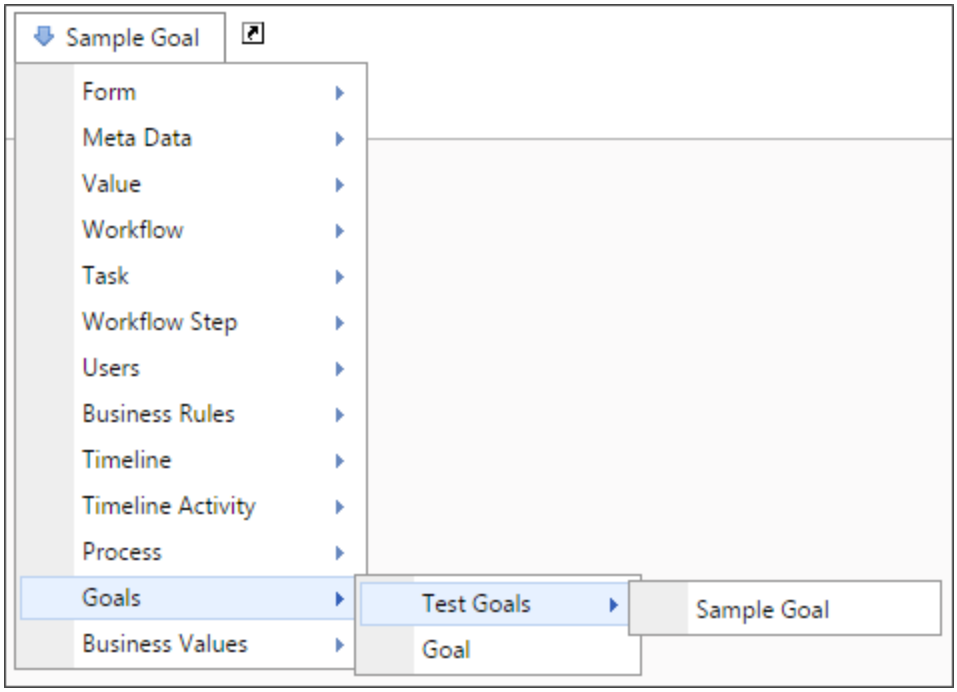
```
{:MyDataList.Country}
```

This syntax will return the value or values of the selected row(s) for the Country column.

Goals System Variables

Goals that you create are added to the System Variables dropdown menu so that the Goal can be accessed in any place where system variables are used.

Goal



Returns

This system variable returns the result of a selected Goal.

SysVar Tag

For Process Director v6.1.300 and higher, the correct syntax for this variable is:

```
{GOAL:GoalName, format=LastEval|NextEval|PrevValue}
```

Deprecated

For versions of Process Director lower than v6.1.300, the only valid syntax is:

```
{GOAL:GoalName, previous_value=1|yes|true}
```

Modifiers

The result of this system variable can be formatted according to the options available to the type of data the Business Rule returns.

LastEval: This formatter will return the datetime value of the last evaluation of the Goal.

NextEval: This formatter will return the datetime value of the next Goal evaluation.

PrevValue: This formatter will return the Goal's previous value.

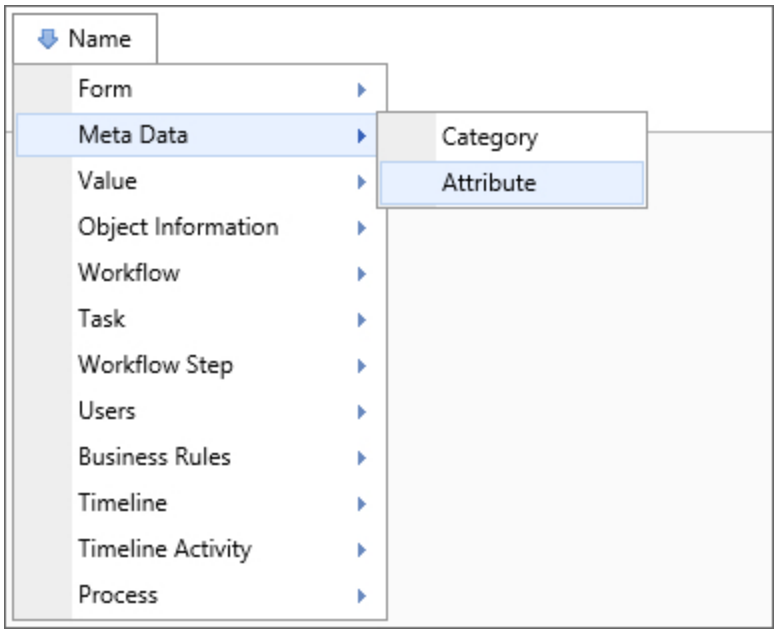
Deprecated

previous_value: Every time a Goal is processed, both the previous value and new value are stored. Adding the `previous_value` parameter will return the previous Goal value instead of the current value. The `previous_value` parameter should always be set to `1`, `yes`, or `true`, all of which are functionally the same, to return the previous Goal value. Setting the `previous_value` parameter to any other value will return the current value of the Goal.

If this modifier is used in conjunction with any of the new formatters, this modifier will take precedence.

Meta Data System Variables

Attribute



Returns

This system variable returns the name of an attribute if the object containing this system variable is assigned to that attribute. If the object isn't assigned to the attribute, the system variable will return a null string.

SysVar Tag

```
{ATTRIBUTE:CategoryName.AttributeName, format=currency|value|string}
```

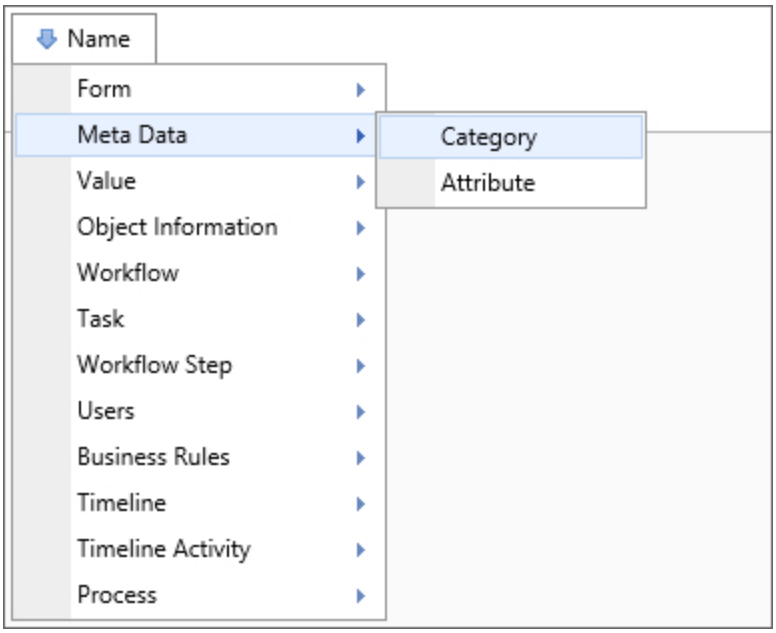
Parameters

category_name.attribute_name (Required): The dot-notation syntax for a meta data attribute, e.g., `MyCategory.MyAttribute`.

Modifiers

format (optional): This system variable can be formatted as a currency, a numeric value, or a string using the format= option.

Category



Returns

The Category system variable returns the name of the objects assigned to a specified Meta Data category or list of categories so long as the object containing this system variable is assigned to that category. If the object isn't assigned to a listed category, the system variable returns a null string for that category.

SysVar Tag

```
{CATEGORY:category_name_1.category_name_2...}
```

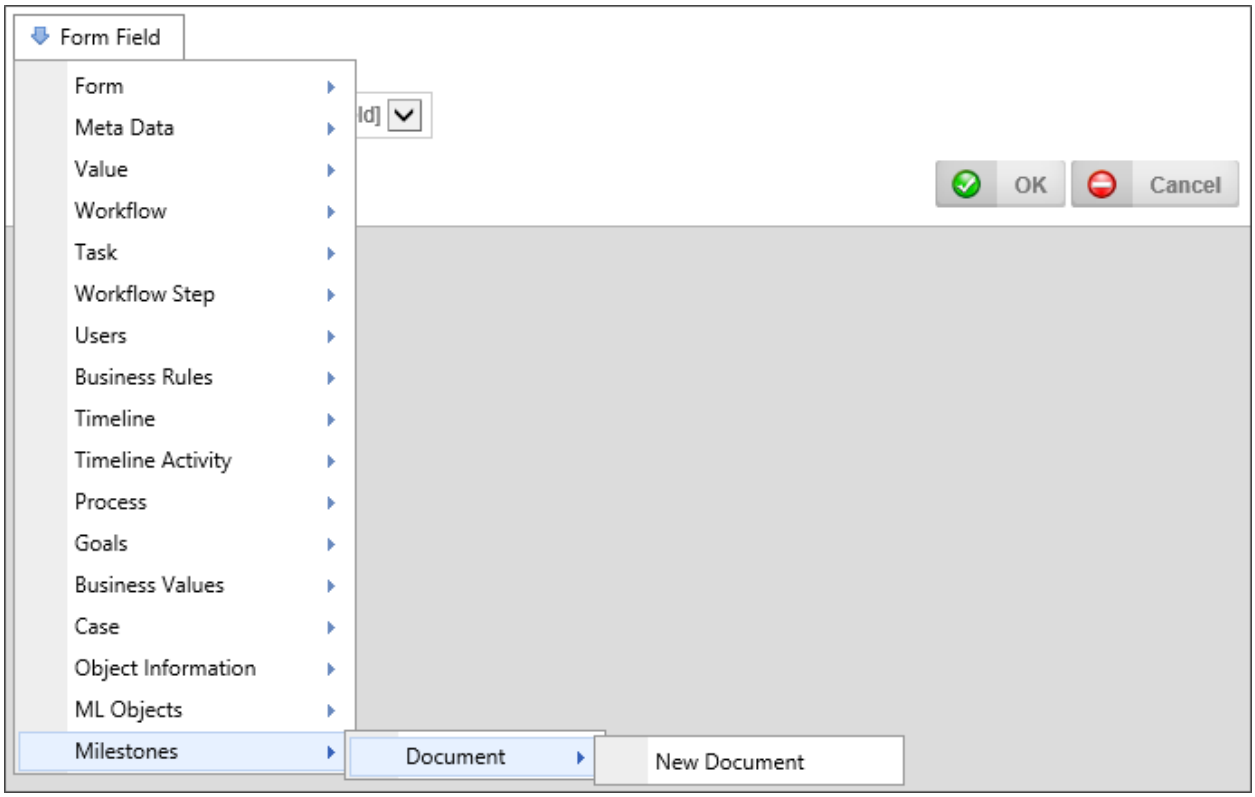
Parameters

category_name (Required): The name of the category, or a list of category names separated by periods, whose objects you wish to return.

Milestone System Variables

Milestones that you create are added to the System Variables dropdown menu so that the Milestone can be accessed in any place where system variables are used. Milestones are available for users of Process Director v4.6 and higher, and are configured in the Milestones tab of Process Director object definitions.

Milestones



Returns

This system variable returns the result of all milestones, or Milestone.

SysVar Tag

```
{MILESTONES, OCCURRENCE=N, EVENTNAME="TextName", FORMAT="User|Message|Time|Date|Datetime"}
```

Modifiers

Occurrence: An integer that corresponds to the number of times the Milestone occurred. A value of `-1` returns the most recent occurrence of the Milestone.

EventName: Enables you to specify a milestone name, to return only instances of that milestone.

Format: The Milestone Data you'd like to return. By default, the variable returns the Milestone Message that you configured.

Milestone Doc Attach

This system variable is usually used to configure the message text for a Milestone to capture when a document is attached to a form or process.

Returns

This system variable returns the text values associated with attaching a document.

SysVar Tag

```
{MILESTONE_DOC_ATTACH, FORMAT="Name|Group"}
```

Modifiers

Format: The document attachment data you'd like to return. You may return either the name of the document, or the group to which the attachment was assigned.

Milestone Form Value

This system variable is usually used to configure the message text for a Milestone to capture when a Milestone event occurs. When a form event such as a change to a field value, fires a milestone, you can use this system variable to return the form value.

Returns

This system variable returns the form value associated with the event.

SysVar Tag

```
{MILESTONE_FORM_VALUE}
```

ML and AI System Variables

Process Director v5.0 and higher supports system variables that incorporate Machine Learning (ML) and Artificial Intelligence (AI) services.

Sentiment

This system variable uses the Google Sentiment service that you must configure in the Custom Variables file. Please see the Google Sentiment topic in the Developer's Guide for the required configuration that must be implemented prior to using this system variable.

Returns

This system variable returns the Google Sentiment score for a text string you provide. The return value will be a double-precision number between -1.0 and 1.0.

SysVar Tag

```
{SENTIMENT, text="AnyString", entityName="AnyString", entityType=" Unknown|Person|Location|Organization|Event|Work_of_Art|Consumer_Good|Other"}
```

Modifiers

text (Required): The text string that you wish to analyze for sentiment.

entityName (Optional): The string Name you'd like to give to the entity you pass.

entityType (Optional): The string type of entity you wish to analyze. The available options are listed in the syntax sample above.

Miscellaneous System Variables

Attachments

Returns

This system variable returns a number of attributes for Form, Workflow, and Process Timeline attachments.

SysVar Tag

```
{ATTACHMENTS, AttachType=Form|Workflow|Timeline|Process,
Return=Name|ID|CreateUser|CreateDate|UpdateUser|UpdateDate, Group=Groupname,
ObjectType=Document|Form, OrderBy=Name|CreateDate|UpdateDate, OrderType=ASC|DESC,
Separator=','}
```

Modifiers

All modifiers are optional for this System Variable.

AttachType: The type of attachment to return.

Return: The attachment attribute to return.

GroupName: The GroupName of the attachments to return.

ObjectType: The type of attachment object to return.

OrderBy: The sort order of the returned attributes.

OrderType: Specifies if the attributes should be sorted in ascending or descending order.

Separator: The separator character to use to separate each Attribute in the list.

Calc

Returns

This system variable returns the numerical result of a mathematical formula. Both constants and system variables can be used in the formula. A formula is described in traditional mathematical notation, e.g. `100 - 5` or `{someSystemVariable} * 2`.

SysVar Tag

```
{CALC, Formula=SomeFormula, Format=FormatString}
```

Modifiers

Formula (Required): The formula that will be used for the calculation,

Format (Optional): System variable results that can be formatted as numbers can be formatted with .NET format strings. Consult MSDN to see what standard format strings are available, and to see how you can create your own format using a custom format string.

Setting the `format` parameter to `currency` will format the result of this system variable as a currency.

Char

Returns

This system variable returns a single ASCII character, specified by the ASCII integer Character Code for that character. A list of ASCII character codes can be found on MSDN.

SysVar Tag

```
{CHAR:CharCode}
```

Parameters

CharCode: The ASCII character code of the character to return.

Examples

```
{CHAR:32} //Returns the "space" character.
{CHAR:41} //Returns the "A" character.
```

Cookie

Returns

This system variable returns the cookie value of the named cookie.

SysVar Tag

```
{COOKIE, Name=CookieName}
```

Modifiers

Name (Required): The name of the cookie whose value you wish to return.

Current Partition

Returns

This system variable returns the name of the current partition.

SysVar Tag

```
{CURRENT_PARTITION, format=ID}
```

Modifiers

Format=ID (Optional): Using this formatter will return the ID of the partition, instead of the name.

Alternate Syntax

```
{CURR_PARTITION}
```

Custom Variable

Returns

This system variable returns the value of a specified custom variable that is defined in the vars.cs.ascx file. Please see the Developer's Guide to learn how to configure the values of custom variables.

SysVar Tag

```
{CustomVar:someVariableName}
```

Parameters

someVariableName: The name of the Custom Variable whose value you wish to return.

Debug Mode

Returns

This system variable returns a Boolean value reflecting whether debug mode is current on or off.

SysVar Tag

```
{DEBUG_MODE}
```

Document Check-In User

Returns

This system variable, usable only for documents, returns the last user who checked in the documents.

SysVar Tag

```
{DOC_CHECK_IN_USER, Format=FormatType}
```

Optional Parameters

Format: This system variable can be formatted via standard User system variable formatting options.

Document Template Name

Returns

This system variable, usable only on documents, and primarily in conjunction with the Transform Form to Word Custom Task, returns the name of the Word document template that is used for the transformation.

SysVar Tag

```
{DOC_TEMPLATE_NAME}
```

Install Path

Returns

This system variable returns the file path to the root folder of the current instance of the Process Director installation.

SysVar Tag

```
{INSTALL_PATH}
```

Interface URL

Returns

This system variable returns the URL of the interface of the system configurations.

SysVar Tag

```
{INTERFACE_URL}
```

Knowledge View Definition Name

Returns

This system variable returns the name of a Knowledge View definition.

SysVar Tag

```
{KV_DEF_NAME}
```

Knowledge View Number Of Rows

Returns

This system variable returns the number of rows in a Knowledge View instance.

SysVar Tag

```
{KV_NUM_ROWS}
```

Knowledge View Filter Data

Returns

This system variable returns a string representing the filters used in the Knowledge View.

SysVar Tag

```
{KV_FILTER_DATA}
```

Literal

Returns

This system variable returns literal text that does NOT attempt to interpret or parse tokens like system variable curly brackets contained in the text. Instead, the token will be presented as a text character. For example, the syntax `{Literal, Text="This will contain { and } characters"}` will return the literal text "This will contain { and } characters".

SysVar Tag

```
{LITERAL, Text="Your text here."}
```

Modifiers

Text: The text you wish to display in Literal format.

Logo URL

Returns

This system variable returns the URL of the system logo image.

SysVar Tag

`{LOGO_URL}`

Next Row

Returns

The Row Next system variable returns the number of the next row in an array.

SysVar Tag

`{ROW_NEXT}`

Number of Knowledge View Items

Returns

This system variable returns the number of results returned by a Knowledge View with the specified name.

SysVar Tag

When used in most places in the partition, the following syntax will work:

`{NUM_KVIEW_ITEMS:KViewName}`

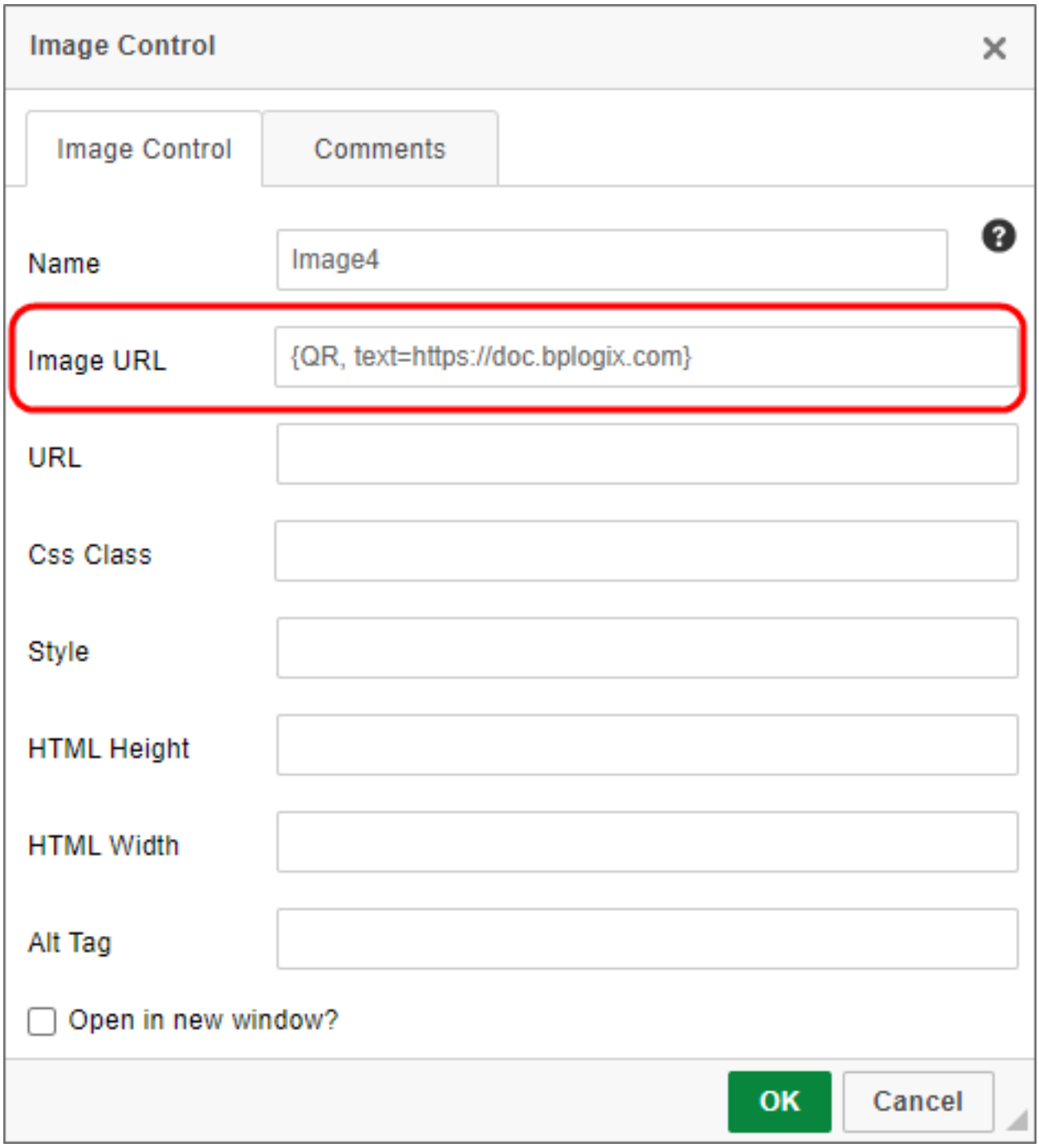
When used in a workspace, the `KViewName` name must be replaced with the full folder path of the Knowledge View:

`{NUM_KVIEW_ITEMS:PartitionName/FolderName/SubfolderName/KViewName}`

QR Code

Returns

Users of Process Director v5.44.500 and higher can use this system variable to display an image of a QR code when used as the Image URL property of an Image control on a Form to produce the QR Code image, as shown below. This System Variable won't produce a QR code image when used in any other context.



Parameters

text: This is a required text parameter that specifies the text that should be encoded into the QR Code. This parameter will usually be the URL of a web page. System variables can be used to construct the `text` modifier.

Optional Modifiers

type: This text modifier enables you to specify the image format of the QR code as JPG, PNG, or GIF format. The default is PNG format.

size: This numeric modifier enables you to set the image size of the QR code image in pixels. It sets both the height and width as QR code images are square. The default is 200 pixels.

ecc: This text modifier enables you to specify the Error Correction Code (ECC) that implements the desired level of error correction to include in the QR Code image as Low (L), Medium (M), Quartile (Q), or High (H). The default is Q. Higher ECC levels will produce more complex QR Code images.

scheme: Currently, the only supported scheme is `URI`, e.g., a web page URL, which is the default scheme. Other schemes, like SHC (SMART Health Card) may be available in the future.

SysVar Tag

```
{QR, text=TextString, type=png|jpg|gif, size=N, scheme=uri,ecc=L|M|Q|H}
```

Alternative Syntax

```
{QRCODE}
```

```
{QR_CODE}
```

Row Number

Returns

The Row Num system variable returns the number of the array row containing this system variable.

SysVar Tag

```
{ROW_NUM}
```

Previous Row

Returns

The Row Prev system variable returns the number of the previous row in an array.

SysVar Tag

```
{ROW_PREV}
```

Sequence Number

Returns

This system variable returns an integer that increments by 1 every time the system variable is referenced. An optional Group Name parameter enables you to create different sequences that are incremented independently of each other. A Sequence Number/Group Name sequence, once initiated, can't be reset to 0, nor forced to reuse a previously issued number in the sequence. Using the Sequence Number without a Group Name returns the total count of sequential items created on the entire system.

SysVar Tag

```
{SEQ_NUM:groupName, Digits=N, Format=GUID}
```

Parameters

groupName: Enables you to have separate sequence numbers, because each group name's sequence number is updated individually. Therefore a variable `{SEQ_NUM:group1}` would, when referenced, not increment the variable `{SEQ_NUM:group2}`. Each group would increment only when it is referenced. There is no limit to the number of groups you can have when creating sequence numbers.

Modifiers

Digits: You can specify the number of digits that this number should display. For instance `digits=4` would display the first number as "0001".

format=guid: This optional modifier causes the sequence number to be generated using a Globally Unique Identifier (GUID), rather than an integer.

Additional Considerations

The Sequence Number can be used in combination with other system variables to generate complex numbering formats. For instance, let's say you wish to generate a request number for Purchase Requests that

1. Identifies the number as a Purchase Request,
2. Identifies the year of the request,
3. Restarts numbering every year, and
4. Has a 4-digit request number.

To meet these requirements, you'd like to display the request number in the format "PR22-0001". The system variable syntax to accomplish this might be written as:

```
PR{CURR_YEAR, format=yy}-{SEQ_NUM:PR{CURR_YEAR}, digits=4}
```

This sequence number will start on 1 January every year, and number the requests consecutively throughout the year (e.g., PR22-0001 to PR22-9999 for the year 2022). At the beginning of the next year, the very first request generated that year would be PR23-0001.

Another consideration you should keep in mind when using the Sequence Number on forms is that, once generated, a Sequence Number can't be repeated. So, to apply a Sequence Number to a form, you should ***not*** use it as a Default form field value. If you do, then the Sequence Number is generated as soon as the form opens. If the user doesn't submit the form, the Sequence Number is "burned" and the next time the form is opened, a new number is generated. In this case, you'll be missing a number in the sequence. So, you might, instead, use a Set Form Data on the first step in the process to set the Sequence Number after the form has been submitted, to ensure that a Sequence Number isn't used until a valid form submission has been received.

Session Variable

Returns

This system variable returns a specified Session Variable. For information on how to set a session variable, please refer to the Session Variables section of the Developer's Guide.

SysVar Tag

```
{SESSION:VariableName}
```

Parameters

VariableName: The name of the session variable whose value you wish to return.

Server Culture

Returns

This system variable returns the server's configured culture code, e.g., "en-US".

SysVar Tag

```
{SERVER_CULTURE, format=name}
```

Modifiers

format=name: Using this optional modifier will returns the culture name, rather than the culture code.

Server Name

Returns

This system variable returns the name of the server.

SysVar Tag

```
{SERVER_NAME}
```

Server Version

This system variable returns the server's version number.

SysVar Tag

```
{SERVER_VERSION, format=string}
```

Modifiers

format=string: Using this optional modifier returns a string containing the server's version. Otherwise, this system variable returns the version number.

Server Variable

Returns

This system variable returns the data contained within any HTTP server variable.

SysVar Tag

```
{SERVER_VARIABLE, Name=ServerVarName}
```

Modifiers

Name: The name of the server variable whose value you wish to return.

Session

Returns

The session system variable returns the session variable for the current user.

SysVar Tag

```
{SESSION}
```

Set Locale

Returns

Sets the Culture context of a Form to a desired locale for all form strings. It does **not** impact currency formats or validation as those evaluations occur **before** system variable string parsing. The locale can be set to any valid ASP.NET Culture Code string , e.g., "en-US", or "fr-CA".

SysVar Tag

```
{SET_LOCALE, LOCALE=CultureCodeString}
```

Modifiers

LOCALE: A valid Culture code string to set the form to a specific locale.

SQL Permission

Returns

This system variable returns information about a permission. It can be used to verify that a user has a certain permission for a certain object. The ID of the relevant object is passed via the `ID` parameter, the User ID of the user is passed through the `UserID` parameter, and the type of permission being queried is passed through the `PermType` parameter.

SysVar Tag

```
{SQL_PERM, ID=objectID, UserID=UserUID, PermType=VIEW|MODIFY|DELETE|RUN}
```

Modifiers

ID (Required): The ObjectID of the object whose permissions you wish to return.

UserID: The UserID of the user whose permissions you wish to return.

PermType: The permission type you wish to return.

String

Returns

The String system variable returns the value of a localized string in the relevant resource file. The localized string is referenced by its name in the resource file.

SysVar Tag

```
{STRING:string_name, ResourceType=Internal|Custom, DEFAULTSTRING="DefaultIfEmpty"}
```

Modifiers

ResourceType: The type of string to return. If set to `internal`, the string will reference a Process Director-defined string, whereas when type is set to `custom`, it will reference a string defined by the user in a resource file.

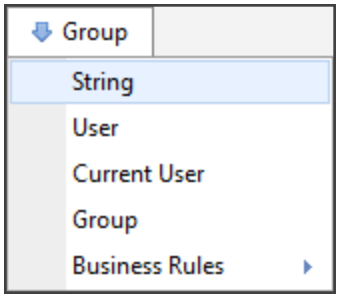
DefaultString: A default value to use if the string isn't found, or empty.

Alternate Syntax

A simpler, alternate syntax to present a string with a default value can be:

```
{S:string_name:"foo"}
```

String (Right-Hand Side Menu)



Returns

This option will enable the user to specify a string to be used in a comparison. It isn't technically a system variable.

Sum

Returns

This system variable returns the numerical sum of all the fields in a column of an array.

SysVar Tag

```
{SUM, Column=ArrayColumnName}
```

Modifiers

Column (required): The column name of the array column you wish to sum.

Temporary File Path

Returns

This system variable returns a fully-qualified file path to an unused, unique, file name.

SysVar Tag

```
{TEMP_FILE_PATH, APPEND=".[File Extension]", PREPEND="[Prefix Characters]"}
```

Modifiers

PREPEND: A string containing any characters the user wishes to add as a prefix to the file name.

APPEND: A string containing the file extension for the target file, e.g. ".xslx" for an Excel file.

Temporary Folder

Returns

This system variable returns a file path to a temporary file folder.

SysVar Tag

```
{TEMP_FOLDER}
```

User

Returns

This system variable returns a user given a UserID and an authentication type.

SysVar Tag

```
{USER, userid=someUserID, auth=SAML|BUILTIN|AD|WINDOWS|LDAP|EXTERNAL}
```

Optional Modifiers

Format: This system variable can be formatted via the standard User system variable formatting options.

Web Site Path

Returns

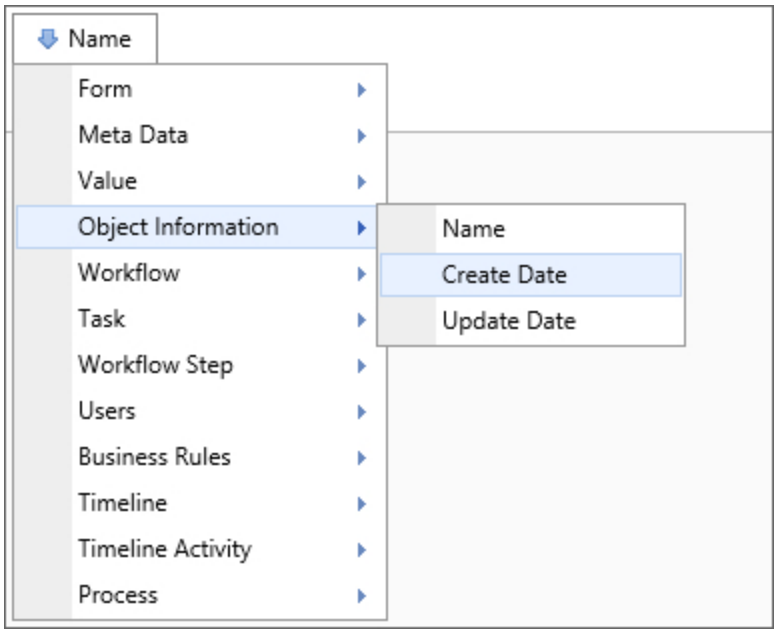
This system variable returns a file path to the root file folder of the web site generated by the current instance of the Process Director installation.

SysVar Tag

```
{WEB_SITE_PATH}
```

Object Information System Variables

Create Date



Returns

This system variable returns the date on which the object was created.

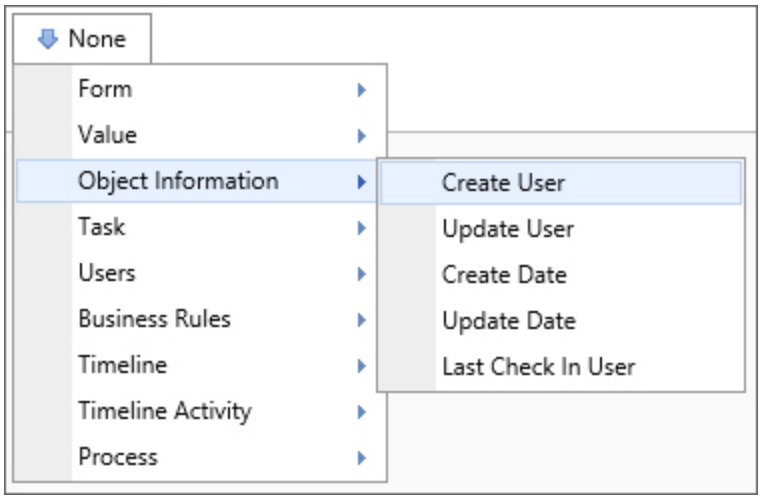
SysVar Tag

`{CREATE_DATE}`

Modifiers

The result of this system variable can be formatted according to the options generally available to format dates.

Create User



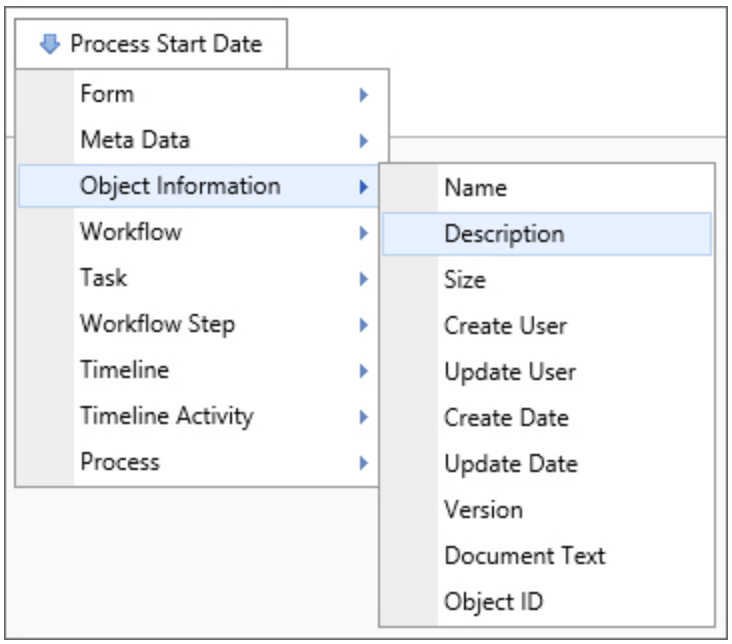
Returns

This system variable returns information about the user that created the object.

SysVar Tag

`{CREATE_USER}`

Description



Returns

This system variable returns a string containing the description of the relevant object.

SysVar Tag

`{OBJ_DESC}`

Document Extension

Returns

This variable will return a string containing the document extension of an attached file, or other object.

SysVar Tag

`{DOC_EXT}`

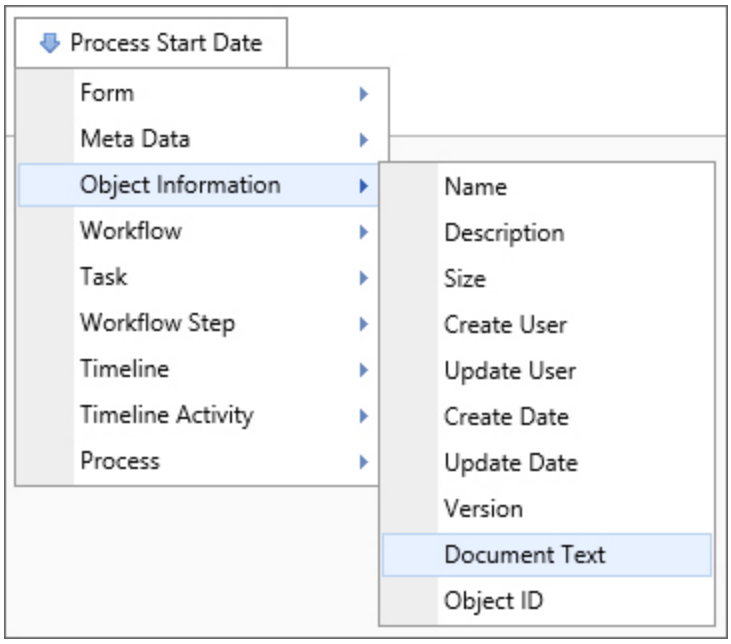
Alternate Syntax

The variable will also be correctly returned using the alternate syntax options below:

`{DOC_EXTENSION}`

`{OBJ_EXT}`

Document Text



Returns

This option allows for a full-text search of a document object.

SysVar Tag

N/A

Folder Path

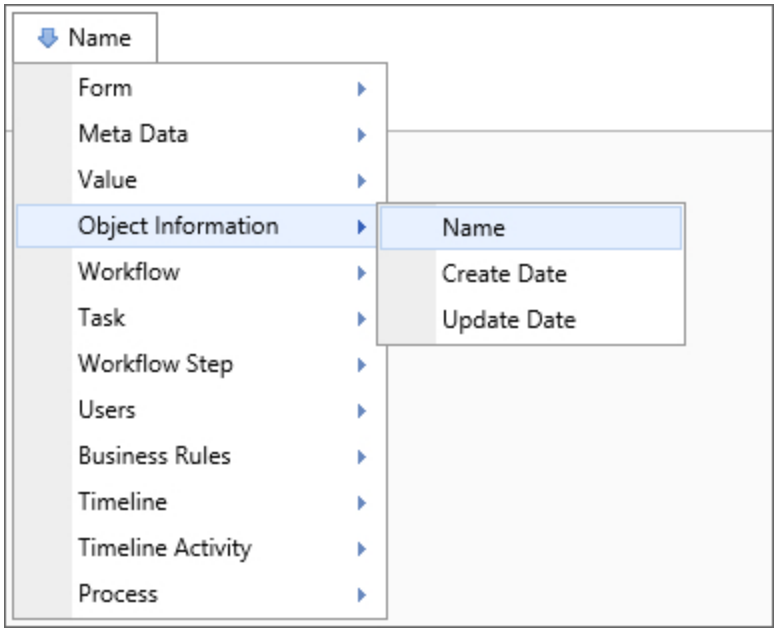
Returns

This system variable returns the content list folder path of an object.

SysVar Tag

```
{FOLDER_PATH}
```

Object Name



Returns

This system variable returns a string containing the name of this object.

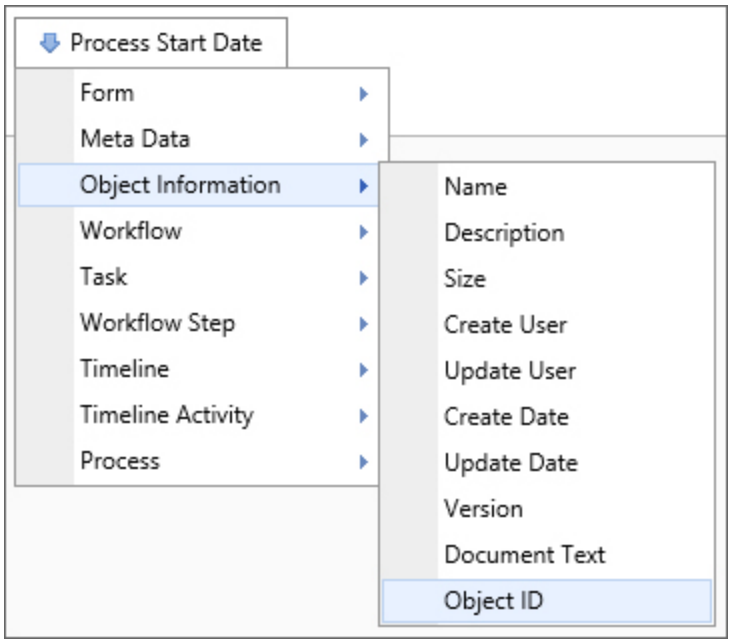
SysVar Tag

```
{OBJ_NAME, ID=ObjectID}
```

Modifiers

ID: This optional modifier accepts the Object ID of a Content List object, and will return the Name of the specified object. If this variable is used without the modifier, the variable will return the Name of the current object.

Object ID



Returns

This system variable returns the ID of an object.

SysVar Tag

```
{OBJ_ID}
```

Object Type

Returns

This system variable returns this object's type. This system variable can return the following:

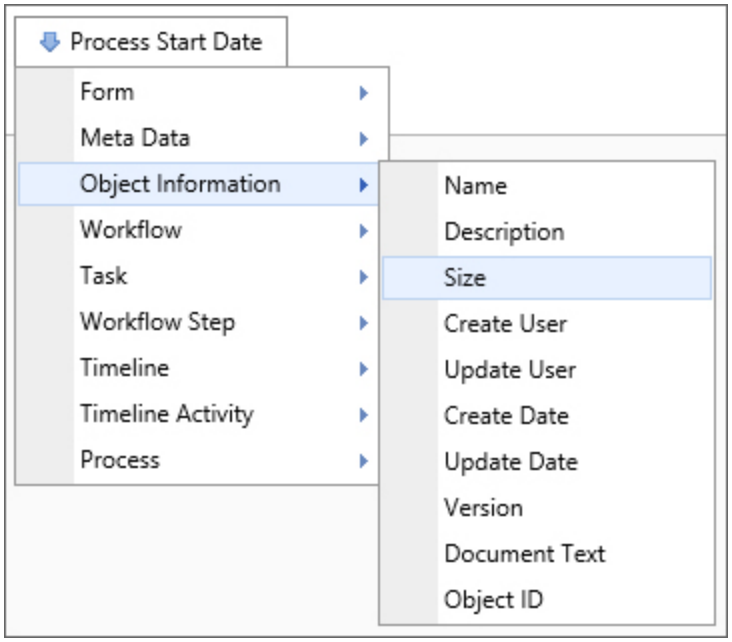
- Document
- Folder
- Rule
- Knowledge View
- Workflow
- Workflow Instance
- TaskList
- User
- Group
- Partition
- Form
- Form Instance
- Category
- Dropdown
- Profile

- DataSource Connection
- Report

SysVar Tag

`{OBJ_TYPE}`

Object Size



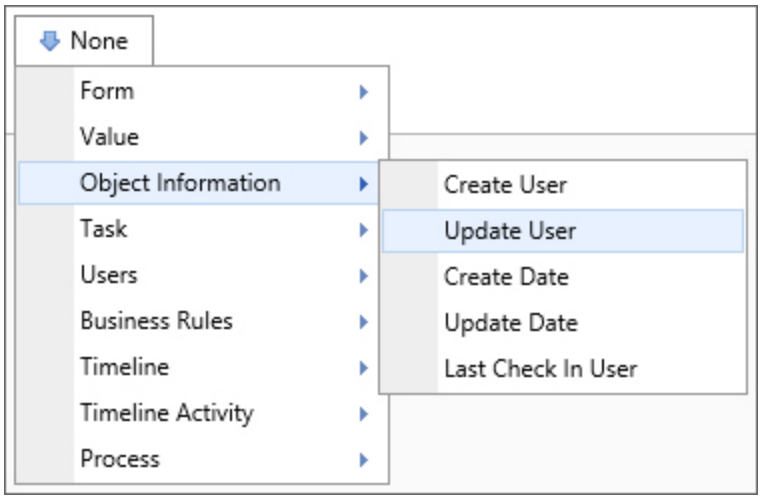
Returns

This system variable returns the size of the object.

SysVar Tag

`{OBJ_SIZE}`

Update User



Returns

This system variable returns information about the last user to update the object.

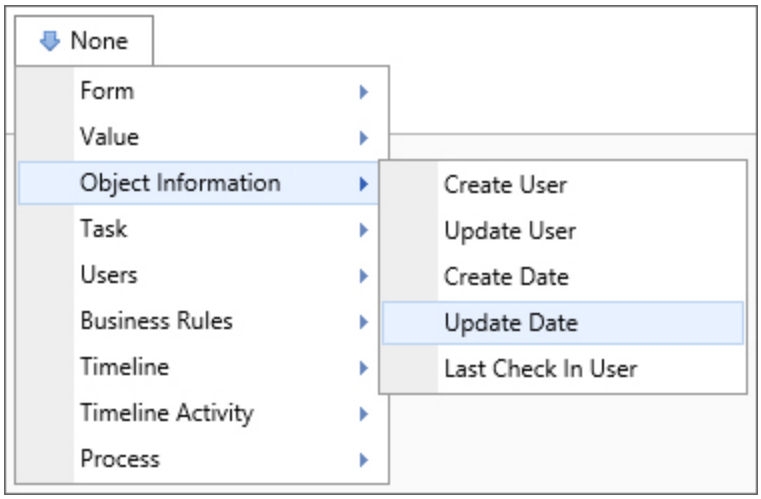
SysVar Tag

`{UPDATE_USER}`

Modifiers

This system variable can be formatted using the Modifiers that are generally available to User system variables.

Update Date



Returns

This system variable returns the date upon which the object was last updated.

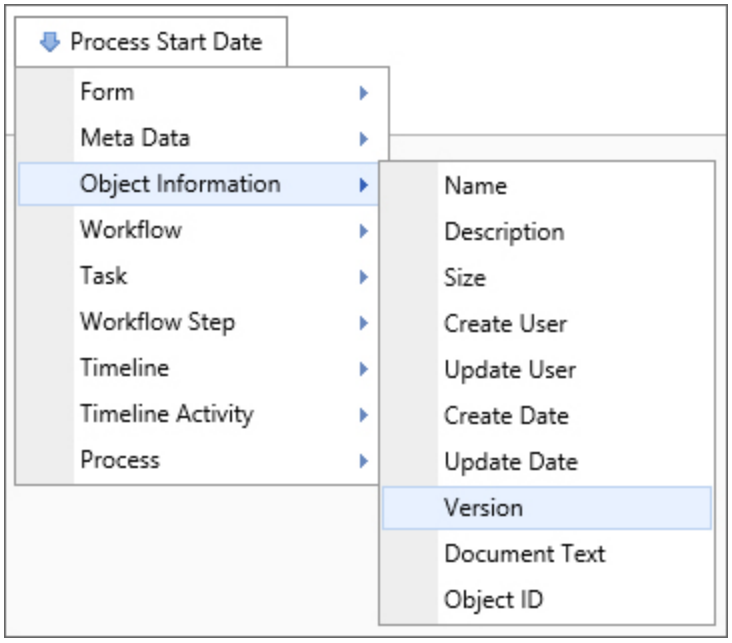
SysVar Tag

`{UPDATE_DATE}`

Modifiers

This system variable can be formatted using modifiers that are generally available for DateTime system variables.

Object Version



Returns

This system variable returns the object's version number.

SysVar Tag

```
{OBJ_VERSION}
```

Process System Variables

Is Sub-Process?

Returns

This system variable returns a Boolean value reflecting whether this process is a sub-process of another process.

SysVar Tag

`{IS_SUBPROCESS}`

Process Attachment Group

Returns

This system variable returns the name of the group used for an object attachment.

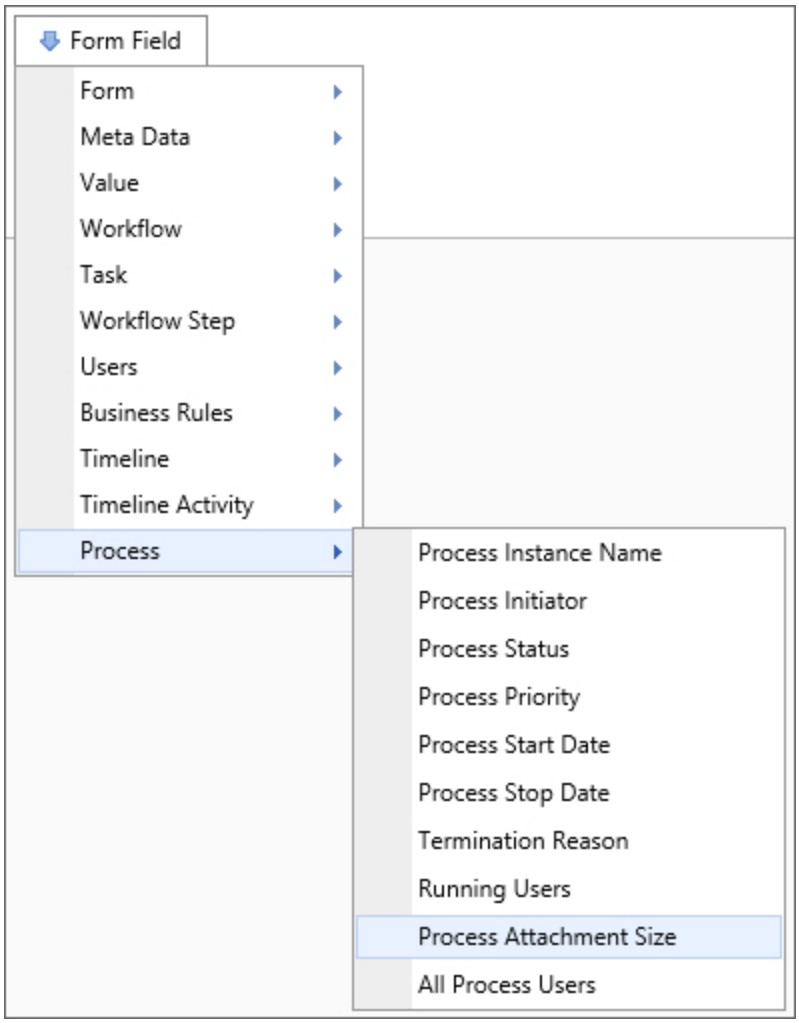
SysVar Tag

`{PROCESS_ATTACHMENT_GROUP}`

Alternate Syntax

`{PROCESS_REF_GROUP}`

Process Attachment Size



Returns

This system variable returns the cumulative size of all documents attached to the Process.

SysVar Tag

```
{PROCESS_ATTACHMENT_SIZE, groupname="GroupName"}
```

Modifiers

groupname: The parameter may be used to limit the documents whose sizes are calculated in the total to only those documents in the specified group.

Alternate Syntax

```
{PROCESS_REFERENCE_SIZE}
```

Process Definition Name

Returns

This system variable returns the name of the current process' definition.

SysVar Tag

`{PROCESS_DEFINITION_NAME}`

Alternate Syntax

`{PROCESS_DEF_NAME}`

Process In Error

Returns

This system variable returns the name of a process' task that's in an error state.

SysVar Tag

`{PROCESS_IN_ERROR}`

Process Instance ID

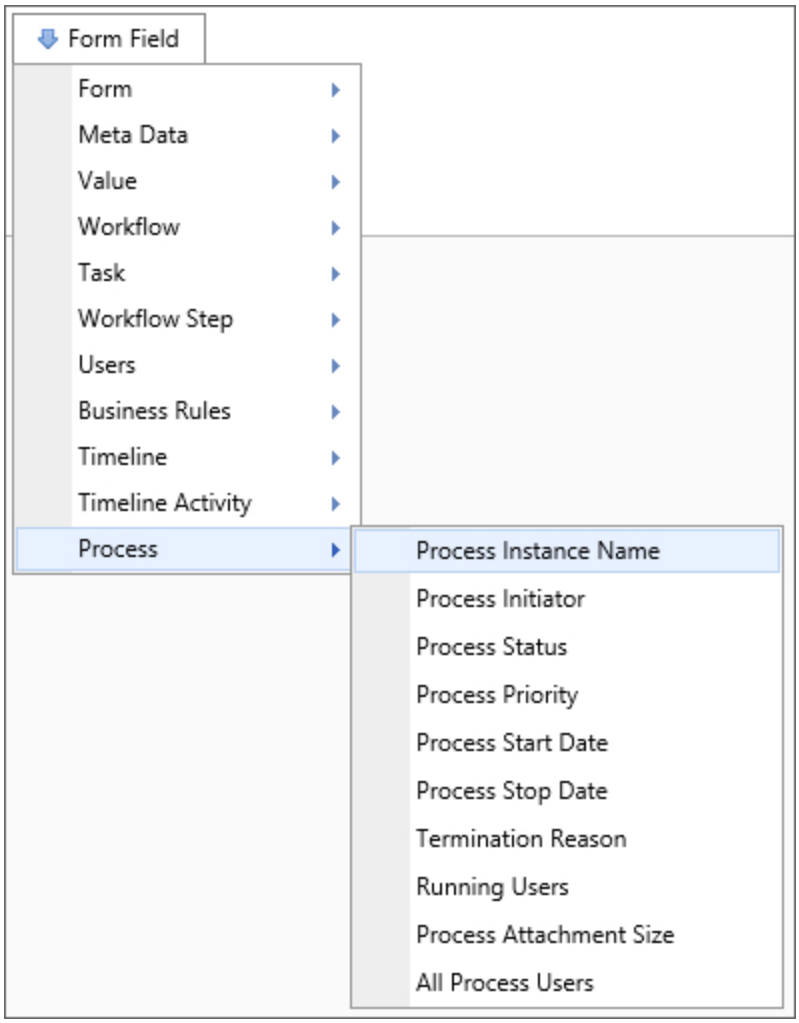
Returns

This system variable returns the ID of the current process.

SysVar Tag

`{PROCESS_INSTANCE_ID}`

Process Instance Name



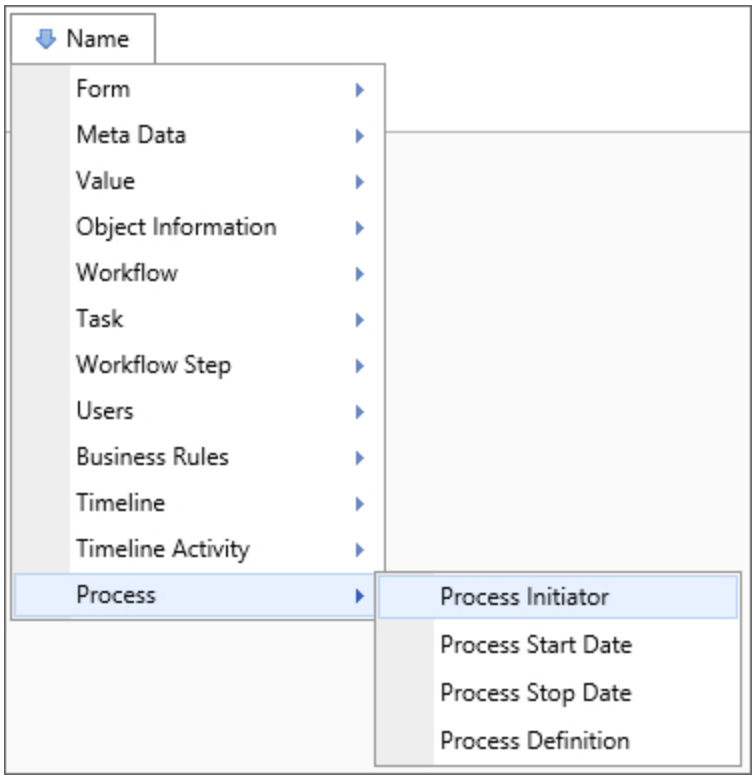
Returns

This system variable returns the name of the current process instance.

SysVar Tag

`{PROCESS_NAME}`

Process Initiator



Returns

This system variable returns information about the user that initiated this instance of a process.

SysVar Tag

`{PROCESS_INITIATOR}`

Modifiers

This system variable can be formatted with the Modifiers that are generally available for User system variables.

When an object is created programmatically, e.g., via a Goal or Stream Action, there will be no value for this variable, unless the object's creation can be traced to a specific user interaction.

Process Message

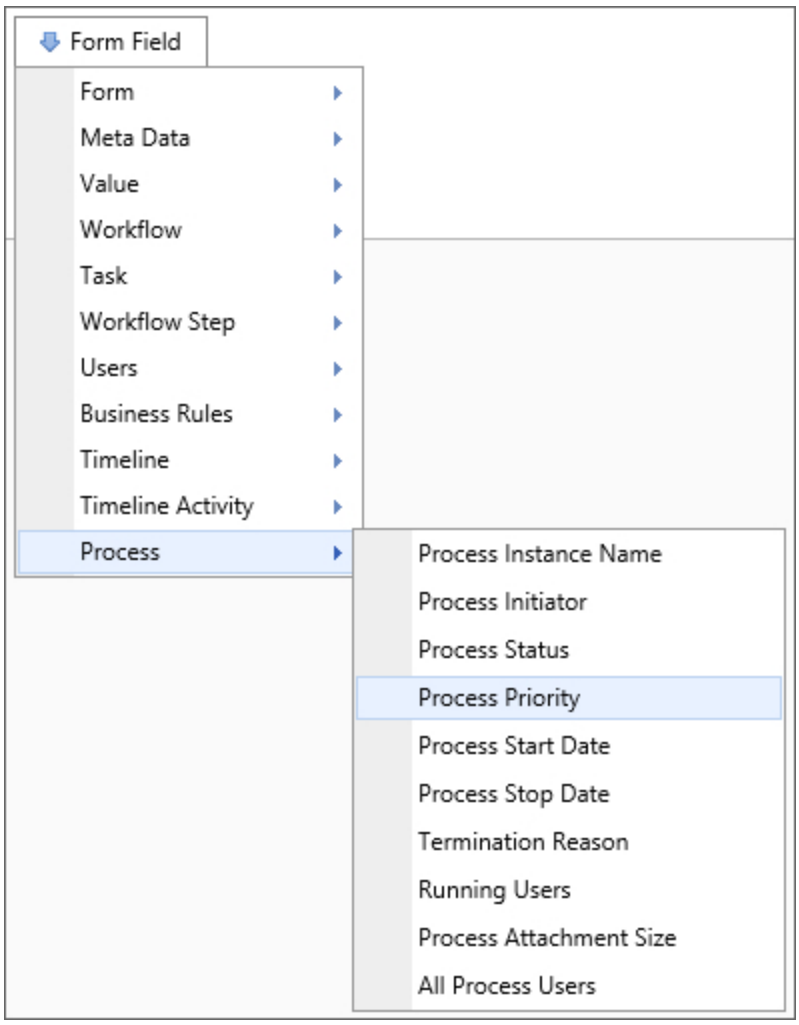
Returns

This system variable returns a process' task's message. If there is none, it returns the date the process started.

SysVar Tag

`{PROCESS_MESSAGE}`

Process Priority



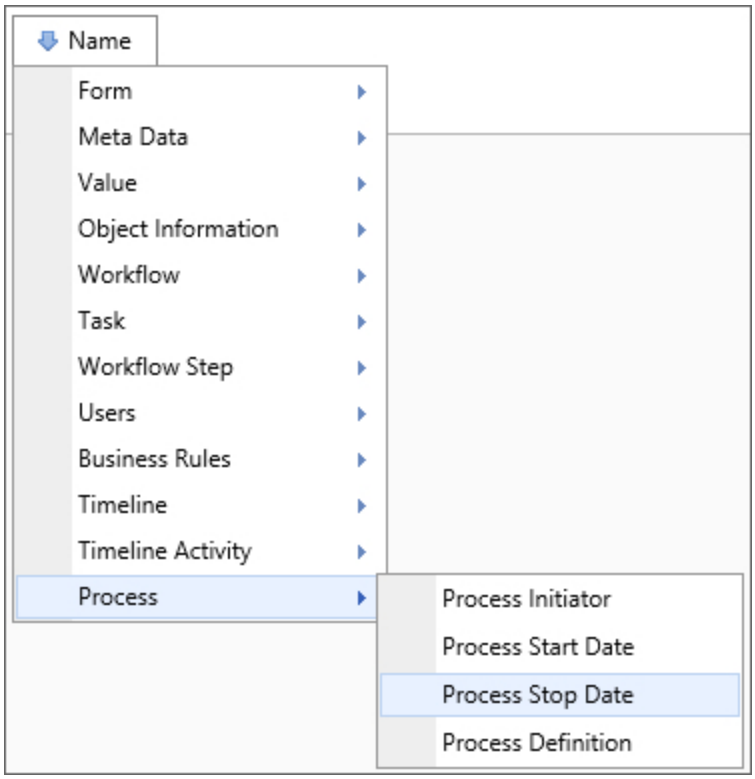
Returns

This system variable returns the priority of the current process.

SysVar Tag

`{PROCESS_PRIORITY}`

Process Start Date



Returns

This system variable returns the date this process instance started.

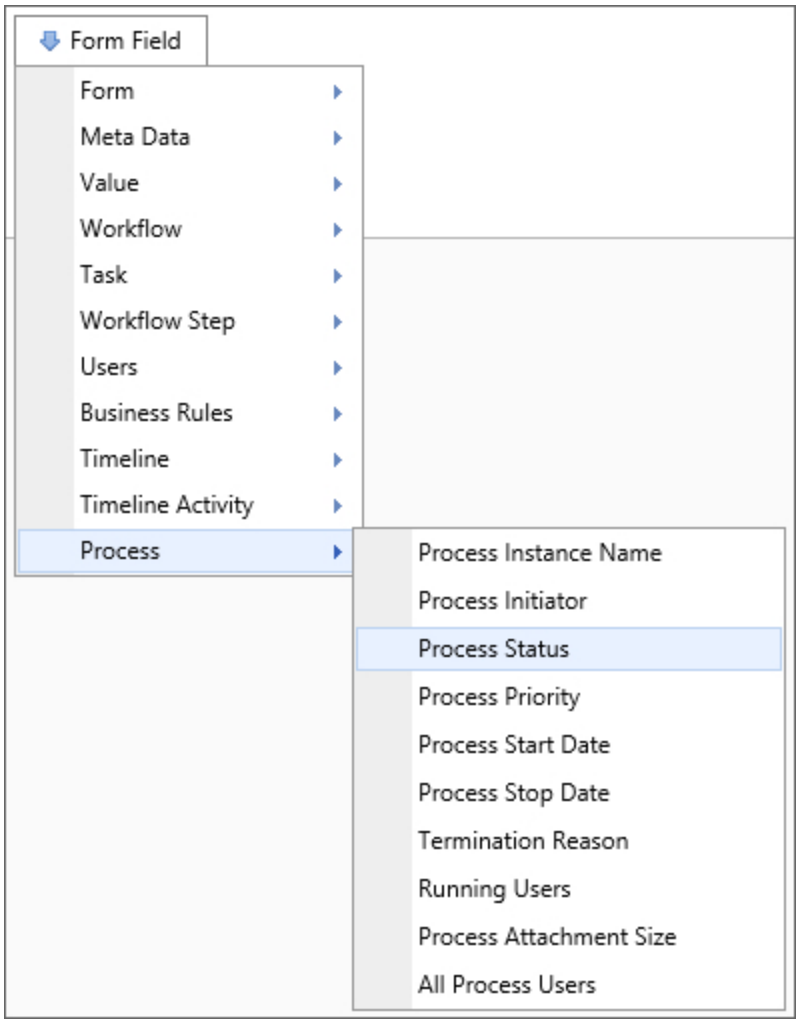
SysVar Tag

`{PROCESS_START_DATE}`

Modifiers

This system variable's result can be formatted using the Modifiers that are generally available for DateTime system variables.

Process Status



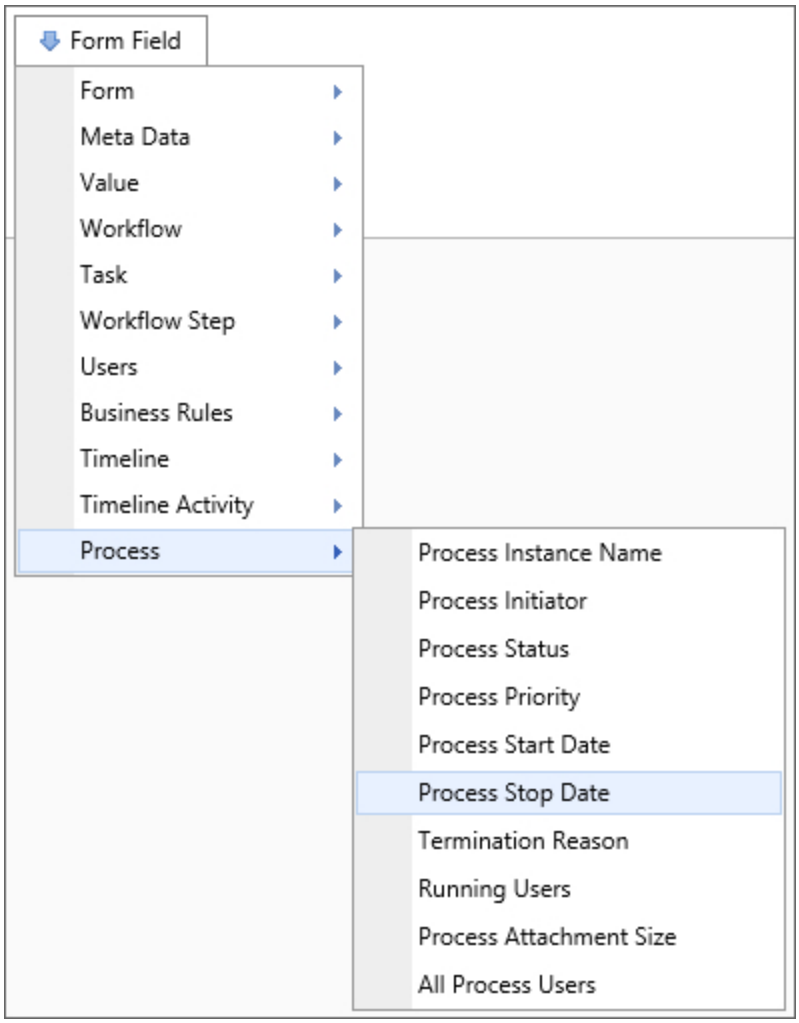
Returns

This system variable returns the status of the current process. This system variable can return “Completed”, “Running”, or “Pending”. This system variable will return “Pending” when the process is unavailable or has never been run.

SysVar Tag

`{PROCESS_STATUS}`

Process Stop Date



Returns

This system variable returns the date the process instance ended.

SysVar Tag

`{PROCESS_STOP_DATE}`

Modifiers

This system variable's result can be formatted using the Modifiers that are generally available for DateTime system variables.

Process Task Due Date

Returns

This system variable returns the due date of the current task on this process.

SysVar Tag

`{PROCESS_TASK_DUE_DATE}`

Modifiers

This system variable's result can be formatted using the Modifiers that are generally available for DateTime system variables.

Process Task Running

Returns

This system variable returns the name of the task that's currently running.

SysVar Tag

`{PROCESS_TASK_RUNNING}`

Process Task Start Date

Returns

This system variable returns the start date of the current task on this process.

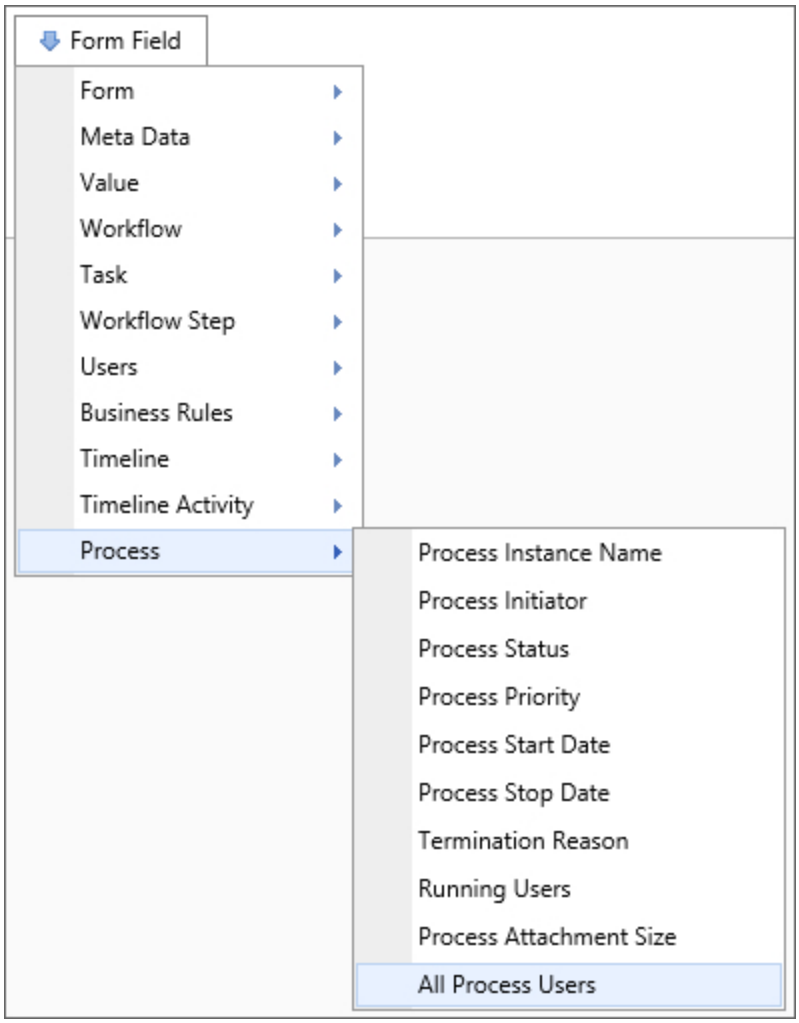
SysVar Tag

`{PROCESS_TASK_START_DATE}`

Modifiers

This system variable's result can be formatted using the Modifiers that are generally available for DateTime system variables.

All Process Users



Returns

This system variable returns all users participating in the process.

SysVar Tag

`{PROCESS_USERS_ALL}`

Process Users All Complete

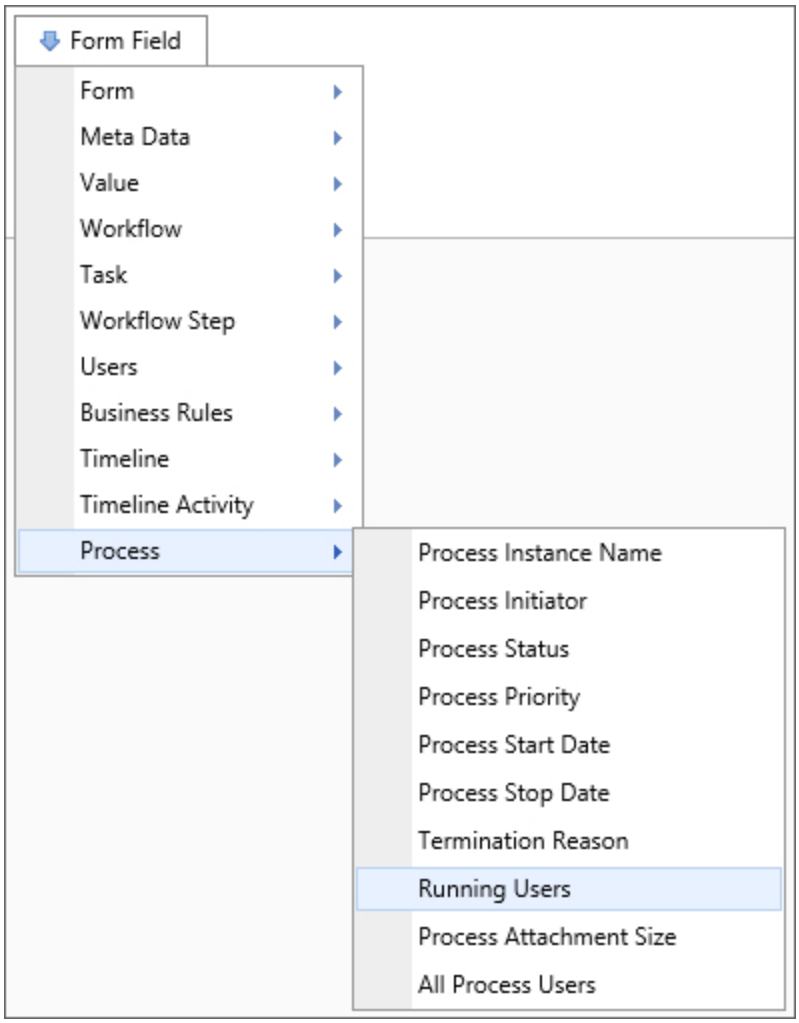
Returns

This system variable returns all users that have completed their tasks with a "normal" completion code.

SysVar Tag

`{PROCESS_USERS_ALL_COMPLETE}`

Running Users



Returns

This system variable returns a comma-separated list of all users actively involved in the current process instance.

SysVar Tag

`{PROCESS_TASK_USERS_ACTIVE}`

Modifiers

This system variable's result can be formatted using the Modifiers that are generally available for User system variables.

Alternate Syntax

`{PROCESS_USERS_ALL_RUNNING}`

Sub Task Name

Returns

This system variable returns the name of the sub task this process is running in.

SysVar Tag

`{SUB_TASK_NAME}`

Tasks In Error

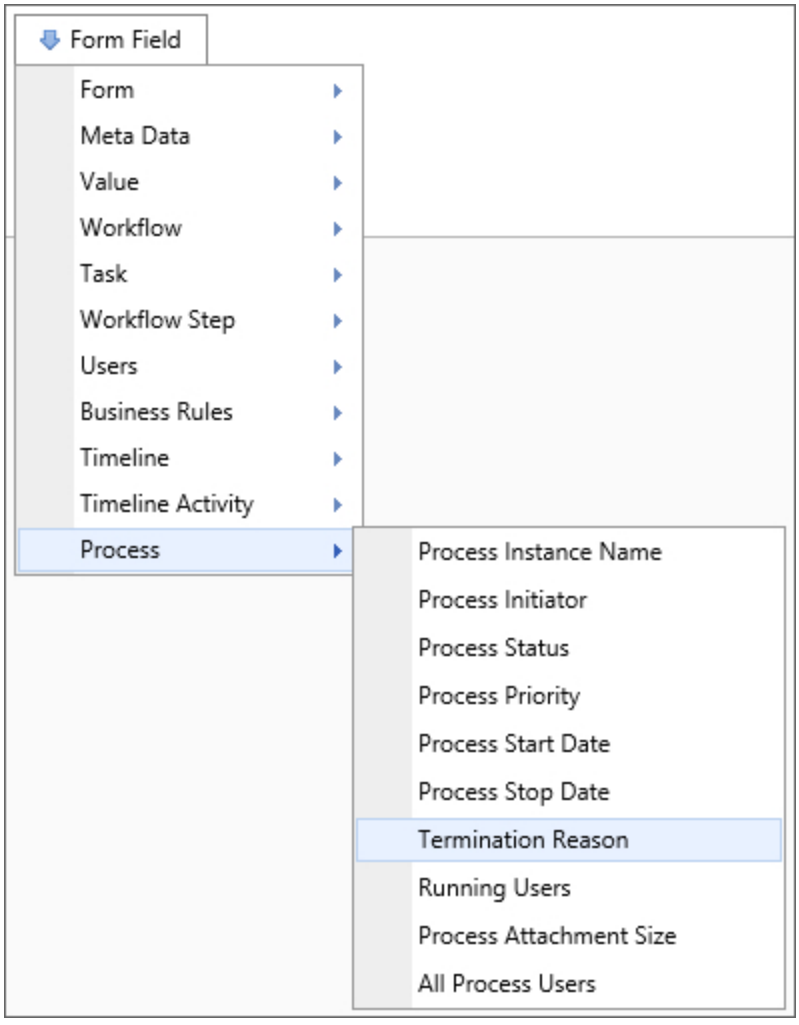
Returns

This system variable returns the name of all process steps or activities that are in an error state.

SysVar Tag

`{TASKS_IN_ERROR}`

Termination Reason



Returns

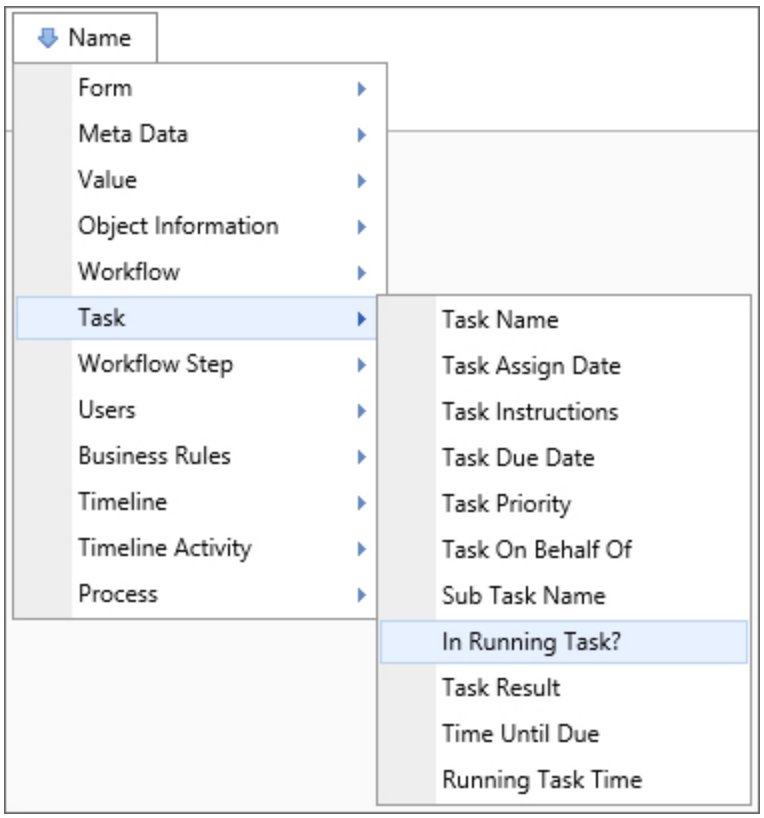
This system variable returns the reason a process instance terminated. You can use this system variable to handle unexpected process errors.

SysVar Tag

```
{PROCESS_TERM_REASON}
```

Process Task System Variables

In Running Task?



Returns

This system variable returns a Boolean value reflecting whether or not the currently logged in user is opening the Form in the context of a running task.

SysVar Tag

```
{IN_RUNNING_TASK}
```

Num Tasks

Returns

This system variable returns the number of tasks assigned to a user. If used without the optional parameters, e.g., `{NUM_TASKS}`, it will return all tasks assigned to the current user. Optional parameters enable you to specify specific task attributes or specify users other than the current user.

SysVar Tag

```
{NUM_TASKS, type=all|early|late, due_days=N|-N, user=USERID, assigned_days_ago=N|0}
```

Modifiers

due_days: This is a numeric parameter. If it is a positive number, it will be treated as the number of days until the task is due, which will return all tasks that are *within* the specified number of days of being due. If the parameter is a negative number, it will return all tasks that are *at least* the specified number of days past due.

type: The type of task assigned to the user, the available options are "all" to count all tasks, "early" to count tasks that aren't yet due, and "late" to count past due tasks.

assigned_days_ago: This is a numeric parameter. This parameter limits the number of tasks only to those assigned X days ago. Setting this value to 0 returns only those tasks assigned today.

user: The UserID of the user for whom you wish to return the number of tasks.

Num Tasks Completed

Returns

This system variable returns the number of tasks completed by a user. If used without the optional parameters, e.g., `type`, it will return all tasks completed by the current user. Optional parameters enable you to specify specific task attributes or specify users other than the current user.

SysVar Tag

```
{NUM_TASKS_COMPLETED, type=all|early|late, completed_days_ago=N|0, user=UserID}
```

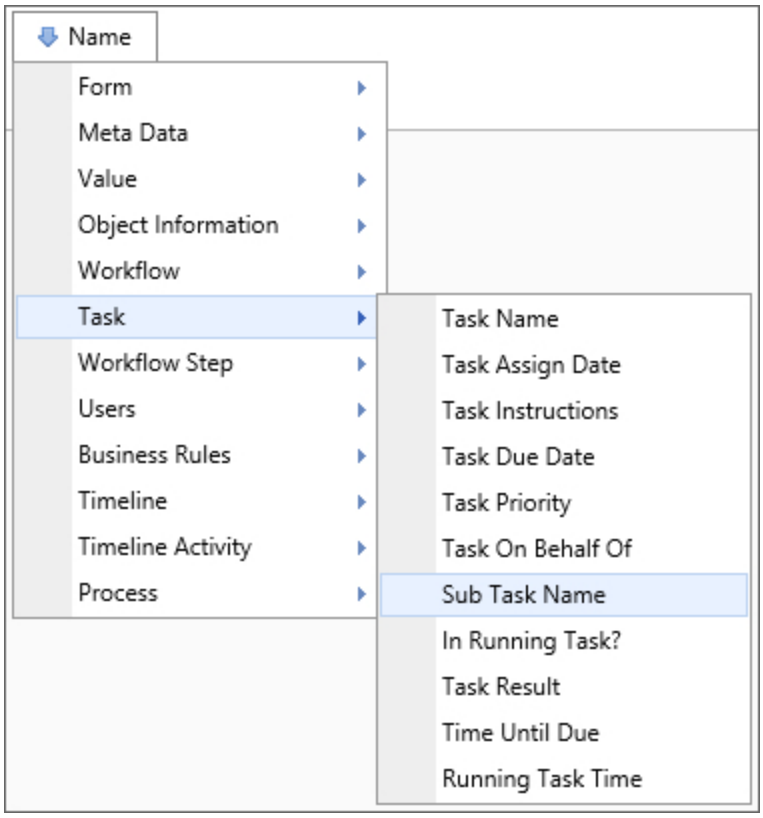
Modifiers

type: The type of task assigned to the user, the available options are `all` to count all tasks, `early` to count tasks that aren't yet due, and `late` to count past due tasks.

completed_days_ago: This is a numeric parameter. This parameter limits the number of tasks only to those assigned X days ago. Setting this value to `0` returns only those tasks completed today.

user: The UserID of the user for whom you wish to return the number of tasks.

Sub Task Name



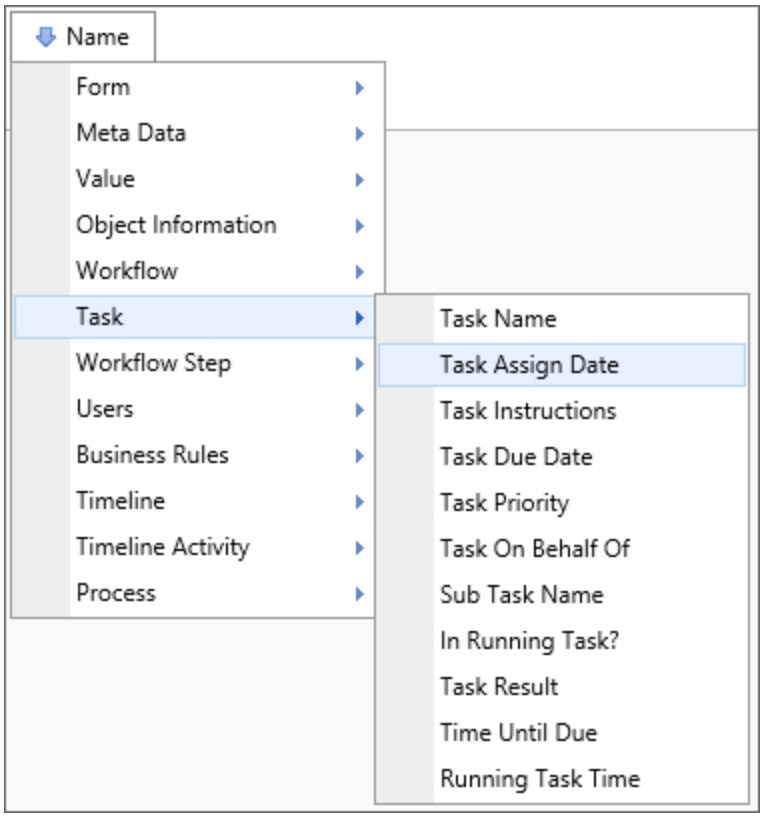
Returns

This system variable returns the name of the sub task automatically created when a user is assigned a task in a sequence.

SysVar Tag

`{SUB_TASK_NAME}`

Task Assign Date



Returns

This system variable returns the date the current task was assigned.

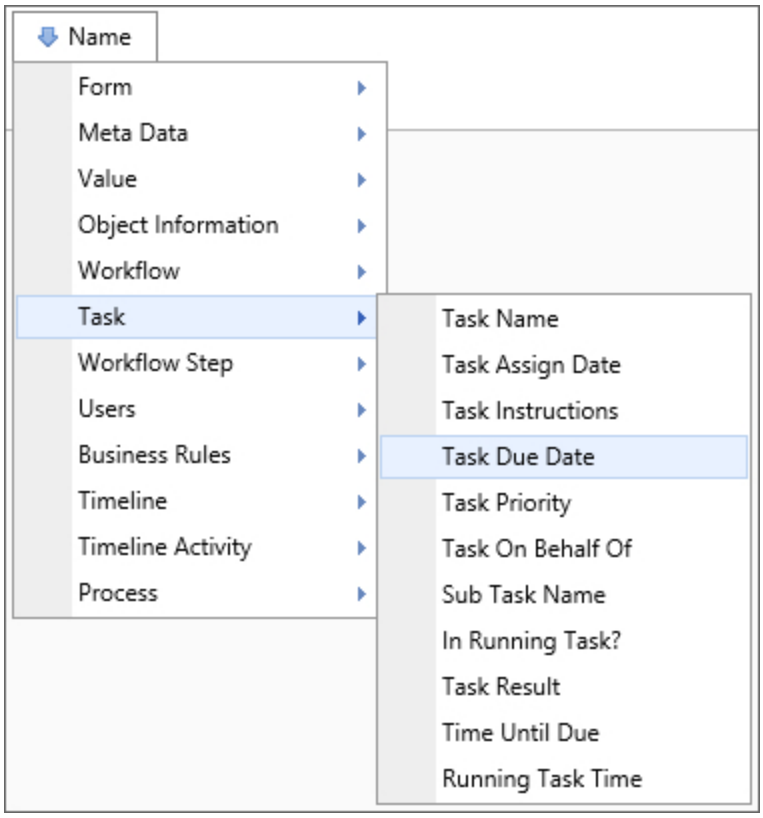
SysVar Tag

`{TASK_ASSIGN_DATE}`

Modifiers

This system variable's result can be formatted using the Modifiers that are generally available for Datetime system variables.

Task Due Date



Returns

This system variable returns the date the current task is due.

SysVar Tag

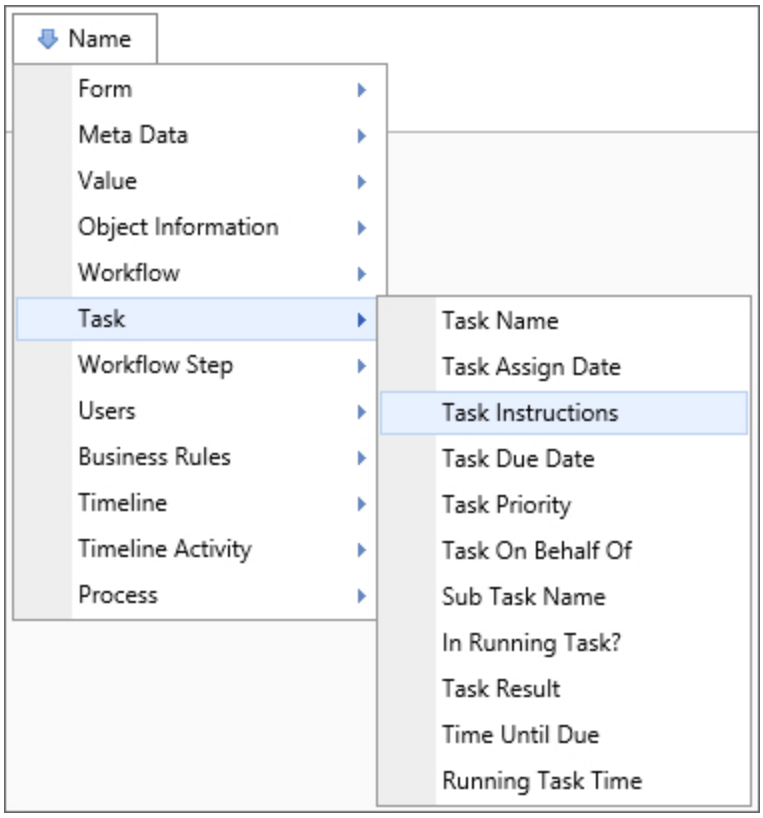
```
{TASK_DUE_DATE, UserTask=1}
```

Modifiers

UserTask=1: This optional modifier, when included in the variable, will return only dates for user task types.

This system variable's result can be formatted using the Modifiers that are generally available for Datetime system variables.

Task Instructions



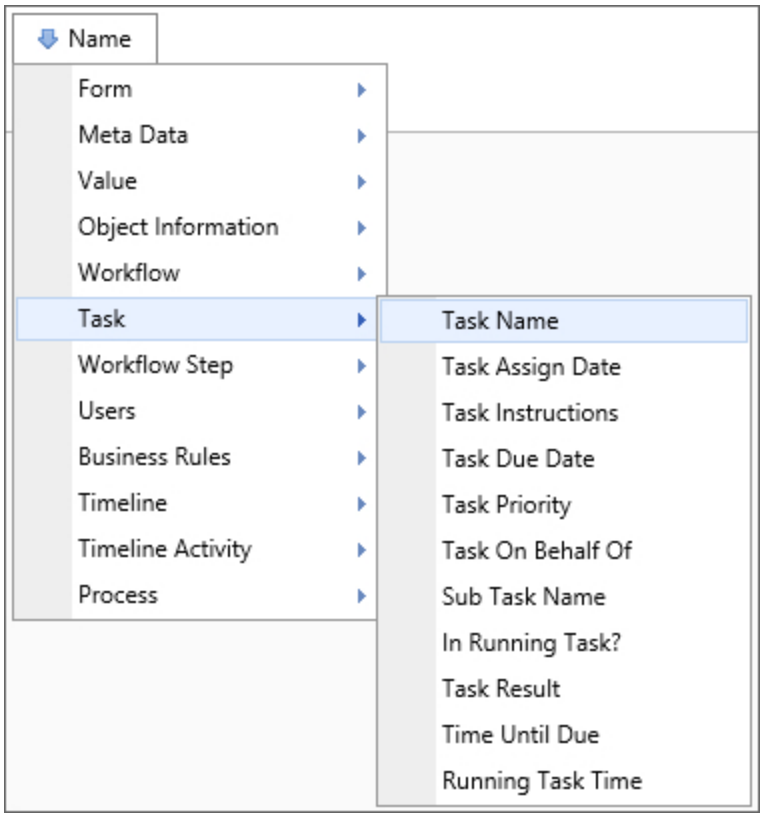
Returns

This system variable returns a string containing the instructions for the current task. The results of this system variable can be displayed on a Form to instruct the end user.

SysVar Tag

```
{TASK_INSTRUCTIONS}
```

Task Name



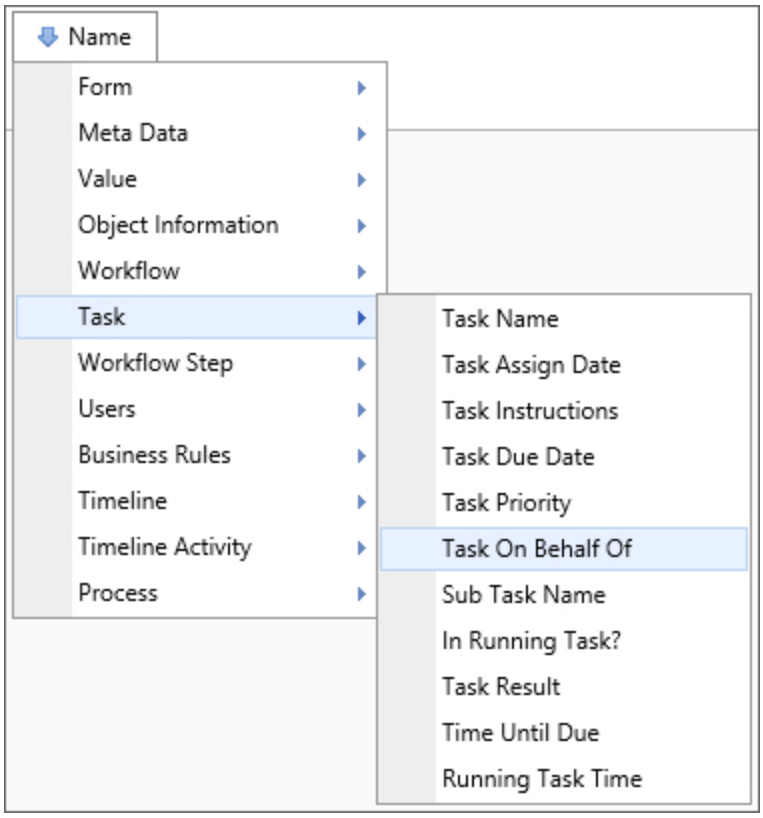
Returns

The Task Name system variable returns the name of the task that the process is currently on. A user might use this system variable to configure a Form specifically to what task is running.

SysVar Tag

`{TASK_NAME}`

Task On Behalf Of



Returns

This system variable returns information about the user who delegated this task to another user. This system variable only returns a value when the task has been delegated.

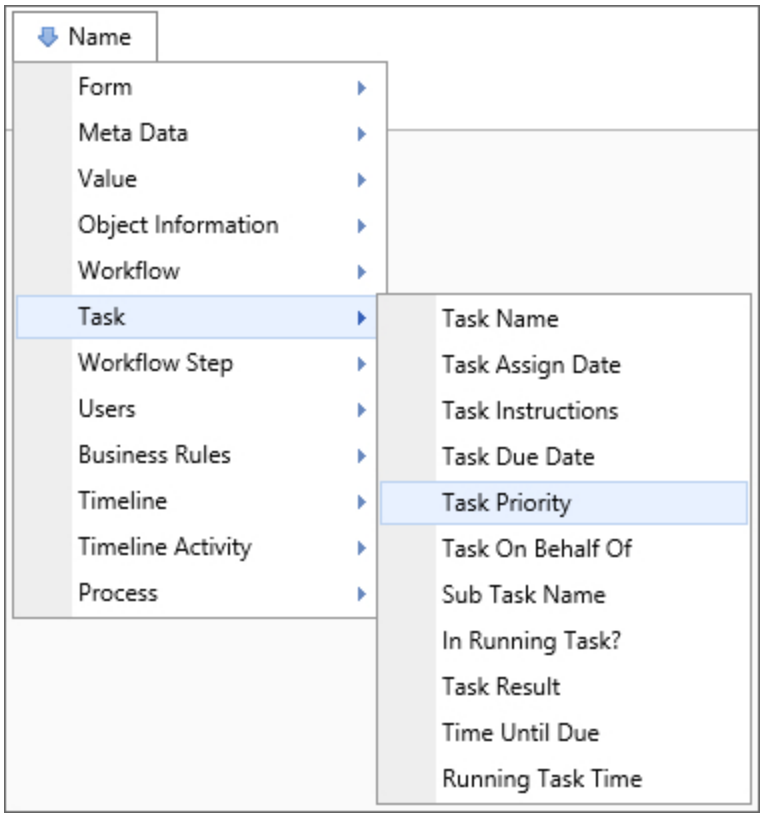
SysVar Tag

`{TASK_ON_BEHALF_OF}`

Modifiers

This system variable's result can be formatted using the Modifiers that are generally available for User system variables.

Task Priority



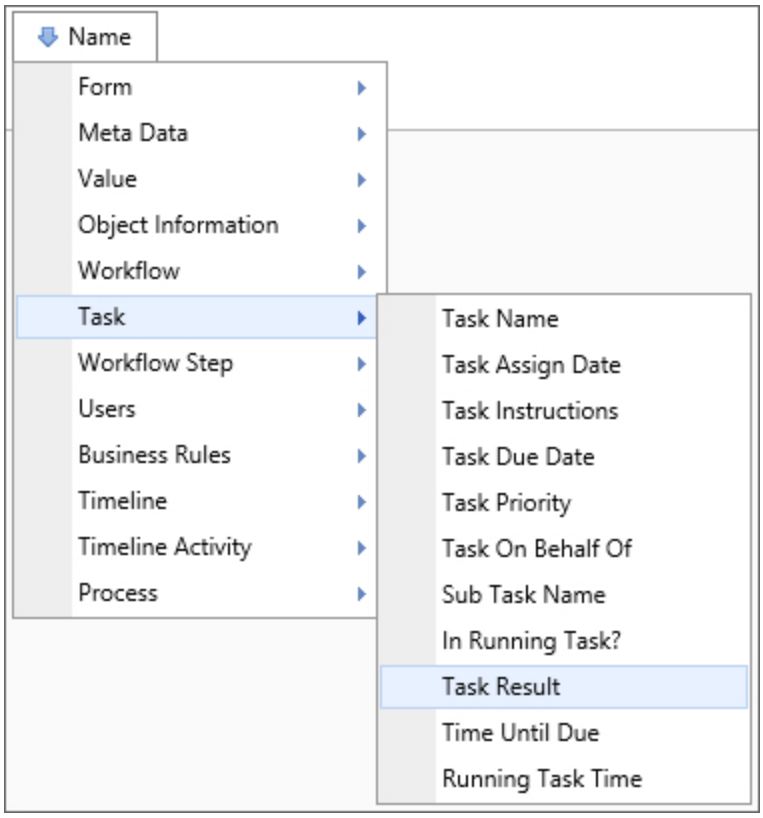
Returns

This system variable returns the priority of the current task.

SysVar Tag

`{TASK_PRIORITY}`

Task Result



Returns

This system variable returns the result of the specified task.

SysVar Tag

```
{TASK_RESULT}
```

Task Run Time

Returns

This system variable returns the amount of time elapsed for the currently running task.

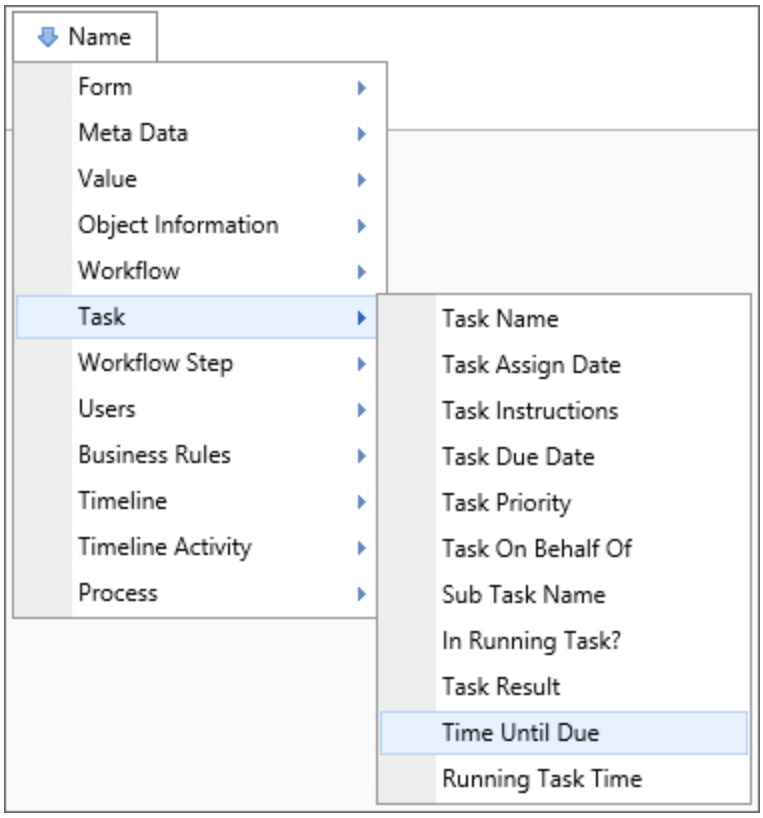
SysVar Tag

```
{TASK_RUN_TIME}
```

Modifiers

This system variable's result can be formatted using the Modifiers that are generally available for TimeSpan system variables.

Task Time Until Due



Returns

This system variable returns the amount of time until the current task is due.

SysVar Tag

`{TASK_TIME_UNTIL_DUE}`

Modifiers

This system variable's result can be formatted using the Modifiers that are generally available for TimeSpan system variables.

Task User

Returns

This system variable returns the user who is listed as a delegate for shared tasks through the Shared Delegation functionality.

SysVar Tag

`{TASK_USER}`

Task Waiting for Acceptance

This system variable returns a Boolean value that indicates whether the task is still waiting for acceptance. This variable is only useful in the context of a task that is assigned to the first user to accept the

task.

Returns

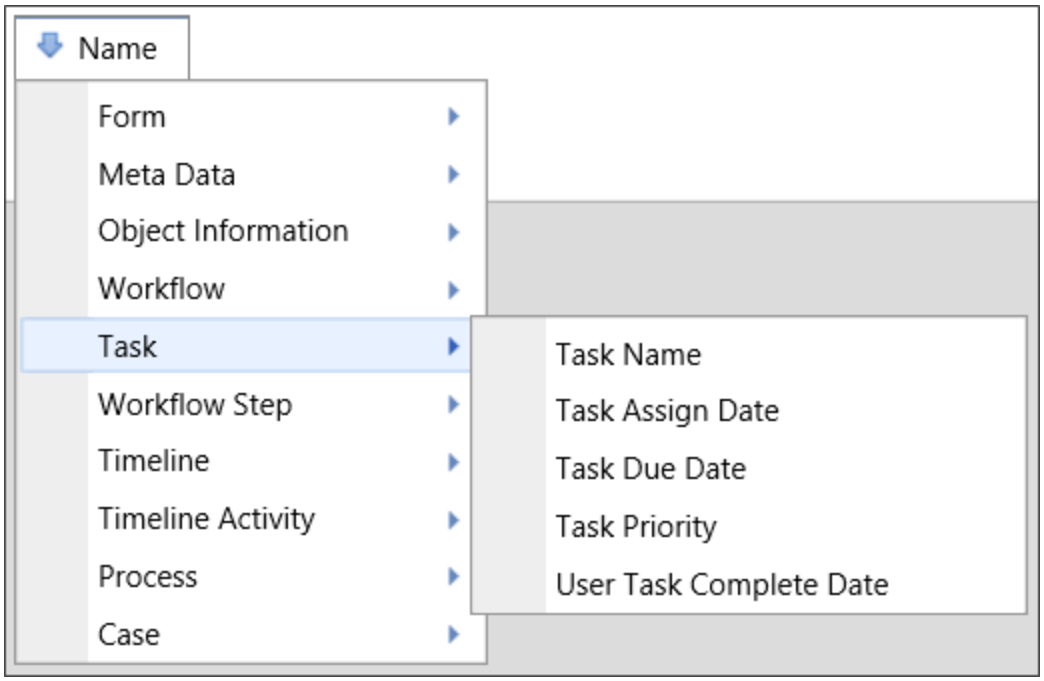
Boolean: True if the task is still awaiting acceptance, and False if the task has been accepted by a user.

SysVar Tag

`{TASK_WAITING_FOR_ACCEPT}`

User Task Complete Date

This system variable returns a list of tasks that were completed on a specified date, or in a specified date range. It is used only in filter conditions for a Knowledge View. The time specified can be a date, a month number, a month name, or a year. The system will use the closest "year" when a month value is used, e.g., a specified value of "7" or "July" will return all tasks completed in July of the current year.



Returns

Date: The date the task was completed by the user.

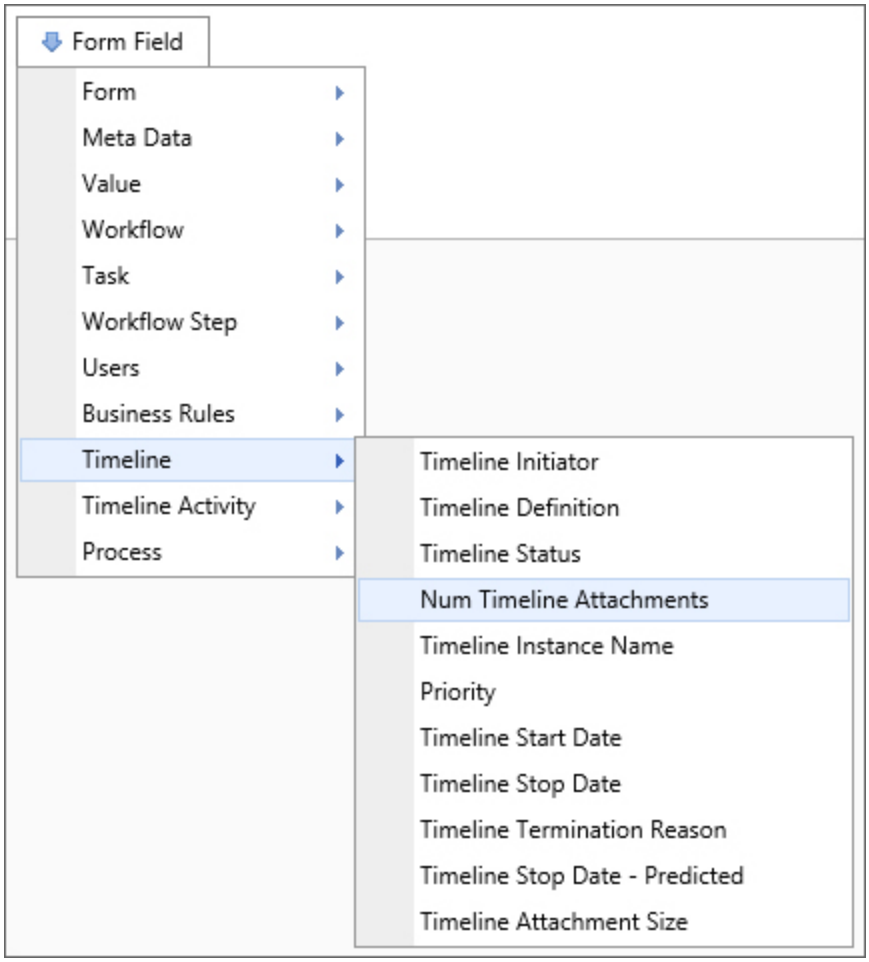
SysVar Tag

This variable doesn't have a text representation.

Timeline System Variables

System variables that return a DateTime value will have the universal formatting options specified in the DateTime section of the System Variable parameters topic. System variables that return a Timespan value will have the universal formatting options specified in the Timespan section of the System Variable parameters topic.

Num Timeline Attachments



Returns

This system variable returns the number of items attached to a timeline. You can tell the system variable only to count items within a certain group.

SysVar Tag

```
{TIMELINE_ATTACHMENT_NUM, ObjectType=Document|Form,
CSStatus=Pending|NotPending|Failed|Done|PendingOrFailed, GroupName=Group,
UploadStatus=PENDING|NOT_PENDING}
```

Modifiers

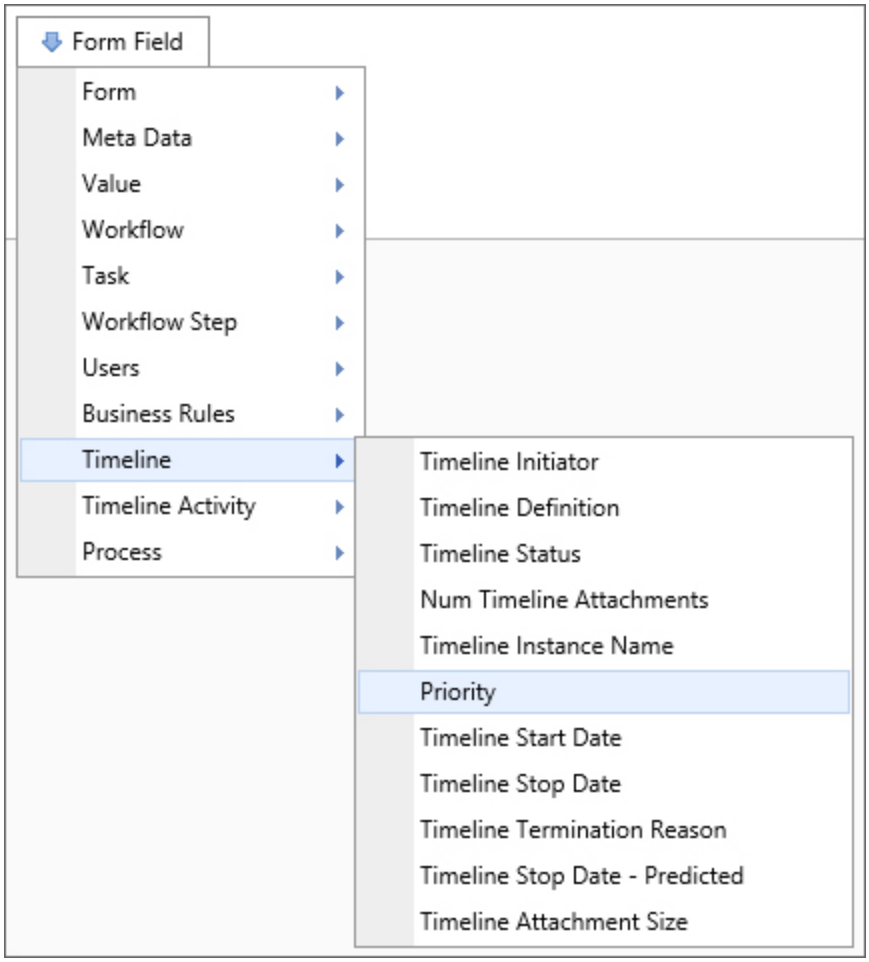
ObjectType: This system variable's results can be restricted by object type using this parameter. Acceptable values are DOCUMENT and FORM, and the return will be limited to only the number of objects of the specified object type.

CSStatus: The CSStatus option is available with Concept Share integration. When a value is specified, the system variable will return only the number of documents matching the specified status. If `Failed` is selected, this system variable will return the number of documents that failed to upload to Concept Share.

GroupName: The parameter limits this system variable such that it only returns only the number of attachments in the specified group.

UploadStatus: This parameter will return the number of attachments that meet the specified value.

Priority



Returns

This system variable returns the priority of the running timeline.

SysVar Tag

```
{TIMELINE_PRIORITY}
```

Termination Reason

Returns

This system variable returns a string containing the reason this timeline instance terminated. If a timeline isn't running or hasn't been completed, this system variable returns “Not Set”.

SysVar Tag

```
{TIMELINE_TERM_REASON}
```

Timeline Attachment Group

Returns

This system variable returns the name of a group that an attached object is in.

SysVar Tag

```
{TIMELINE_ATTACHMENT_GROUP}
```

Timeline Attachments

Returns

This system variable returns a comma-separated list of object names attached to this timeline instance.

SysVar Tag

```
{TIMELINE_ATTACHMENTS, ShowName=1, ShowDesc=0, ShowID=0, GroupName=Group}
```

Modifiers

GroupName: The results returned can be filtered by group using the Groupname= option. The GroupName parameter limits this system variable such that it only returns a list of attachments in the specified group.

ShowName: The option is set to 1 by default. When set to 1, it will display the name of the attachment.

ShowDesc: The option is set to 0 by default. If set to 1, it will display the attachment’s description.

ShowID: The option is set to 0 by default. If set to 1, it will display the object’s internal ID.

If both `ShowName` and `ShowDesc` are set to 1, each attachment will be returned in the format “name : description”.

Timeline Attachment Size

Returns

This system variable returns the cumulative size of all documents attached to this Timeline.

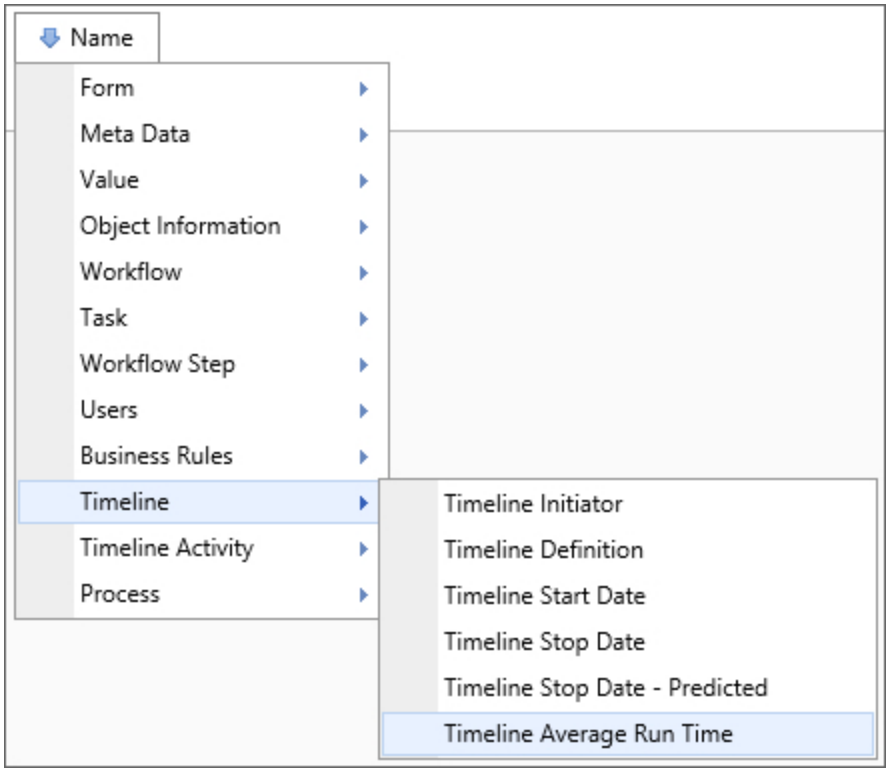
SysVar Tag

```
{TIMELINE_ATTACHMENT_SIZE, groupname="GroupName"}
```

Modifiers

GroupName: The parameter can be used to have this system variable return the cumulative size of documents only in the specified group.

Timeline Average Run Time



Returns

This system variable returns the average time this timeline takes to run.

SysVar Tag

```
{TIMELINE_AVG_RUN_TIME}
```

Modifiers

This system variable can be formatted according to the options available to TimeSpan system variables.

Timeline Configured Stop Date

Returns

This system variable returns a datetime variable containing the value of the date that this Timeline has been configured to stop.

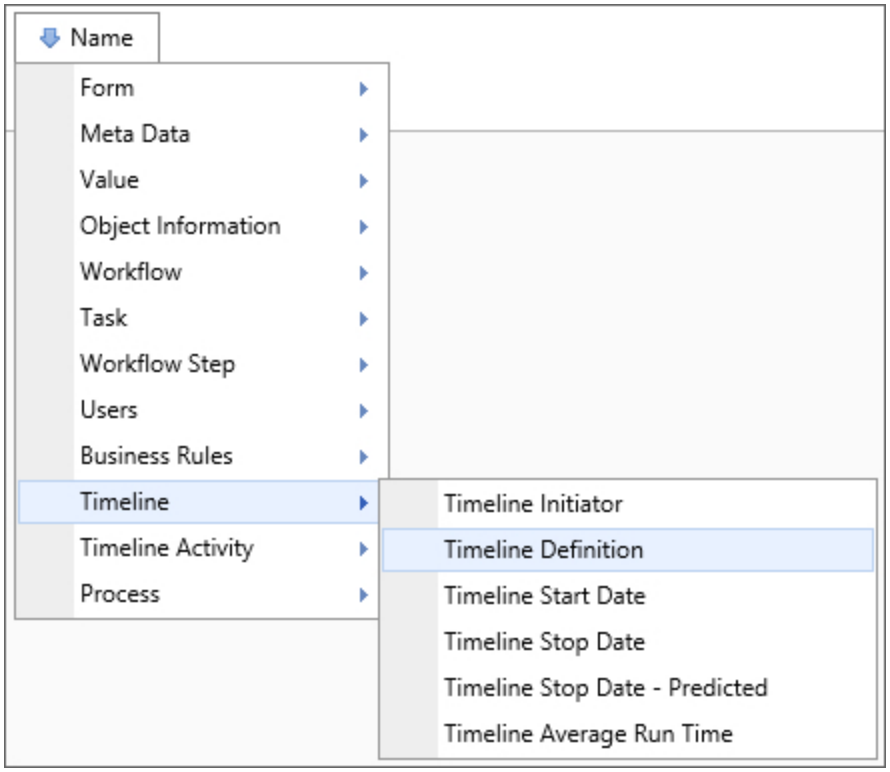
SysVar Tag

`{TIMELINE_STOP_CONFIG}`

Modifiers

This system variable can be formatted according to the options available to TimeSpan system variables.

Timeline Definition Name



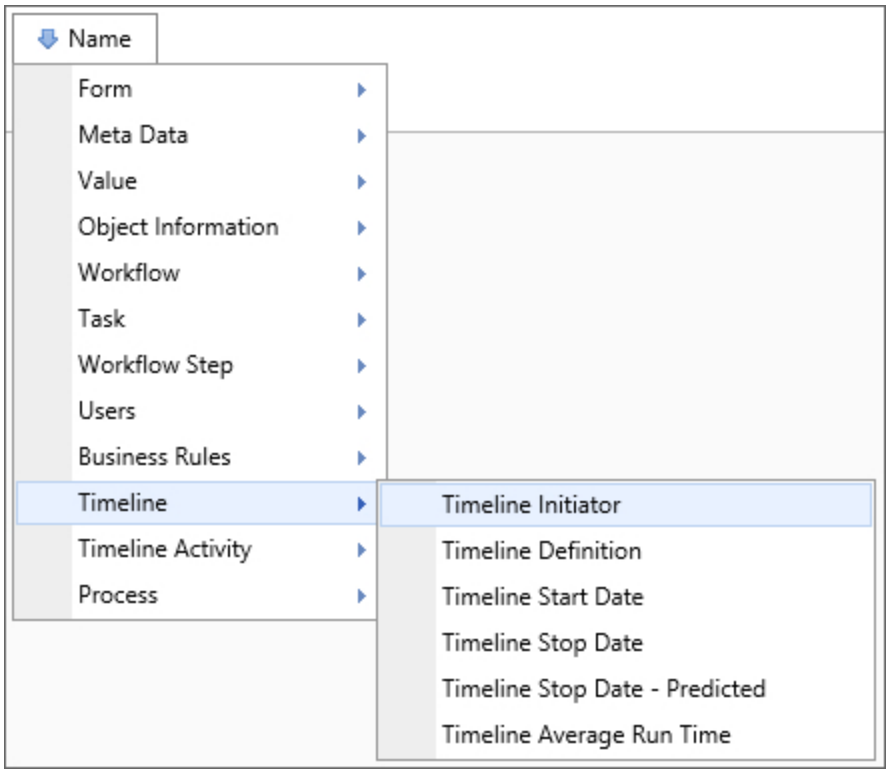
Returns

This system variable returns the name of the timeline definition this timeline is an instance of.

SysVar Tag

`{TIMELINE_DEF_NAME}`

Timeline Initiator



Returns

This system variable returns information about the user that initiated the running timeline.

SysVar Tag

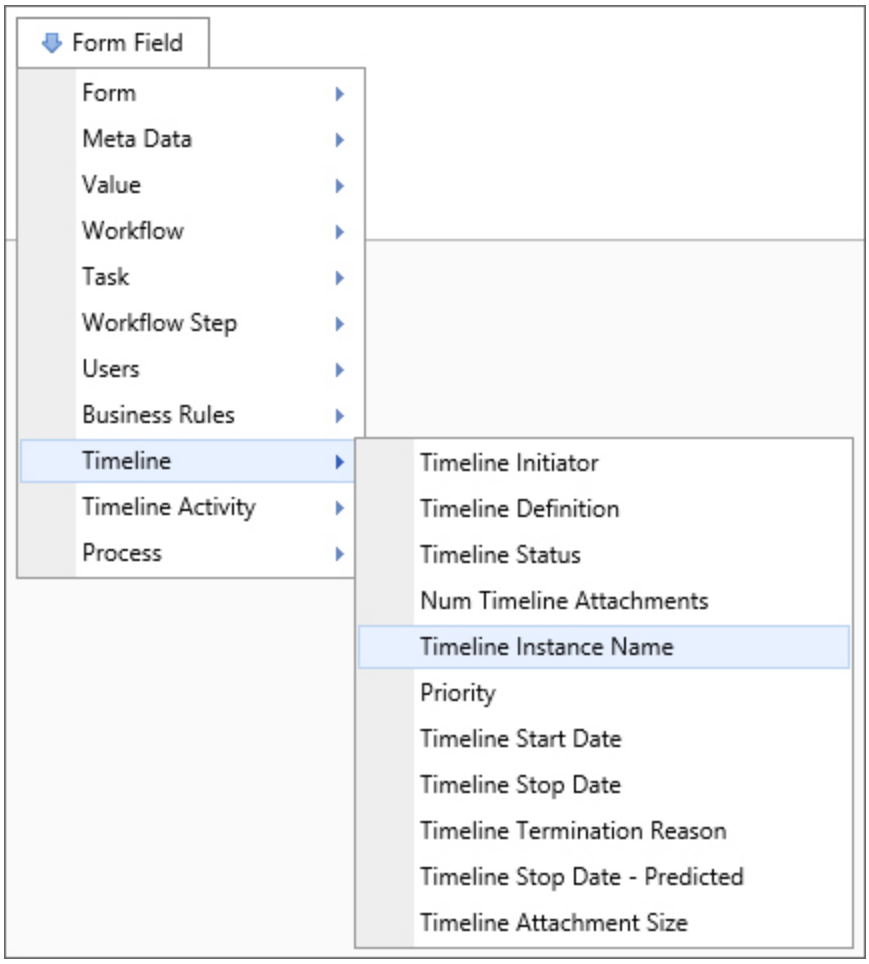
`{TIMELINE_INITIATOR}`

Modifiers

This system variable can be formatted according to the options available to User system variables.

When an object is created programmatically, e.g., via a Goal or Stream Action, there will be no value for this variable, unless the object's creation can be traced to a specific user interaction.

Timeline Instance Name



Returns

This system variable returns the name of the running Timeline instance.

SysVar Tag

```
{TIMELINE_NAME}
```

Timeline Reference Folder Path

Returns

This system variable returns a string value consisting of the folder path for Timeline attachments. If there are more than one attachment, then a comma-separated list of folder paths will be returned.

SysVar Tag

```
{TIMELINE_REFERENCE_FOLDER_PATH, groupname="GroupName"}
```

Modifiers

groupname: Returns only the paths for attachments in the specified group.

Timeline Run Time

Returns

This system variable returns the amount of time the current Timeline has been running, or the amount of time it took to run if the Timeline completed.

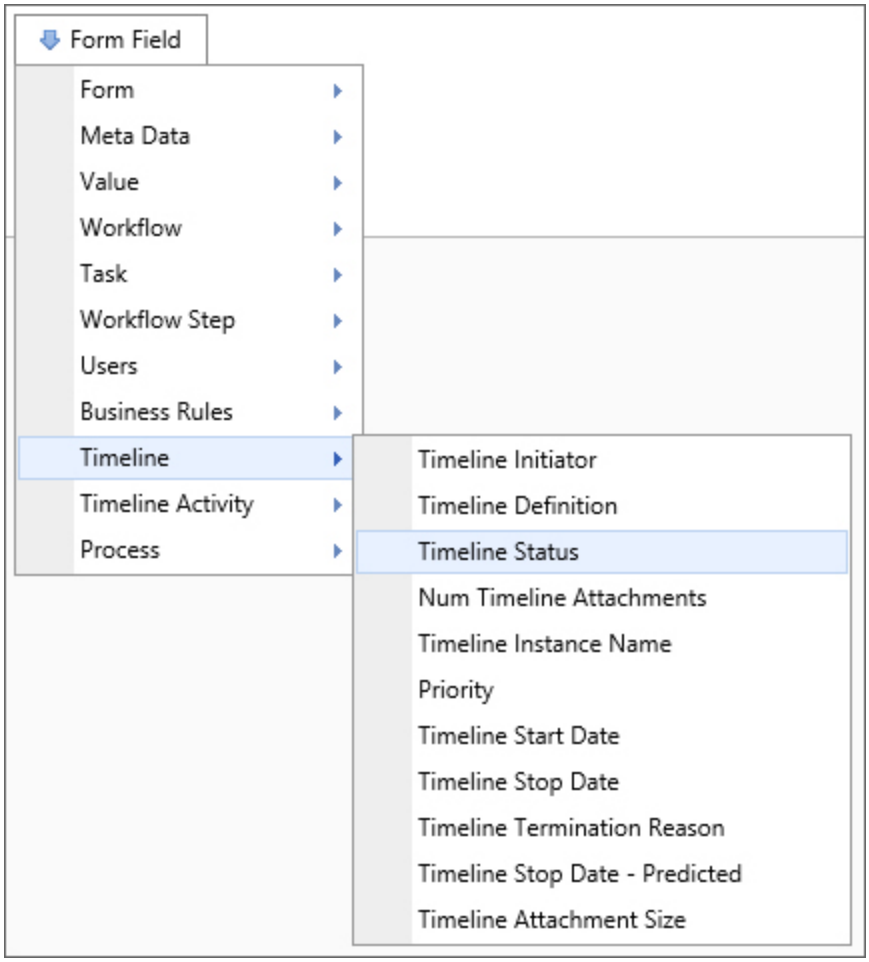
SysVar Tag

```
{TIMELINE_RUN_TIME}
```

Modifiers

This system variable can be formatted according to the options available to TimeSpan system variables.

Timeline Status



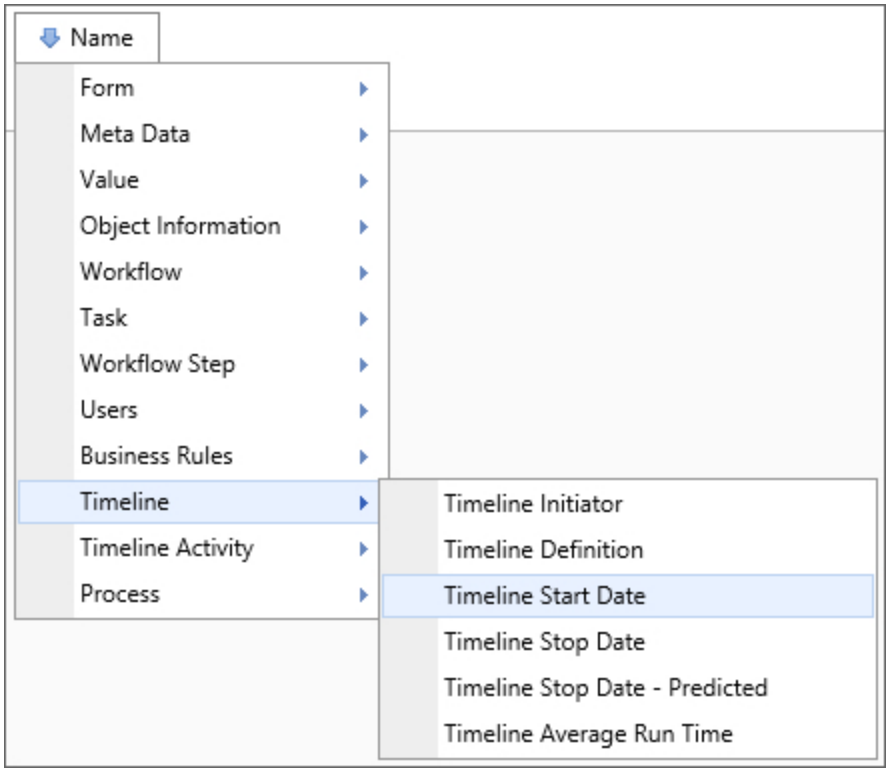
Returns

This system variable returns a string representing the status of the current timeline. The result of this system variable will be either “Completed”, “Running” or “Pending.” This system variable will return “Pending” when the timeline is unavailable or has never been run.

SysVar Tag

`{TIMELINE_STATUS}`

Timeline Start Date



Returns

This system variable returns the date this timeline instance started.

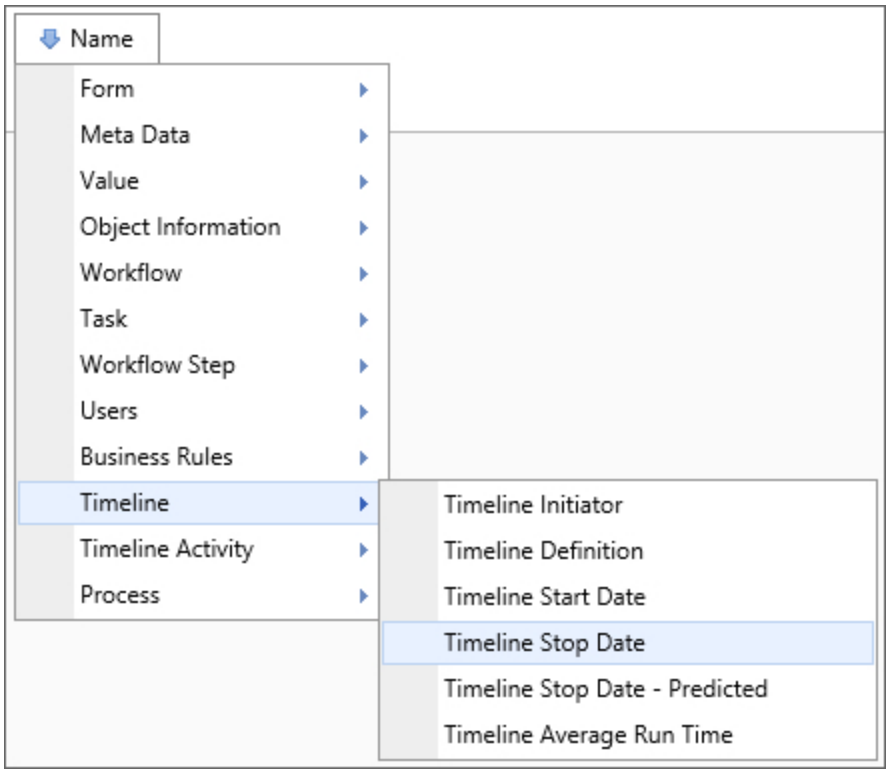
SysVar Tag

`{TIMELINE_START_DATE}`

Modifiers

This system variable can be formatted according to the options available to DateTime system variables.

Timeline Stop Date



Returns

This system variable returns the date this timeline instance stopped.

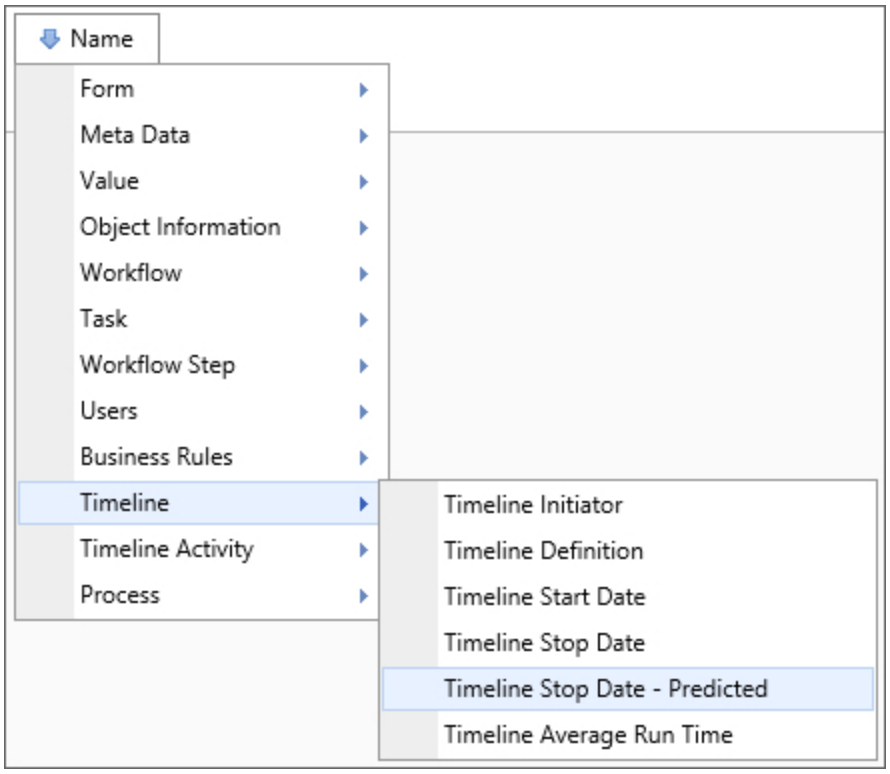
SysVar Tag

`{TIMELINE_STOP_DATE}`

Modifiers

This system variable can be formatted according to the options available to DateTime system variables.

Timeline Stop Date – Predicted



Returns

This system variable returns the predicted date that the running timeline instance will complete.

SysVar Tag

`{TIMELINE_STOP_PREDICTED}`

Modifiers

This system variable can be formatted according to the options available to DateTime system variables.

Timeline Users All

Returns

This system variable returns all users that have participated in the current Process Timeline instance.

SysVar Tag

`{TIMELINE_USERS_ALL}`

Timeline Users Complete

Returns

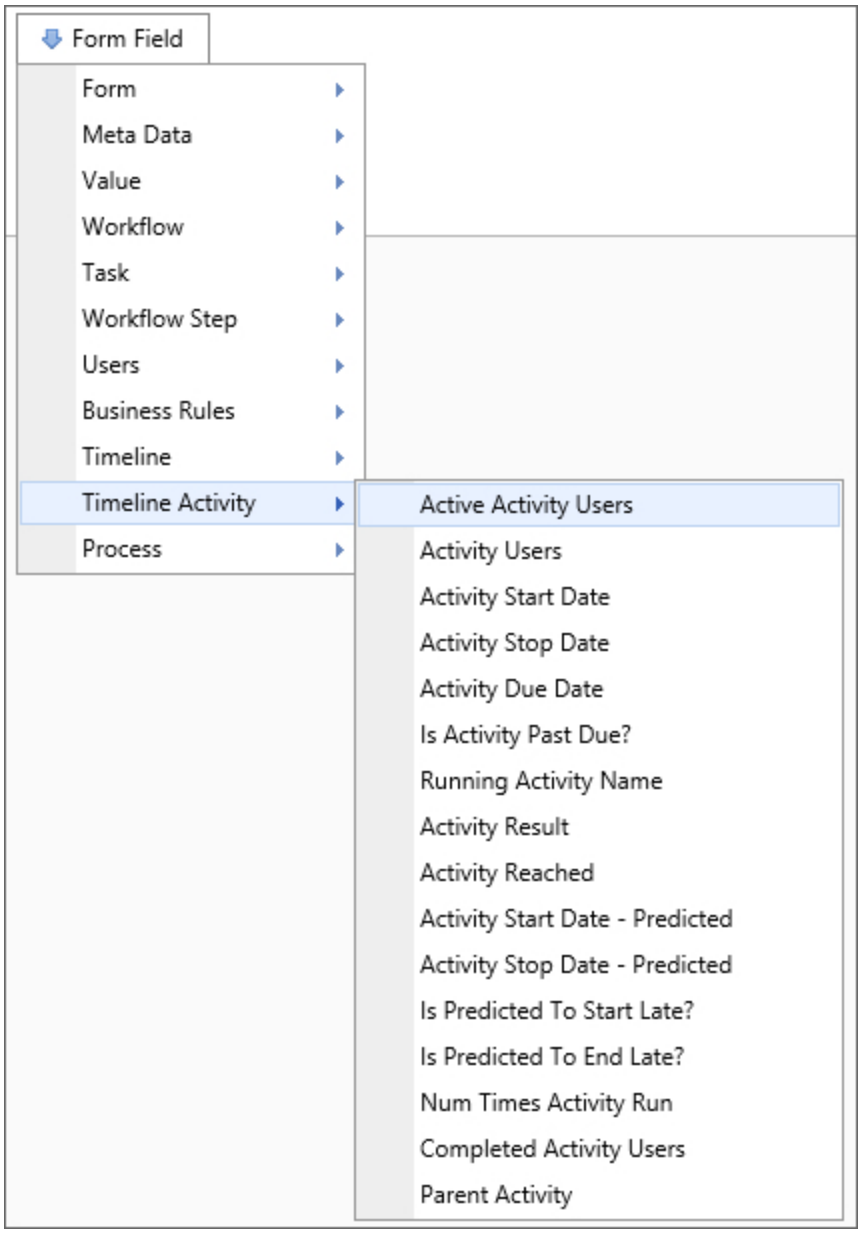
This system variable returns all users that have completed their tasks with a "normal" completion code.

SysVar Tag

`{TIMELINE_USERS_COMPLETE}`

Timeline Activity System Variables

Active Activity Users



Returns

This system variable returns a comma-separated list of the users currently actively involved in the specified activity.

SysVar Tag

```
{ACTIVITY_USERS_ACTIVE:ActivityName,Format=FormatType, Instance=InstNum}
```

Parameters

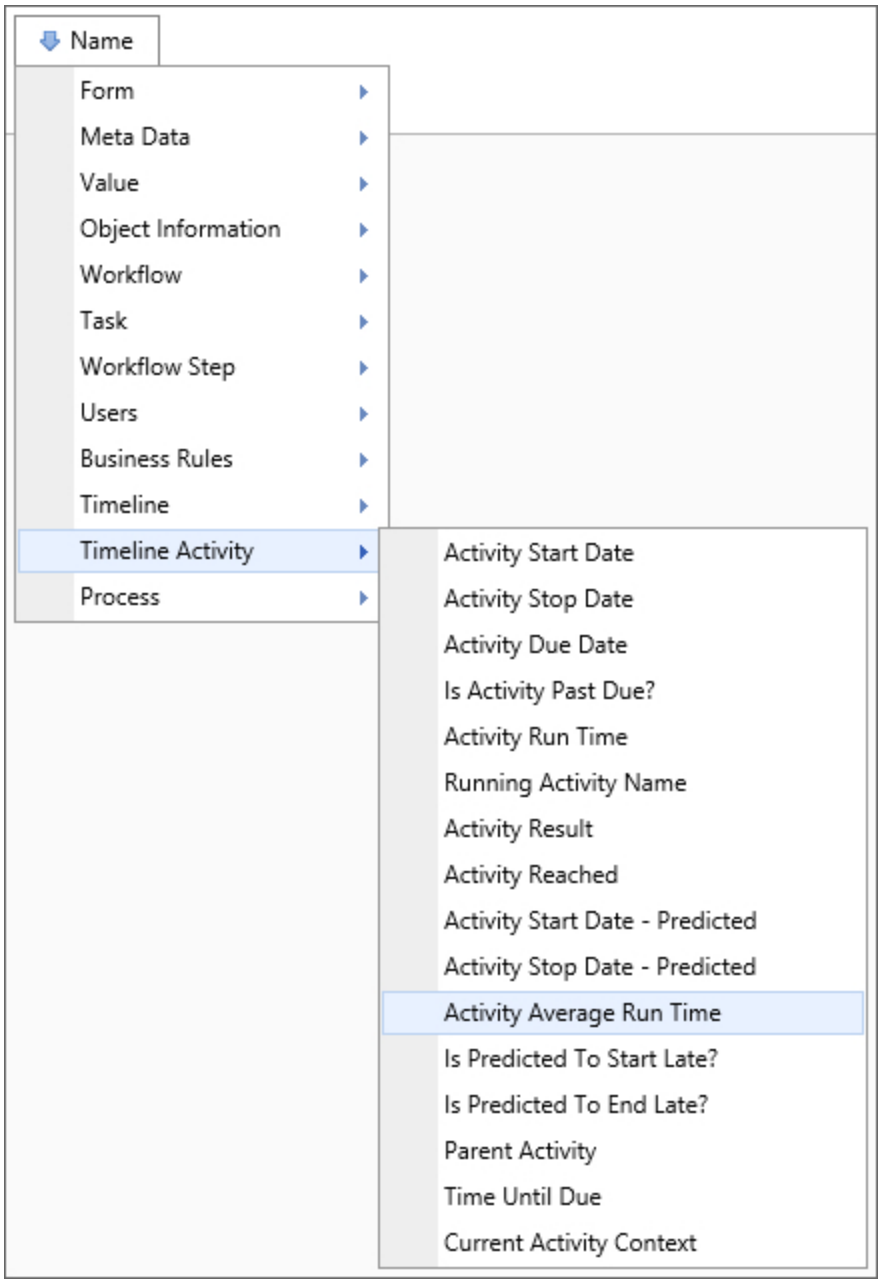
ActivityName (Required): The name of the activity for whom the users should be returned.

Modifiers

Format: This optional modifiers can be formatted to display either the number of active users in this activity (using the `format=count` argument) or the percentage of users who are active in the activity (using `format=percentage`).

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

Activity Average Run Time



Returns

This system variable returns the average amount of time a specified activity usually takes to run.

SysVar Tag

`{ACTIVITY_AVG_RUN_TIME:ActivityName}`

Modifiers

This system variable's result can be formatted using the Modifiers that are generally available for TimeSpan system variables.

Activity Bottom Running Name

Returns

This system variable returns the specified activity's lowest level activity. If two or more activities are running in different hierarchies, a comma-separated list of all lowest, unrelated, running activities will be returned.

SysVar Tag

```
{ACTIVITY_BOTTOM_RUNNING_NAME, format=id}
```

Modifiers

format=id: This optional modifier can be used to return the Activity Instance ID, instead of the activity name.

Activity Description

Returns

This system variable returns the specified activity's description.

SysVar Tag

```
{ACTIVITY_DESCRIPTION:ActivityName}
```

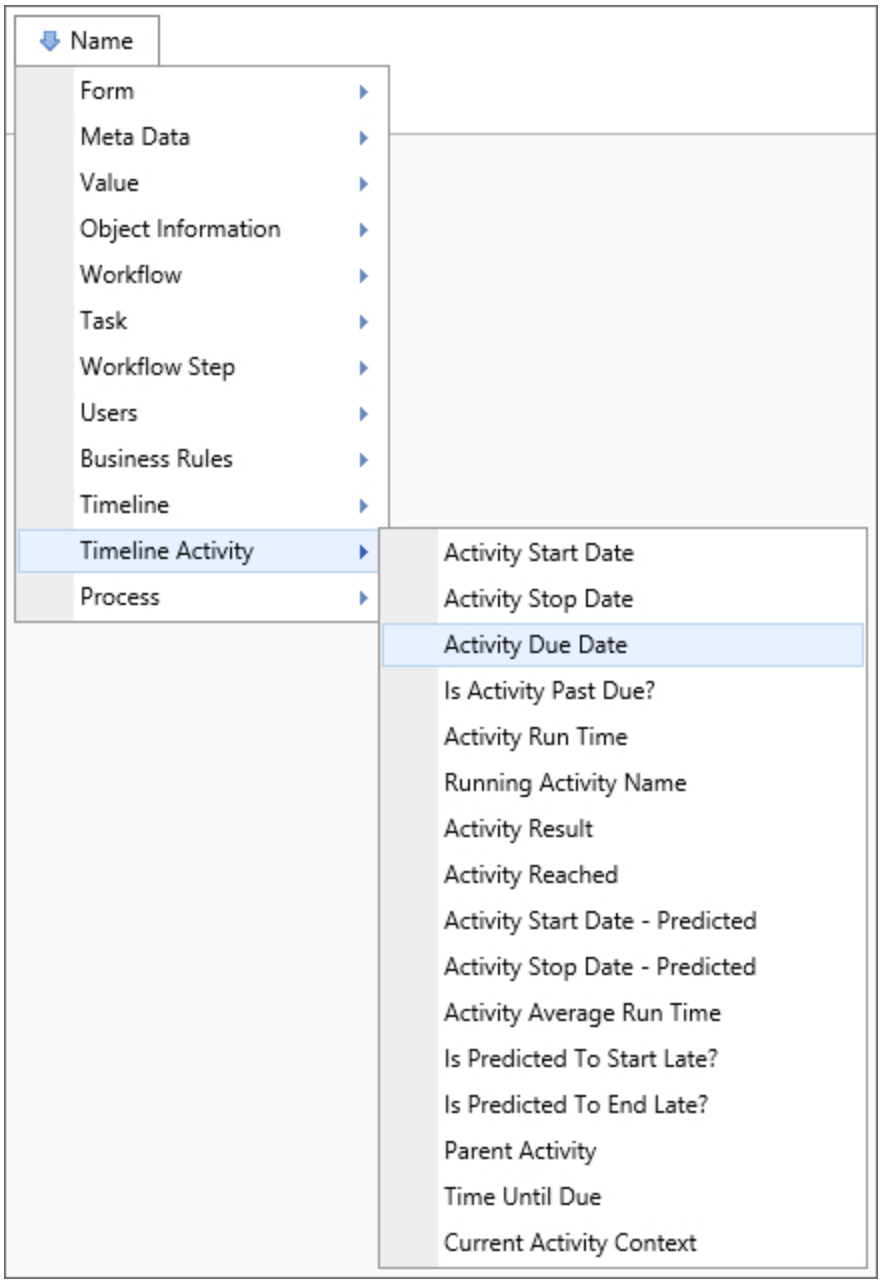
Parameters

ActivityName: If no activity name is specified, this system variable will return the description of the currently running activity.

Alternate Syntax

```
{ACTIVITY_DESC:ActivityName}
```

Activity Due Date



Returns

This system variable returns the date the specified activity is due.

SysVar Tag

```
{ACTIVITY_DUE_DATE:ActivityName, Instance=N, UserTask=1}
```

Parameters

ActivityName: If no activity name is specified, this system variable will return the due date of the currently running activity.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

UserTask=1: This optional modifier, when included in the variable, will return only user activities.

This system variable's result can be formatted using the Modifiers that are generally available for DateTime system variables.

Activity In Error

Returns

This system variable returns true or false based on whether an activity is in error. For users of v5.07 and higher, using the optional format parameter changes the behavior to return the name(s) of activities that are in error, either singly, or in a comma-separated list (for multiple activities in error).

SysVar Tag

```
{ACTIVITY_IN_ERROR, format=ActivityName}
```

Modifier

format: You may use this parameter to return the error instances of a specified activity.

Activity Instance ID

Returns

This system variable returns the Activity Instance ID of the currently running activity.

SysVar Tag

```
{ACTIVITY_INSTANCE_ID}
```

Activity Loop Count

When a parent activity is configured to implement iteration, this SysVar is used to determine the number of iterations that have occurred in the loop.

SysVar Tag

```
{ACTIVITY_LOOP_COUNT:ActivityName}
```

Parameters

ActivityName (Required): The name of the activity whose loop count you wish to return.

Alternate Syntax

```
{LOOP_COUNT:ActivityName}
```

Activity Message

Returns

This system variable returns a message for a specified activity.

SysVar Tag

```
{ACTIVITY_MESSAGE:ActivityName}
```

Parameters

ActivityName (Required): The name of the activity whose message you wish to return.

Activity Name

Returns

This system variable returns the name of the Process Timeline Activity that is currently being evaluated in the context of the object that is evaluating it. An activity, therefore, can be evaluated in an administrative context, even though the activity isn't currently running.

SysVar Tag

```
{ACTIVITY_NAME, format=id}
```

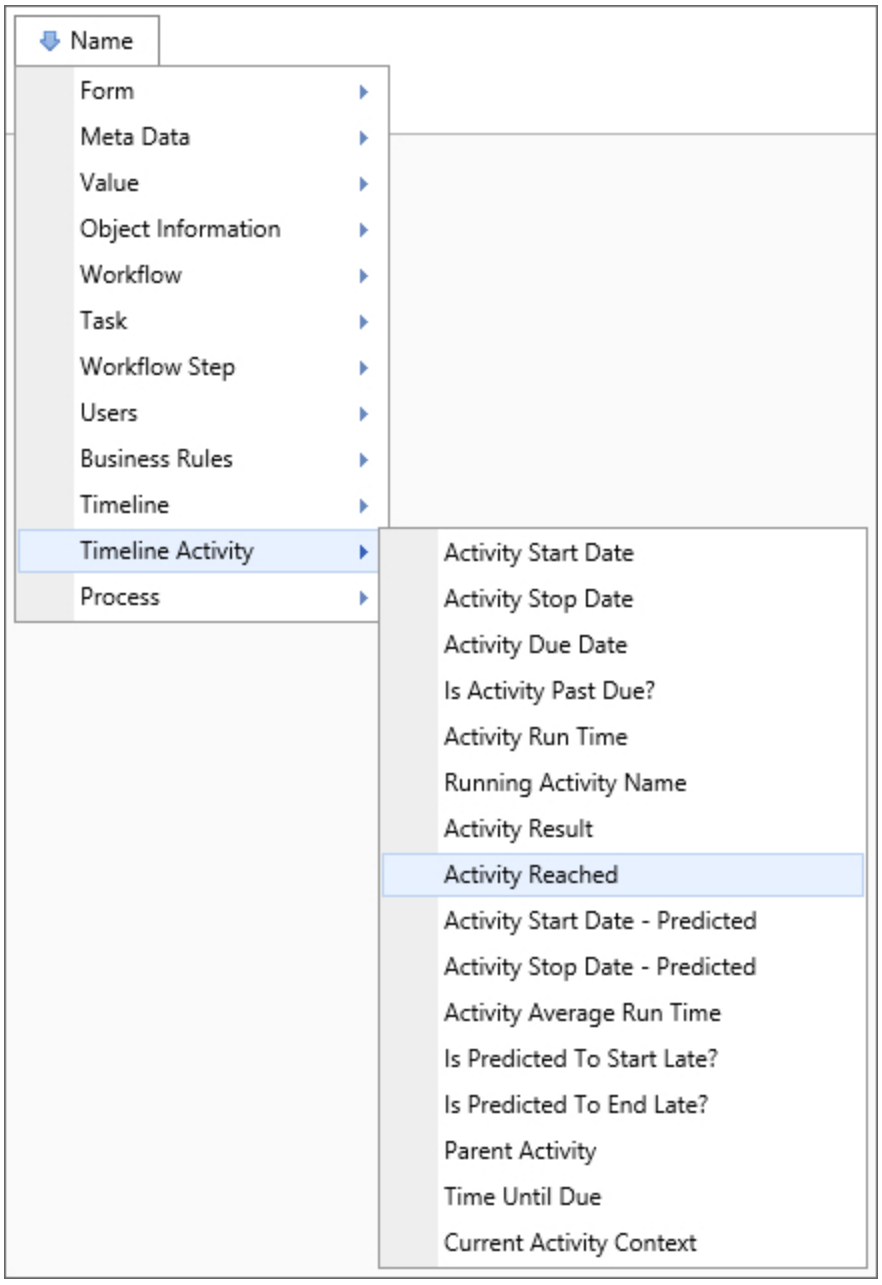
Modifiers

format=id: This optional formatter can be set to "id" to return the Activity Instance ID, instead of the activity name.

Alternate Syntax

```
{ACTIVITY_CONTEXT}
```

Activity Reached



Returns

This system variable returns a Boolean value based on whether the specified activity has been reached.

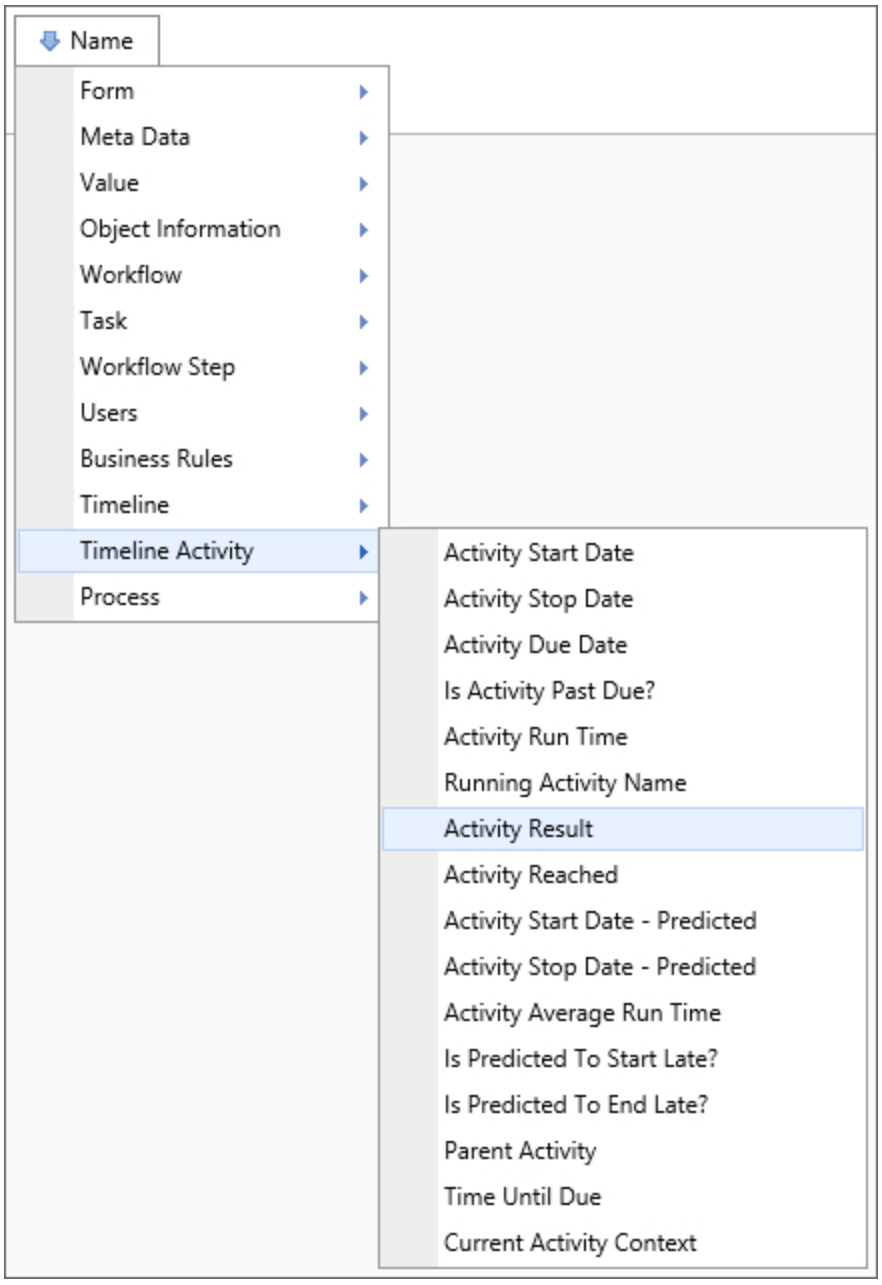
SysVar Tag

```
{ACTIVITY_REACHED:ActivityName}
```

Parameters

ActivityName (Required): The name of the activity whose reach you are checking.

Activity Result



Returns

This system variable returns the result of a specified activity instance.

SysVar Tag

```
{ACTIVITY_  RESULT:ActivityName,     instance=InstanceNum,     SubTask=SubtaskName,
separator="TextOrHTML", KeepEmptyRows=0|1}
```

Parameters

ActivityName: The name of the activity whose result you wish to return. If none is specified, it will return the start date of the current activity. This system variable can be formatted as a timespan.

Modifiers

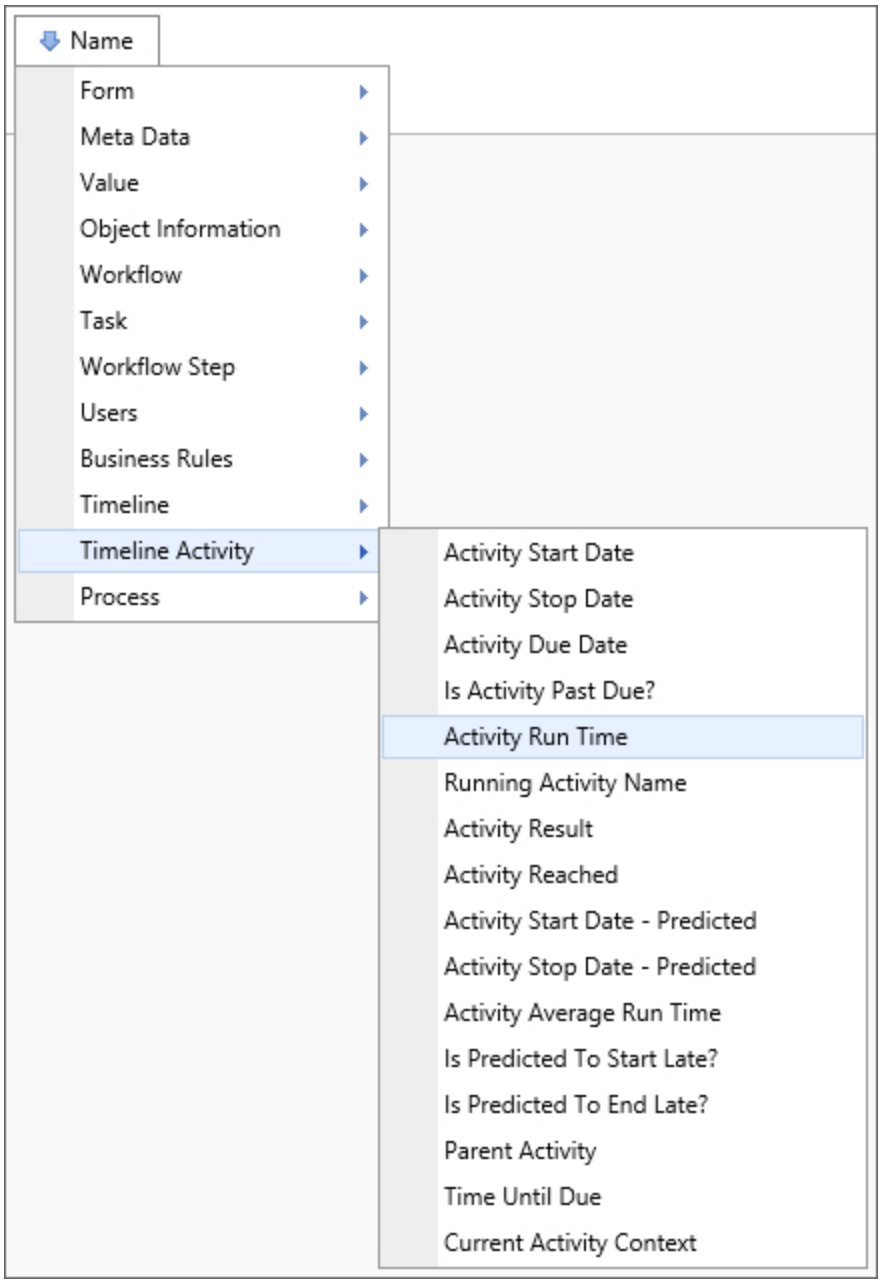
Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information. Additionally, this variable supports the syntax `instance=all` to return a list of all results for an activity that has iterated.

SubTask: The subtask for which you'd like the result to be returned.

Separator: Enables you to define a separator to use for the results when multiple results are returned.

KeepEmptyRows: The list will return an empty space for rows that have no results when multiple results are returned.

Activity Run Time



Returns

This system variable returns the amount of time this activity has been running.

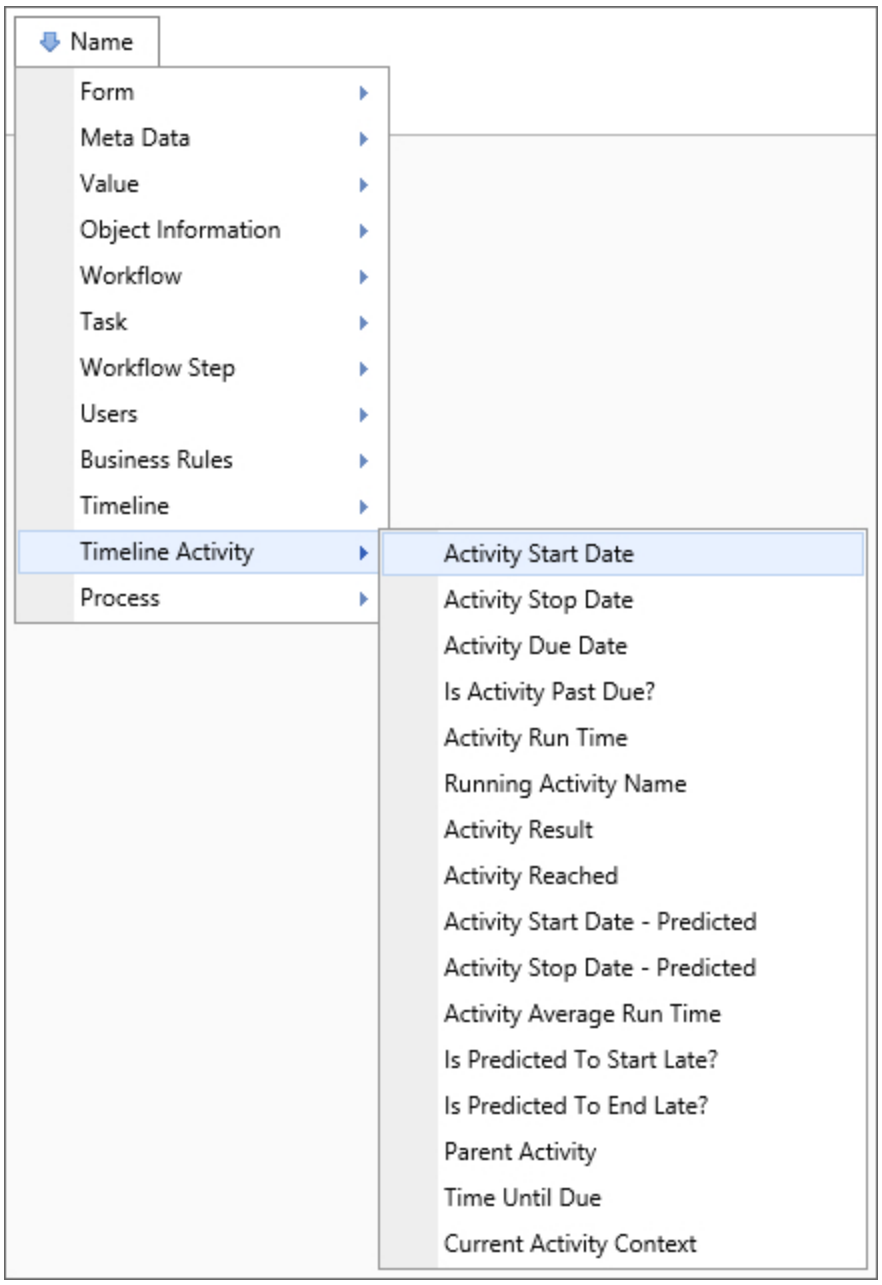
SysVar Tag

```
{ACTIVITY_RUN_TIME:ActivityName}
```

Parameters

ActivityName: The name of the activity whose run time you wish to return. If none is specified, it will return the start date of the current activity. This system variable can be formatted as a TimeSpan.

Activity Start Date



Returns

This system variable returns the date the specified activity started.

SysVar Tag

```
{ACTIVITY_START_DATE:ActivityName, Instance=InstanceNum, Days=NumDays}
```

Parameters

ActivityName (Required): The name of the activity whose start date you wish to return.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

Days: This modifier is used to calculate the due date of an activity via System Variable. The `Days` parameter is an integer value that specifies the number of days after the Activity Start Date to set the due date. For example, a `Days` value of "3" would set the due date to three days after the Activity Start Date.

This system variable can be formatted using the options available to a DateTime system variable.

Activity Start Date - Calculated

Returns

This system variable returns the date the specified activity is calculated to start, based on the current state of the process instance and the configuration of all the activities on which it is dependent.

SysVar Tag

```
{ACTIVITY_START_CALC:ActivityName, instance=InstanceNum}
```

Parameters

ActivityName (Required): The name of the activity whose calculated start date you wish to return.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

This system variable's results can be formatted as a DateTime system variable.

Activity Start Date - Configured

Returns

This system variable returns the date the specified activity is configured to start in the Timeline Definition.

SysVar Tag

```
{ACTIVITY_START_CONFIG:ActivityName, instance=InstanceNum}
```

Parameters

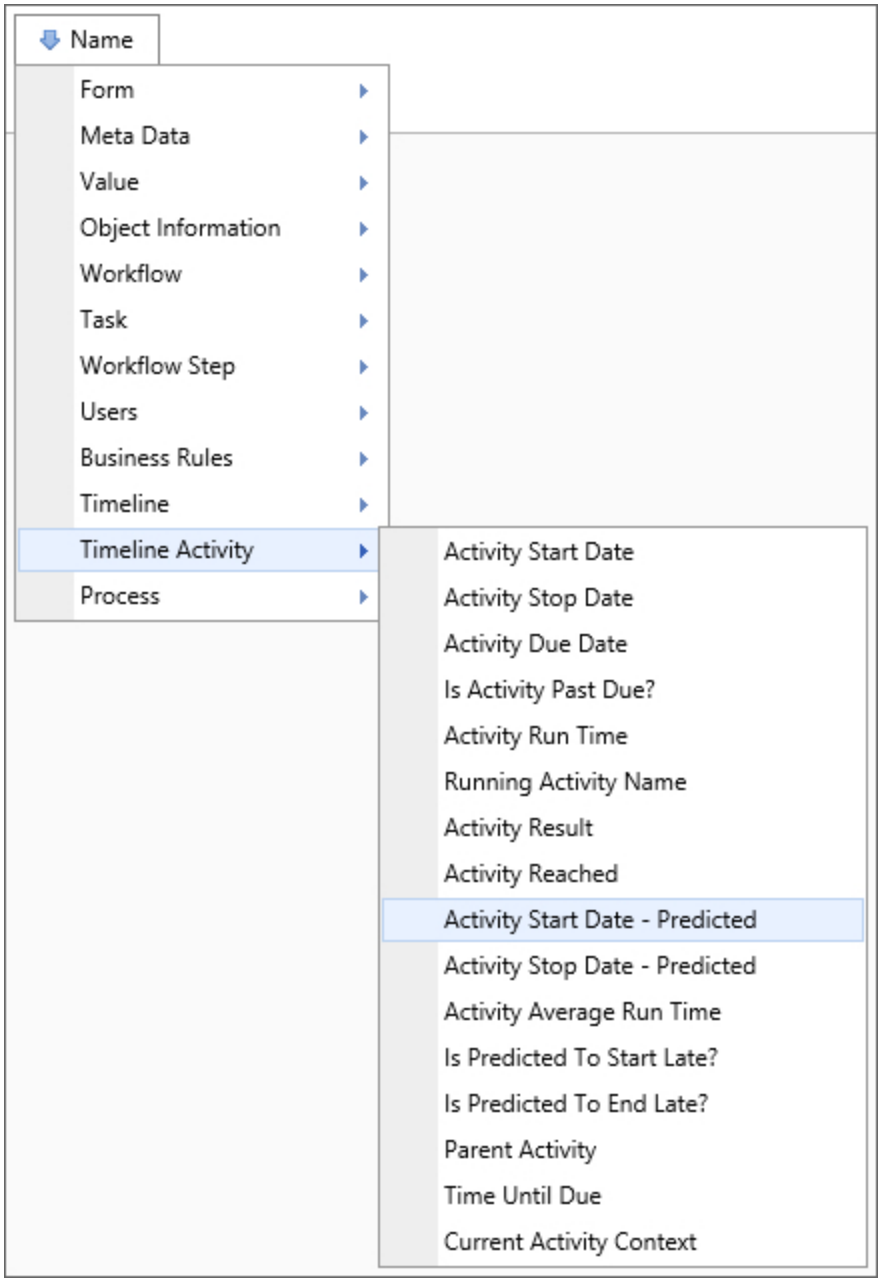
ActivityName (Required): The name of the activity whose configured start date you wish to return.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

This system variable's results can be formatted as a DateTime system variable.

Activity Start Date – Predicted



Returns

This system variable returns the date the specified activity is predicted to start, based on the aggregate past performance of the process.

SysVar Tag

```
{ACTIVITY_START_PREDICTED:ActivityName}
```

Parameters

ActivityName (Required): The name of the activity whose predicted start date you wish to return.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

The result of this system variable can be formatted as a DateTime system variable.

Activity Status

Returns

This system variable returns an activity's status. It will return either "Active", "Complete", or "Pending." The system variable will only return "Pending" if the activity isn't available or hasn't been run.

SysVar Tag

```
{ACTIVITY_STATUS:ActivityName, instance=InstanceNum}
```

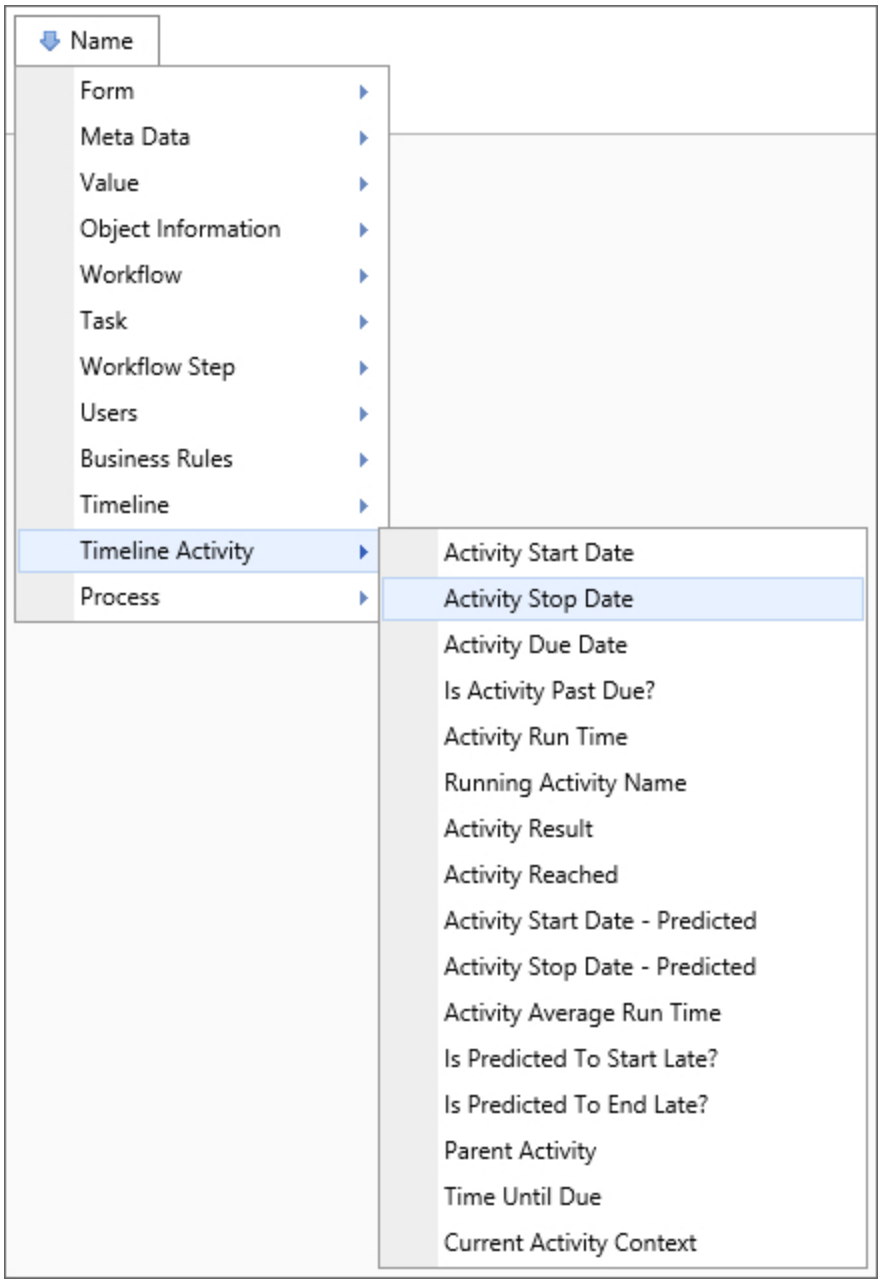
Parameters

ActivityName (Required): The name of the activity whose status you wish to return.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

Activity Stop Date



Returns

This system variable returns the date the specified activity stopped.

SysVar Tag

```
{ACTIVITY_STOP_DATE:ActivityName, instance=InstanceNum, SubTask=SubtaskName}
```

Parameters

ActivityName (Required): The name of the activity whose stop date you wish to return.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

SubTask: The subtask for which you'd like the result to be returned.

This system variable can be formatted according to the options available for date results.

Activity Stop Date - Calculated

Returns

This system variable returns the date the specified activity is calculated to stop, based on the current state of the process instance and the configuration of all the activities on which it is dependent.

SysVar Tag

```
{ACTIVITY_STOP_CALC:ActivityName, instance=InstanceNum}
```

Parameters

ActivityName (Required): The name of the activity whose calculated stop date you wish to return.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

The result of this system variable can be formatted as a DateTime system variable.

Activity Stop Date - Configured

Returns

This system variable returns the date the specified activity is configured to stop in the Timeline Definition.

SysVar Tag

```
{ACTIVITY_STOP_CONFIG:ActivityName, instance=InstanceNum}
```

Parameters

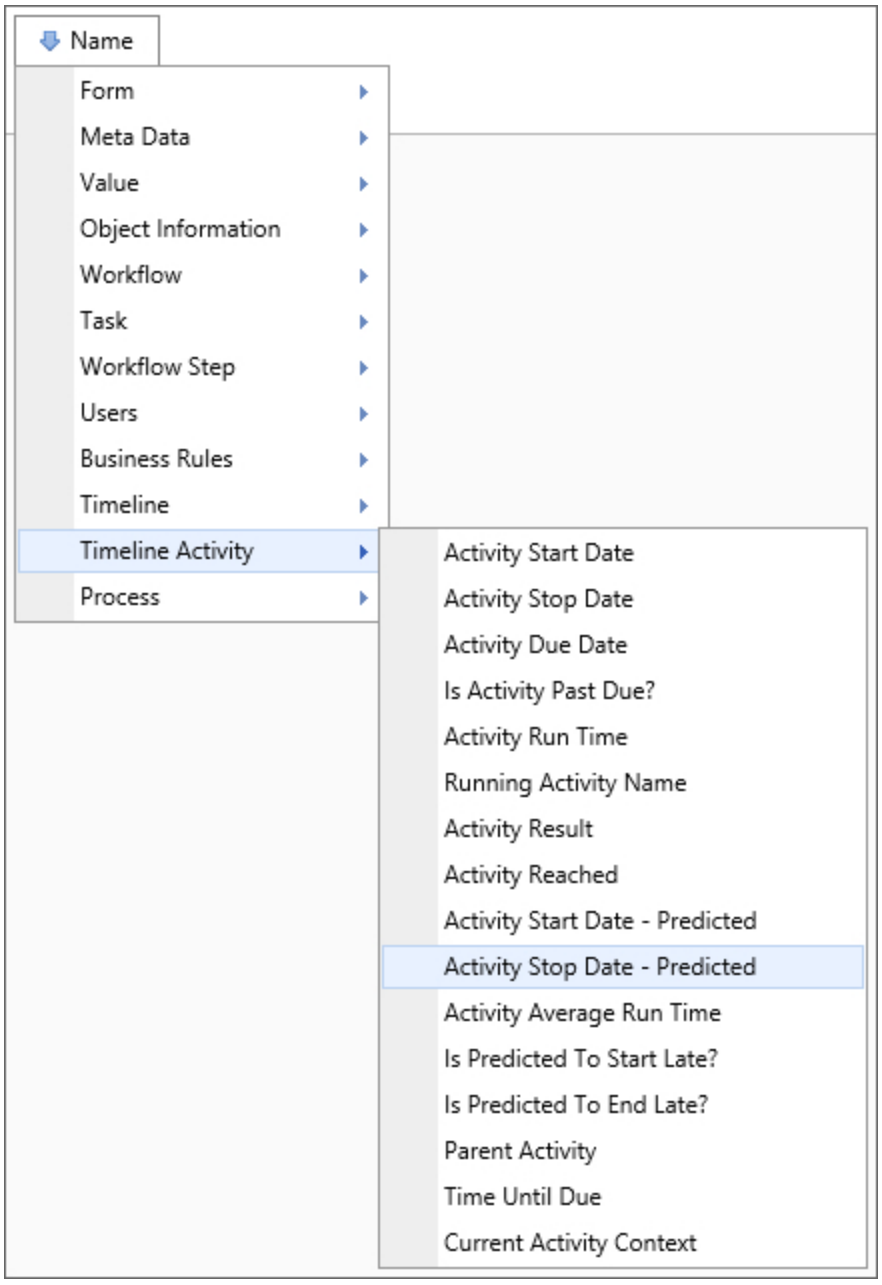
ActivityName (Required): The name of the activity whose configured stop date you wish to return.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

The result of this system variable can be formatted as a DateTime system variable.

Activity Stop Date - Predicted



Returns

This system variable returns the date the specified activity is predicted to stop, based on the aggregate past performance of the process.

SysVar Tag

```
{ACTIVITY_STOP_PREDICTED:ActivityName, instance=InstanceNum}
```

Parameters

ActivityName (Required): The name of the activity whose predicted stop date you wish to return.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

The result of this system variable can be formatted as a DateTime system variable.

Activity Termination Reason

Returns

This system variable returns the reason the specified activity terminated.

- Canceled
- Not Required
- Error
- Completed
- Notified
- Not Set
- Reassigned
- Stopped
- Timeout

If the activity hasn't yet terminated, the system variable will return "not set". The system variable won't return a value if the activity was rolled back, or is in an iteration segment that has looped.

SysVar Tag

```
{ACTIVITY_TERM_REASON:ActivityName, instance=InstanceNum}
```

Parameters

ActivityName: The name of the activity whose termination reason you wish to return. Should one not be specified, this system variable will return the start date of the current activity.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

Activity Time Until Due

Returns

This system variable returns the remaining amount of time until the activity is due for the current running activity.

SysVar Tag

```
{ACTIVITY_TIME_UNTIL_DUE}
```

Modifiers

This system variable can be formatted according to the standard TimeSpan formatting options.

Activity Top Running Name

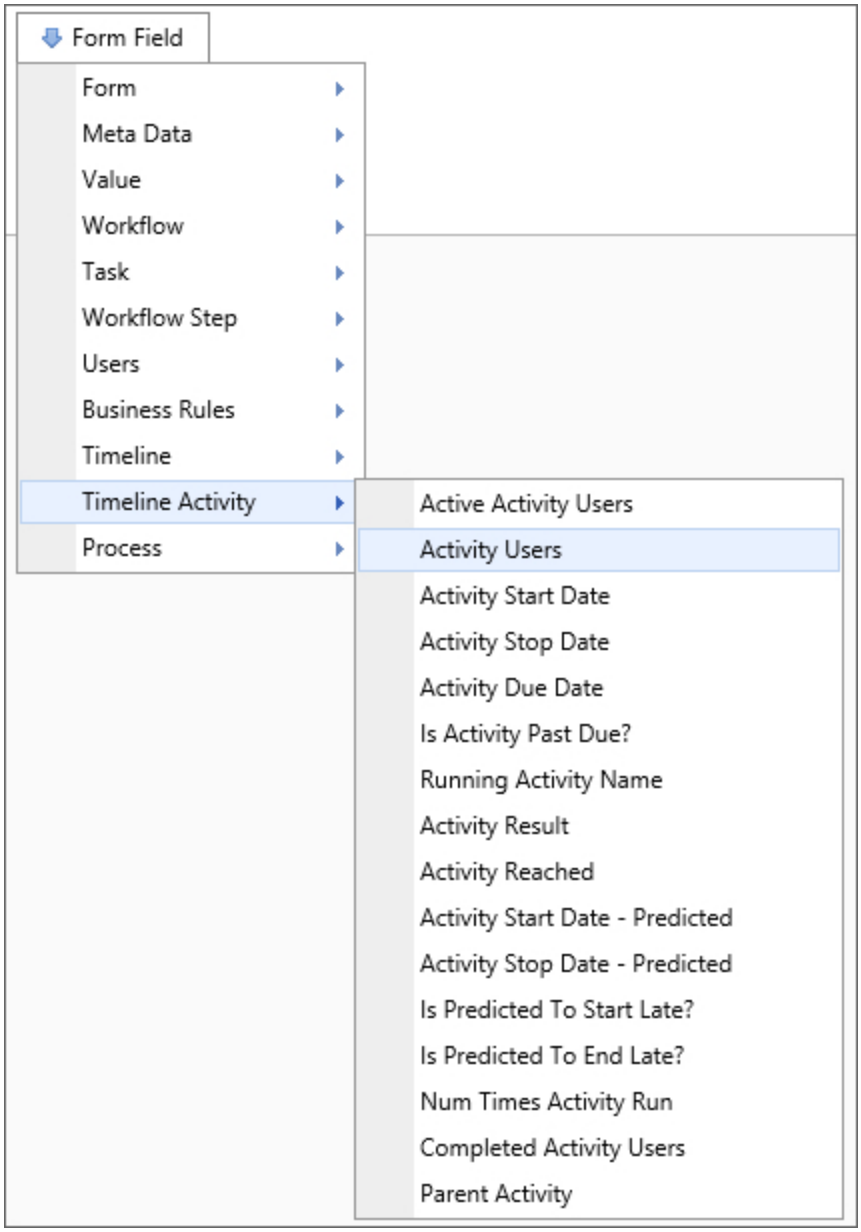
Returns

This system variable returns the specified activity's highest level parent activity.

SysVar Tag

```
{ACTIVITY_TOP_RUNNING_NAME}
```

Activity Users



Returns

This system variable returns a comma-separated list of all users involved in the specified activity. For Process Director v5.34 and higher, this system variable will return the email address of anonymous users who are assigned to an activity.

SysVar Tag

```
{ACTIVITY_USERS:ActivityName, Format=count|percentage, ShowDelegator=false, ShowDelegatee=true, Instance=InstanceNum}
```

Parameters

ActivityName (Required): The name of the activity whose users you wish to return.

Modifiers

Format: This system variable can be formatted to display either the number of users in this activity (using the `format=count` argument) or the percentage of users who are active in the activity (using the `format=percentage` argument).

ShowDelegator/ShowDelegatee: Will respectively display who delegated a task and whom the task is delegated to. By default, the delegatee is shown and the delegator is not.

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

Activity Users Complete

Returns

This system variable returns a list of users that have completed a specified activity. For Process Director v5.34 and higher, this system variable will return the email address of anonymous users who are assigned to an activity.

SysVar Tag

```
{ACTIVITY_ USERS_ COMPLETE:ActivityName,Result=ResultName, Instance=InstNum, format=comments, termreason=N}
```

Parameters

ActivityName (Required): The name of the activity from which the completed users need to be listed.

Modifiers

Result: The name of an activity result. If the Result modifier is included, the SysVar will return the list of users that selected the specified result.

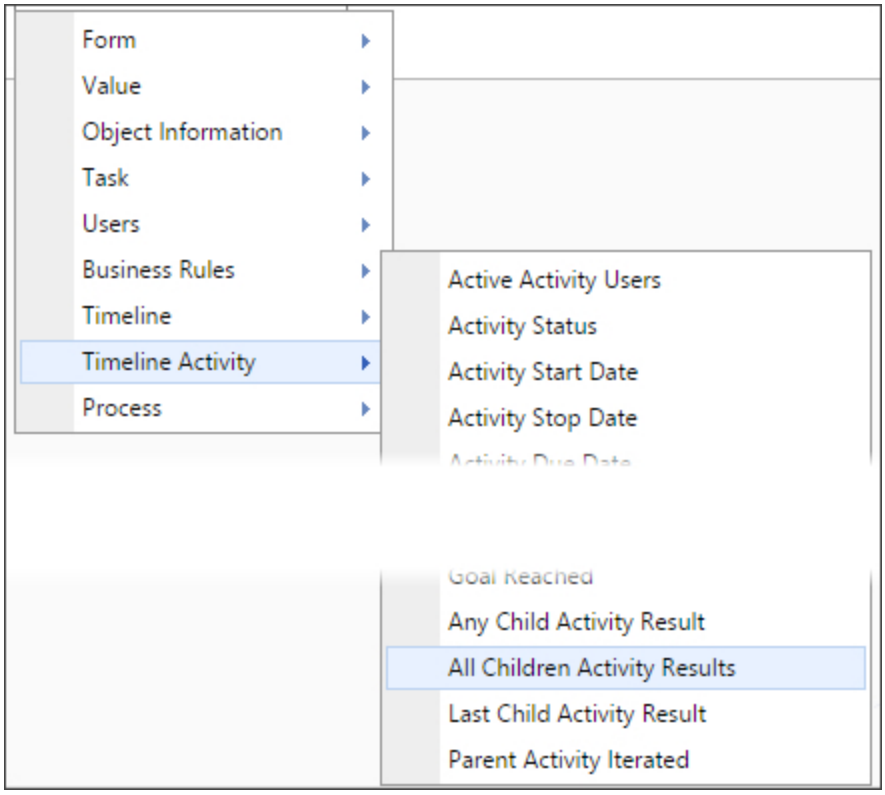
Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

Format: Using the `format=comments` Modifier will to return only the comments placed by the users. If there were multiple users that completed this activity it will show them comma separated. If you want to limit the users to only those with a particular result, use the Result Modifier.

Termreason: This optional numeric parameter enables you to specify the termination reason for the activity users. When you do so, the variable will return only the users whose activity was terminated for the reason specified. The following values are acceptable.

VALUE	DESCRIPTION
1	Normal termination
2	Timeout
3	Did not finish
4	Canceled
5	Reassigned
6	Not Needed
9	Break
10	Restart

All Children Activity Results



When a parent activity is configured to implement iteration, this SysVar is used to determine whether the results of all child activities in the iterative loop contain a user-specified value. The use of this SysVar is configured in the Condition Builder of the Process Director user interface.

SysVar Tag

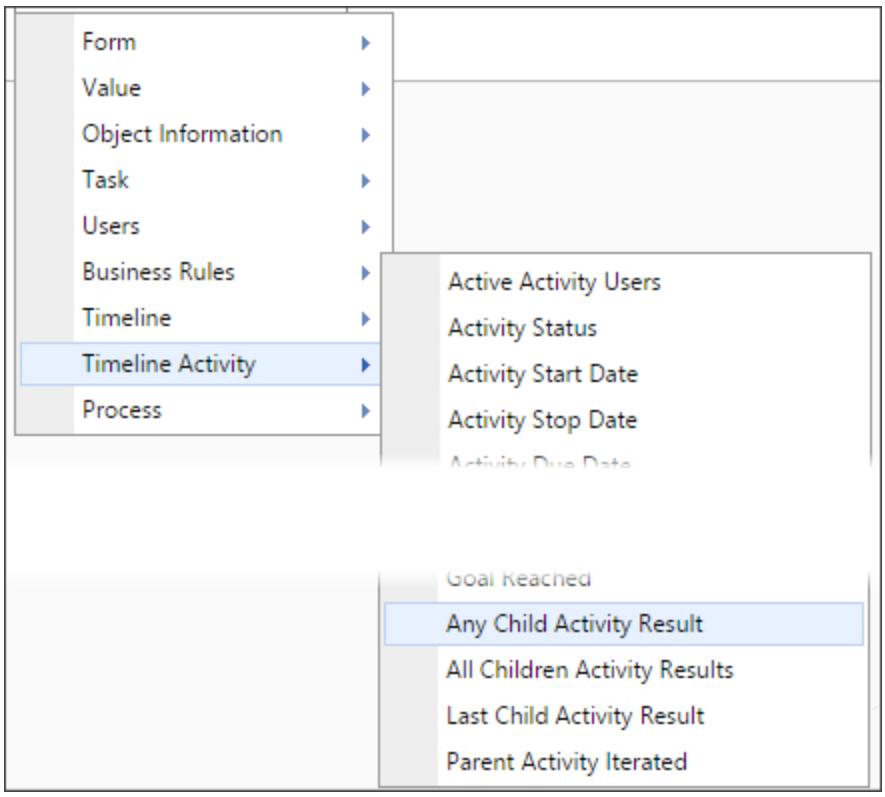
Unlike most other System Variables, this SysVar is solely configured for use in the Process Director user interface, and there is no current use case for using the actual SysVar tag with this variable.

`{ACTIVITY_RESULT_ALL_CHILDREN}`

Alternate Syntax

`{ALL_CHILDREN_ACTIVITY_RESULT}`

Any Child Activity Result



When a parent activity is configured to implement iteration, this SysVar is used to determine whether the result of any child activity in the iterative loop contains a user-specified value. The use of this SysVar is configured in the Condition Builder of the Process Director user interface.

SysVar Tag

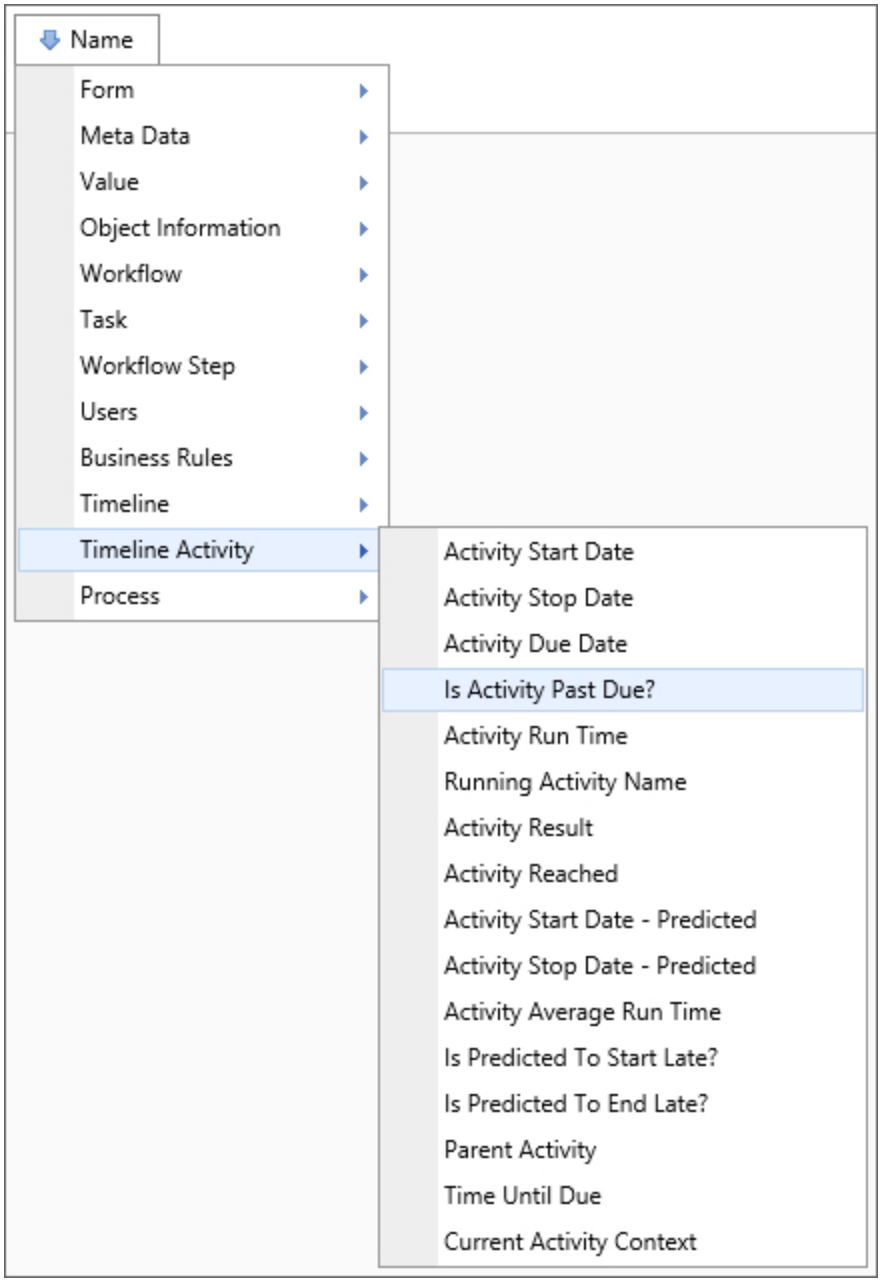
Unlike most other System Variables, this SysVar is solely configured for use in the Process Director user interface, and there is no current use case for using the actual SysVar tag with this variable.

`{ACTIVITY_RESULT_ANY_CHILD}`

Alternate Syntax

```
{ANY_CHILD_ACTIVITY_RESULT}
```

Is Activity Past Due?



Returns

This system variable returns a Boolean value based on whether the specified activity has passed its due date.

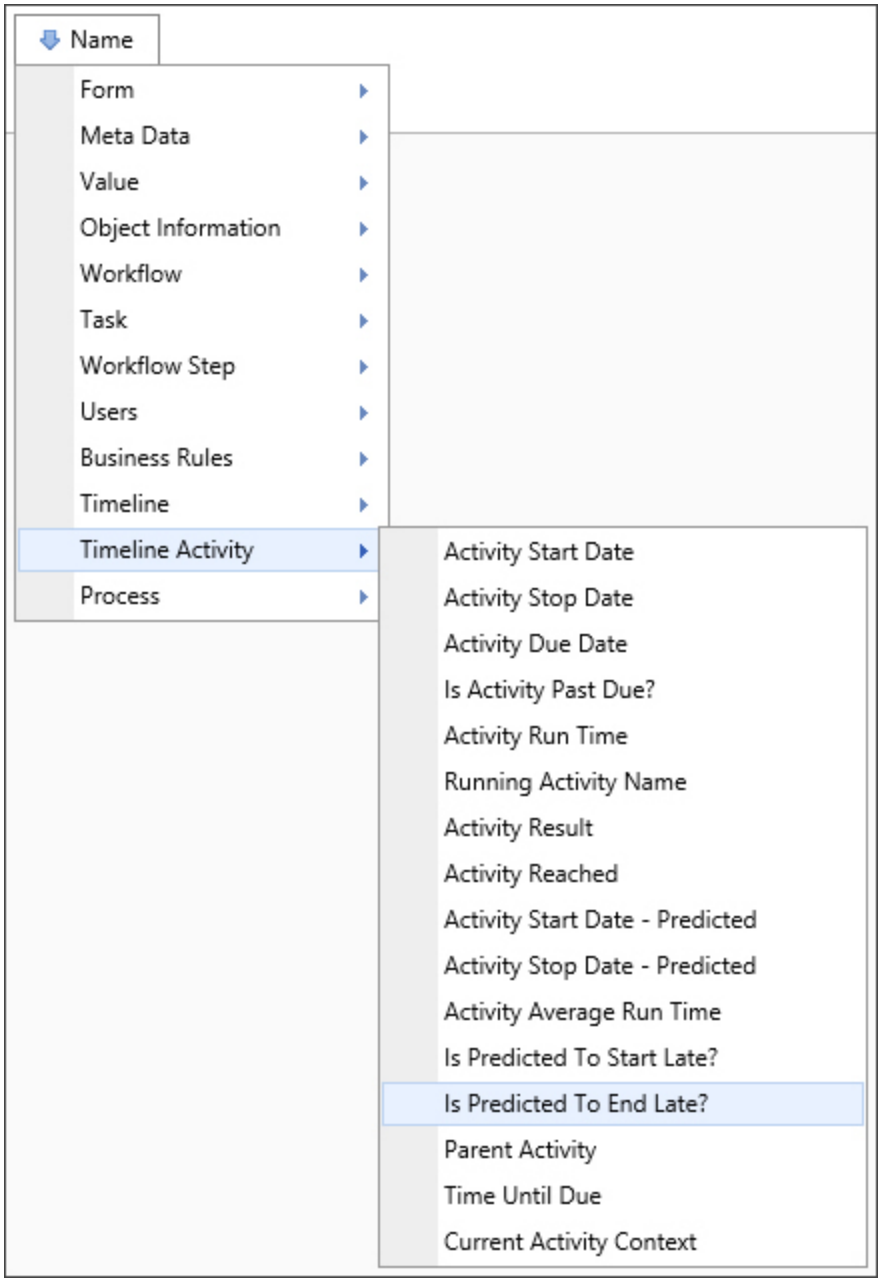
SysVar Tag

```
{ACTIVITY_PAST_DUE:ActivityName}
```

Parameters

ActivityName (Required): The name of the activity you wish to check.

Is Predicted To End Late?



Returns

This system variable returns a Boolean value based on whether the specified activity is predicted to end late.

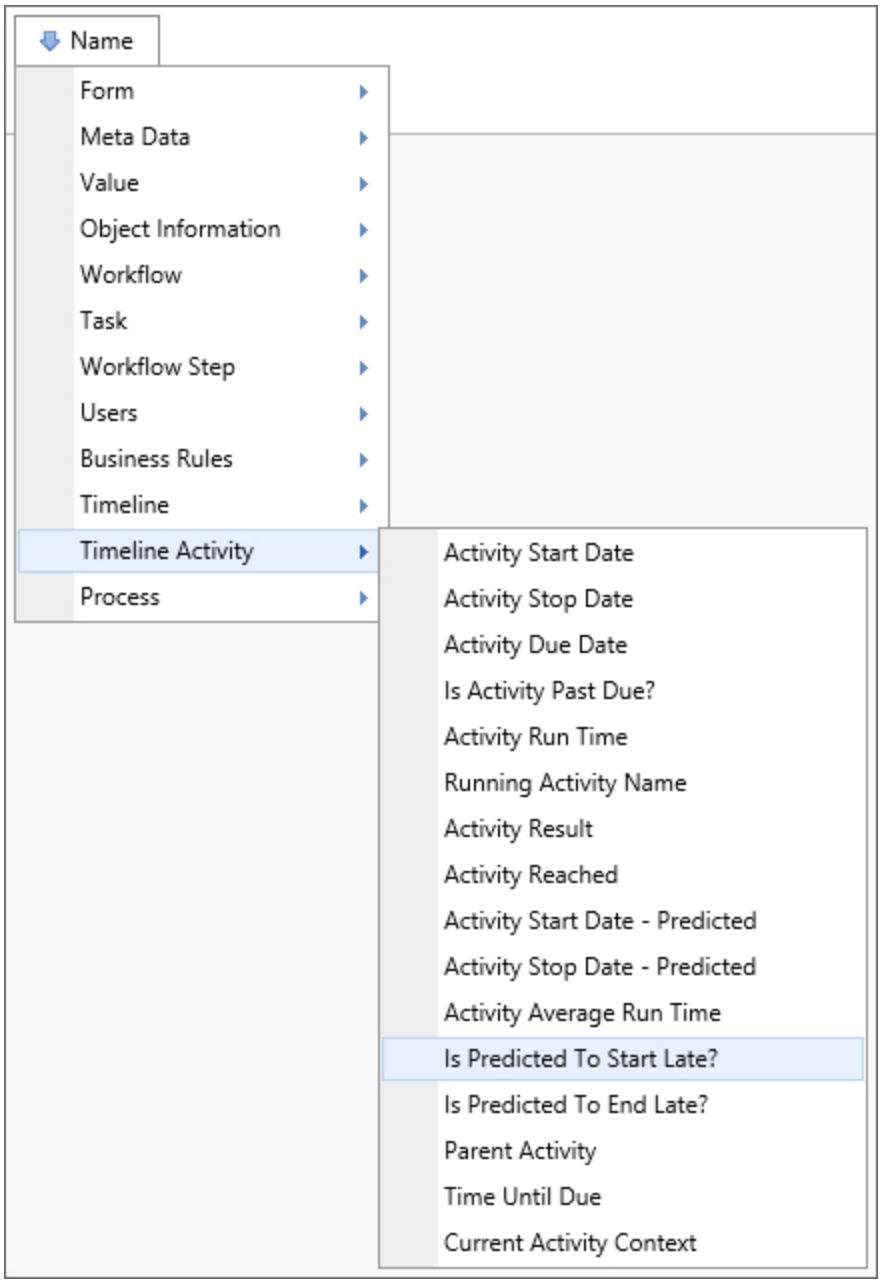
SysVar Tag

```
{ACTIVITY_PREDICT_END_LATE:ActivityName}
```

Parameters

ActivityName (Required): The name of the activity you wish to check.

Is Predicted To Start Late?



Returns

This system variable returns a Boolean value based on whether the specified activity is predicted to start late.

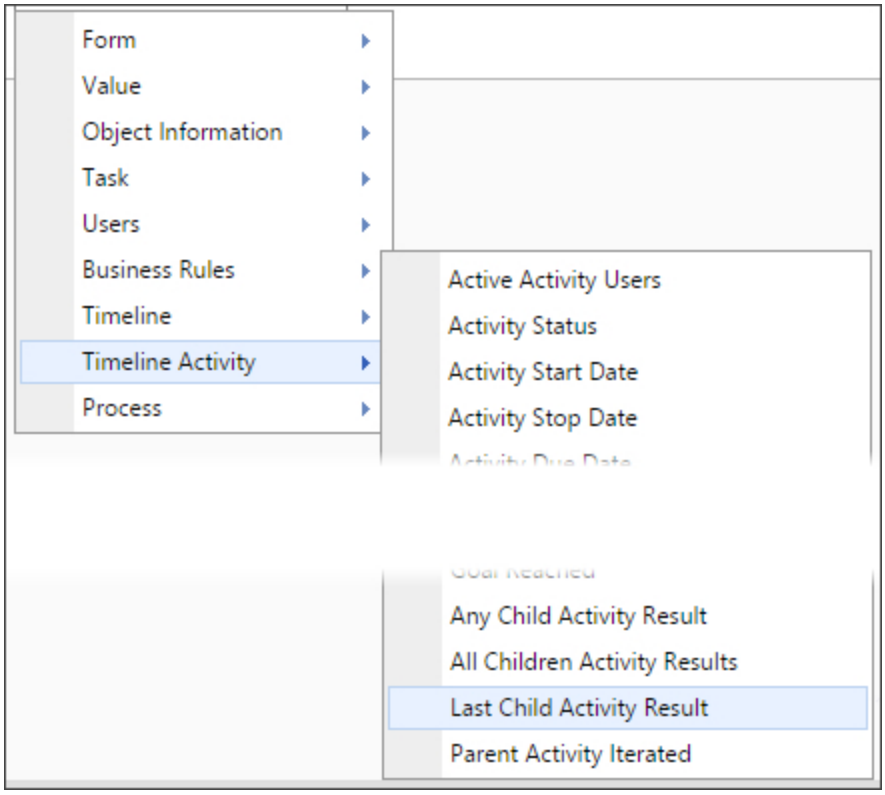
SysVar Tag

```
{ACTIVITY_PREDICT_START_LATE:ActivityName}
```

Parameters

ActivityName (Required): The name of the activity you wish to check.

Last Child Activity Result



Returns

When a parent activity is configured to implement iteration, this SysVar is used to determine whether the result of last completed child activity in the iterative loop contains a user-specified value. The use of this SysVar is configured in the Condition Builder of the Process Director user interface.

SysVar Tag

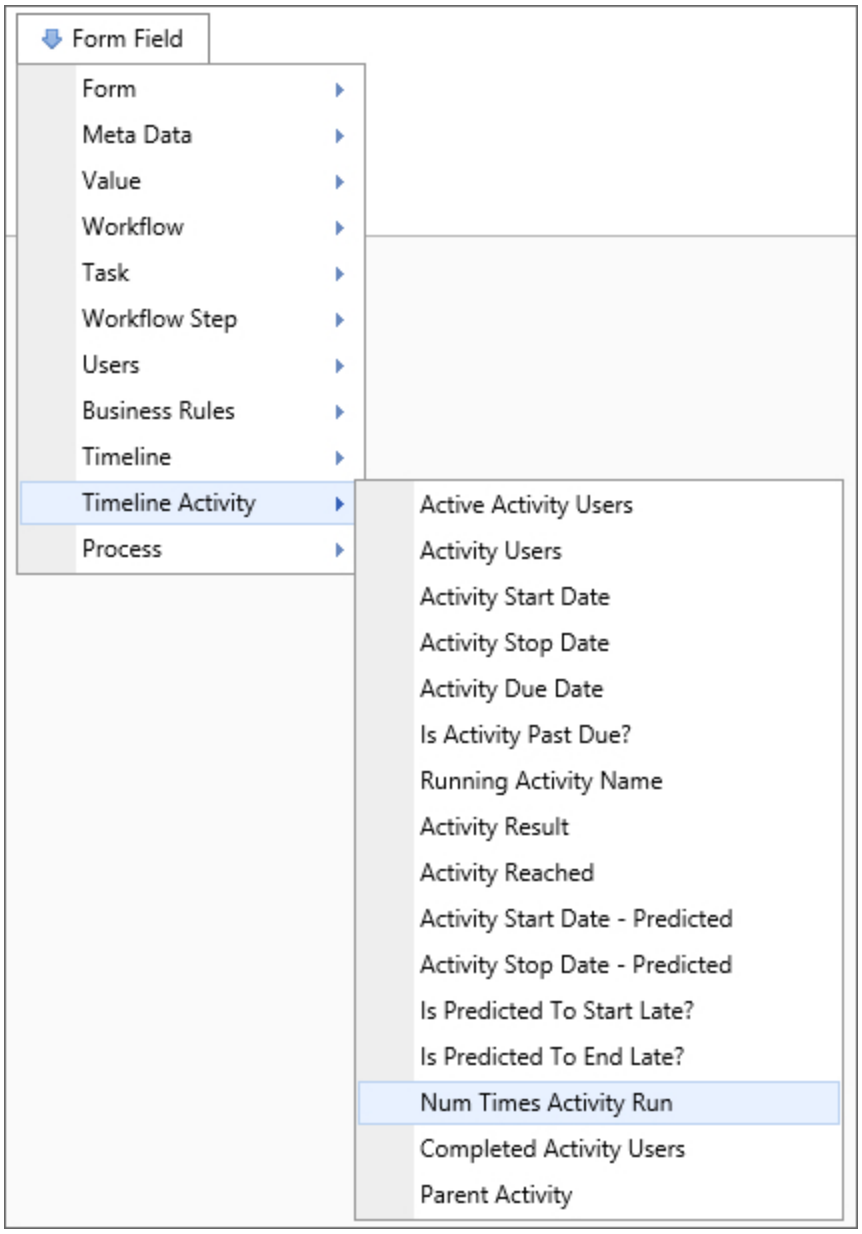
Unlike most other System Variables, this SysVar is solely configured for use in the Process Director user interface, and there is no current use case for using the actual SysVar tag with this variable.

```
{ACTIVITY_RESULT_LAST_CHILD, format=name}
```

Modifiers

format=name: This optional modifier will return the activity Name, instead of the activity Result.

Num Times Activity Run



Returns

This system variable returns the number of times a specified activity has been run in the current timeline instance. It won't count an activity that was skipped because of a rollback or a restart condition in an iteration parent.

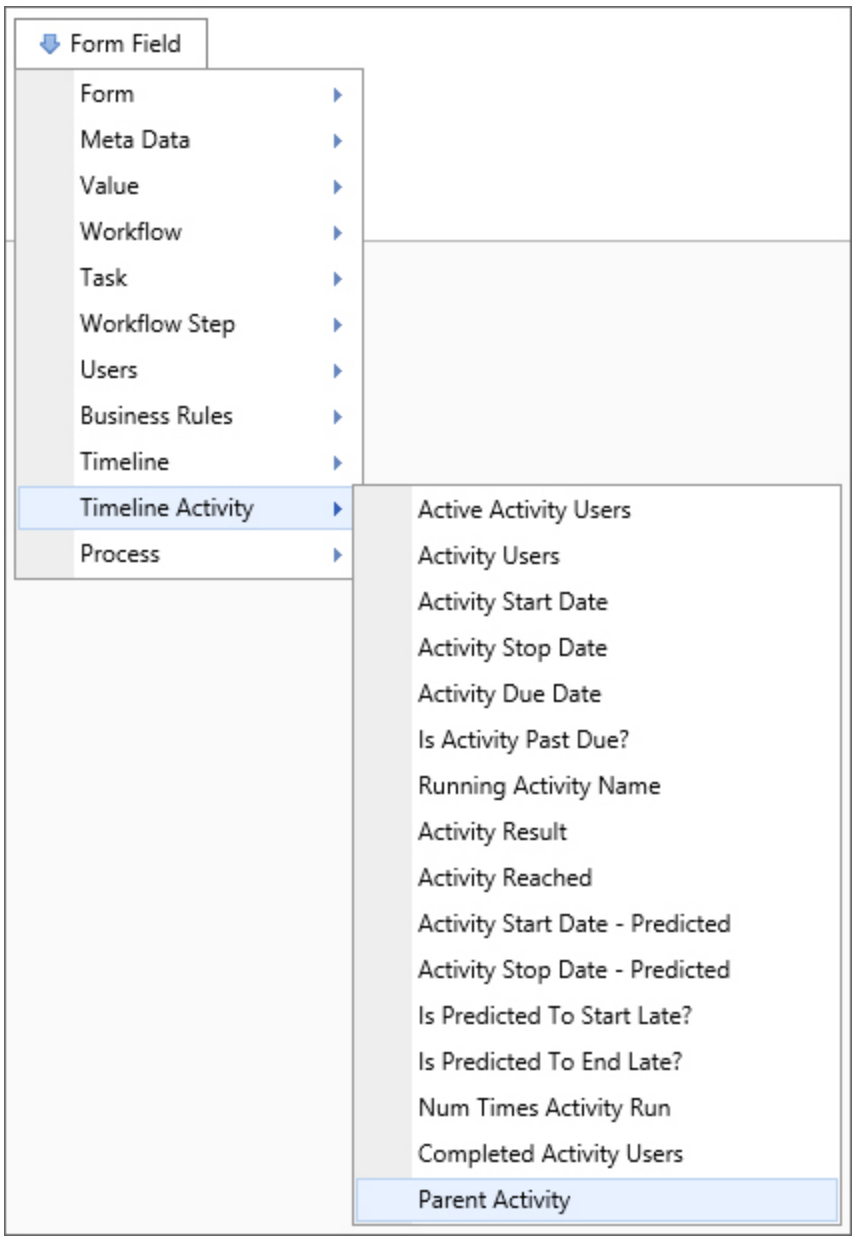
SysVar Tag

```
{ACTIVITY_NUM_TIMES_RUN:ActivityName}
```

Parameters

ActivityName (Required): The name of the activity you wish to check.

Parent Activity



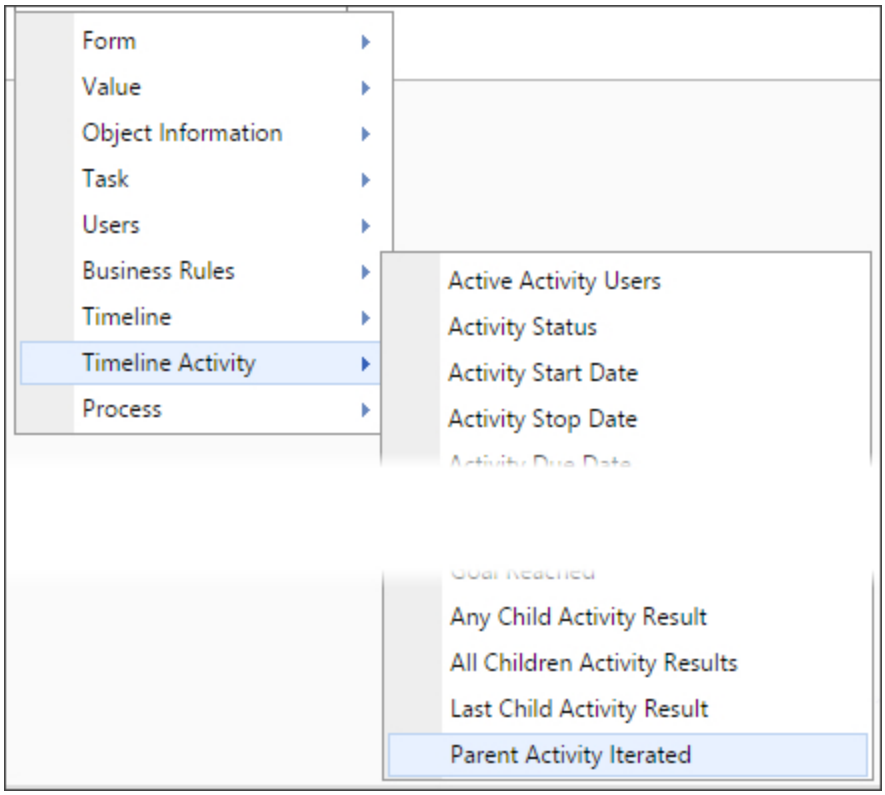
Returns

This system variable returns the parent activity of the current activity.

SysVar Tag

`{PARENT_ACTIVITY}`

Parent Activity Iterated



Returns

When a parent activity is configured to implement iteration, this SysVar will return True if an iteration of the Parent activity has been completed, and False if the first iteration hasn't been completed. The use of this SysVar is configured in the Condition Builder of the Process Director user interface.

SysVar Tag

`{PARENT_ITERATED}`

Parent Activity Restarted

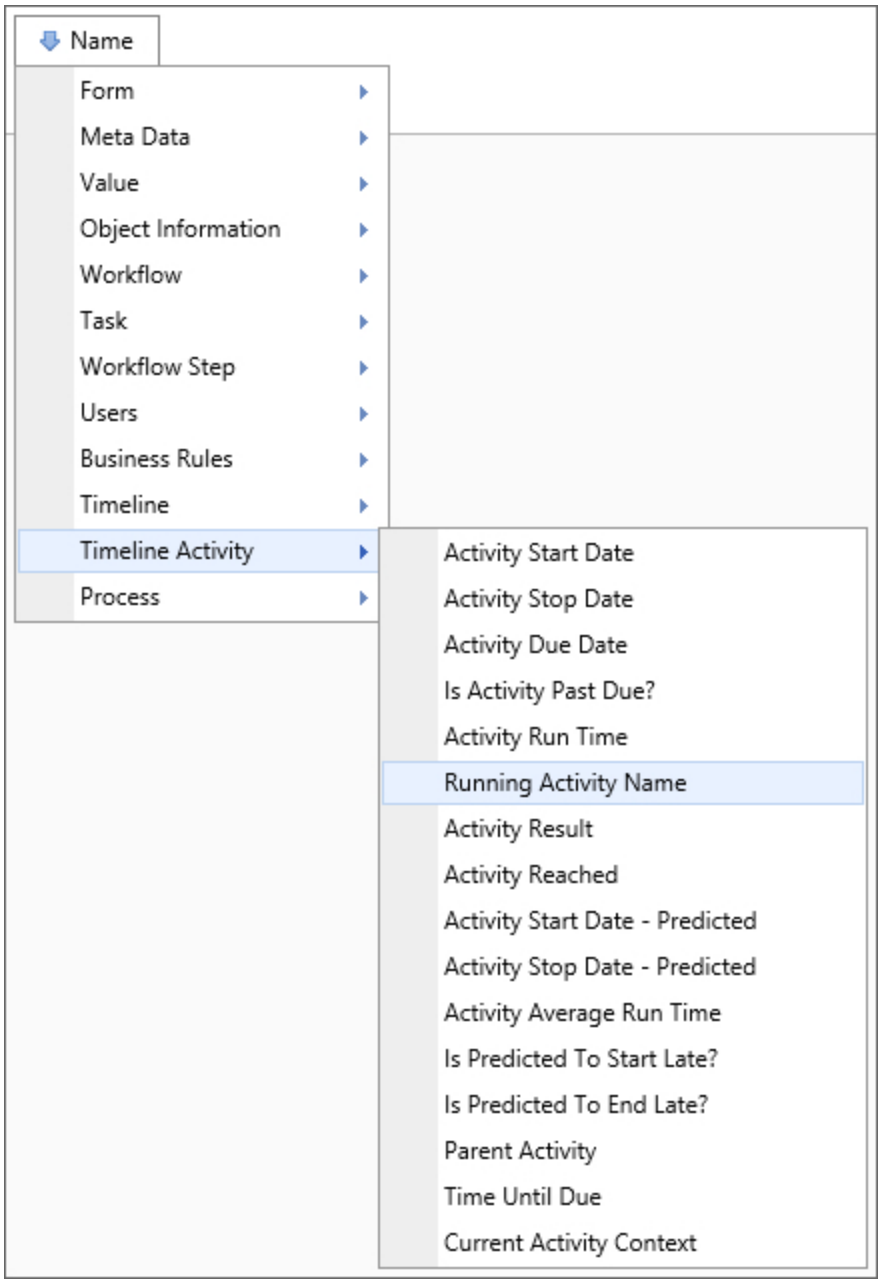
Returns

When a parent activity is configured to implement iteration, this SysVar will return True if an iteration of the Parent activity has been restarted, and False if not. Parent Activities are usually restarted when a child activity result meets a specified condition. For instance, if a participant in an approval process rejects a request, the result may be configured restart the approval process.

SysVar Tag

`{PARENT_RESTARTED}`

Running Activity Name



Returns

This system variable returns the name of the currently running activity.

SysVar Tag

```
{ACTIVITY_RUNNING_NAME, format=id}
```

Modifiers

format=id: This optional formatter can be set to "id" to return the Activity Instance ID, instead of the activity name. Setting this formatter to "child" will return the names of running child activities.

Optional Tags

The variable will also be correctly returned using the alternate syntax options below:

```
{RUNNING_                    ACT_                    NAME}
{RUNNING_ACTIVITY_NAME}
```

User System Variables

User system variables return the value of a user, user group, or comma-separated lists of users or groups. Controls like the User Picker also return a user or users, and system variables referencing a User Picker or Invite control also incorporate all of the User system variable attributes. So, any system variable option can be applied to Form system variables that return a user, e.g., `{FORM:UserPicker1, format=email}` will return the user's email address.

Options

System variables that return information about a user or users will have the following options:

- **AuthType:** returns the method by which the user authenticates. This returns a number, 0 through 4. The numbers represent the following authentication methods:
    - 0: BuiltIn
    - 1: Windows
    - 2: LDAP
    - 3: External
    - 4: SAML
- **ShowManager:** If set to 1 or True, this option returns the user's manager. Additionally, using this in conjunction with the "format" option can return additional information about the manager. For instance, the manager's email address for the current user can be returned using the following syntax: `{CURR_USER, ShowManager=1, format=email}`
- **ShowDelegate:** If the user has delegation turned on and this option is set to 1 or True, then this option returns the identify of the user's delegate. Otherwise, it will return no value. Additionally, using this in conjunction with the "format" option can return additional information about the delegate. For instance, the delegate's email address for the current user can be returned using the following syntax:
  `{CURR_USER, ShowDelegate=1, format=email}`

User system variables also have formatting options, which change the format of the data being returned. The format parameter can be set to the following:

Example

```
{CURR_USER, format=FormatOption}
```

Format Options

- **BusinessUnit:** Returns the Business Unit specified in Active Directory.
- **Culture:** Returns the user's culture.
- **Culture_String:** Returns the user's culture string.
- **Custom_Date:** Returns the custom date stored in the User's table entry.
- **Custom_Number:** Returns the custom number stored in the User's table entry.

- **Custom_String:** Returns the custom string stored in the User's table entry.
- **Display:** Returns the Display Name of the User.
- **Domain:** Returns the domain a user is in.
- **Email:** Returns the user's email address.
- **Groups:** Returns the list of groups of which the user is a member.
- **UID:** Returns the User's UID in GUID format.
- **ID:** Returns the ID of an object or user.
- **LAST_LOGIN:** Returns the data and time of the specified user's last login.
- **LegalEntity:** Returns the Legal Entity specified in Active Directory.
- **Name:** Returns the user's name.
- **NUM_LOGINS:** Returns the number of times the given user has logged in.
- **Picture:** Returns the image of a user.
- **Signature:** Returns the image of the user's signature.
- **Userid:** Returns the user's User ID.

Example

```
{CURR_USER, format=Email}
```

When comparing User system variables, it is important to make sure that you are comparing the same kinds of values. Ensure that the format options for all the User system variables in a comparison are the same, or else you may end up with an unexpected result.

Active Directory Fields

If users are created on Process Director through synchronization with active directory, certain Active Directory data can be received by Process Director using the following formatting options:

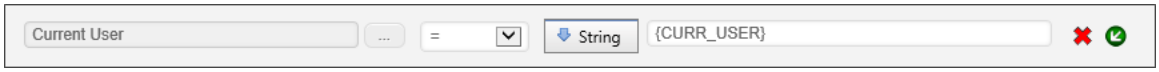
- **Phone:** returns the user's phone number
- **Office:** returns the value of the user's Office active directory field
- **Title:** returns the user's title
- **Department:** returns the name of the user's department
- **Description:** returns the Active Directory description of the User
- **Company:** returns the name of the company to which the user belongs

Example

```
{CURR_USER, format=Phone}
```

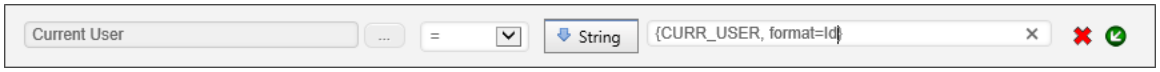
Return Values

User system variables return different default values based on how they are called. In all cases, the system variable will return a string value, but selecting a user variable from the user interface will return the string value of the user ID, while using the "curly brackets" syntax will return the formatted Name property string of the user. For example, let's assume a user named Diana Stuart is the current user, and the following condition exists in the Condition Builder:



In this case, the Current User system variable has been selected from the dropdown menu on the left side of the condition, while the string `{CURR_USER}` has been entered on the right side of the condition. With this configuration, the condition will never return true, because the condition will return a GUID string, e.g., "e74bebcc-c8b8-4567-9e27-925c0577c2c4" for the left side, and "Diana Stuart" for the right side. As such, the two values—even though they are attributes of the same user—will never match, because they aren't the same string values.

So, to match two user variables, you should ensure, if possible, that both variables are selected from the user interface. If not, you can format the "curly brackets" side of the comparison with the ID formatter, as described below, which will return the ID instead of the Name of the user.



Usually, this issue arises when you are trying to compare a User form field with the current user. In that case, the form field can always be selected from the left side of the Condition Builder, while the Current User can be selected from the right side.

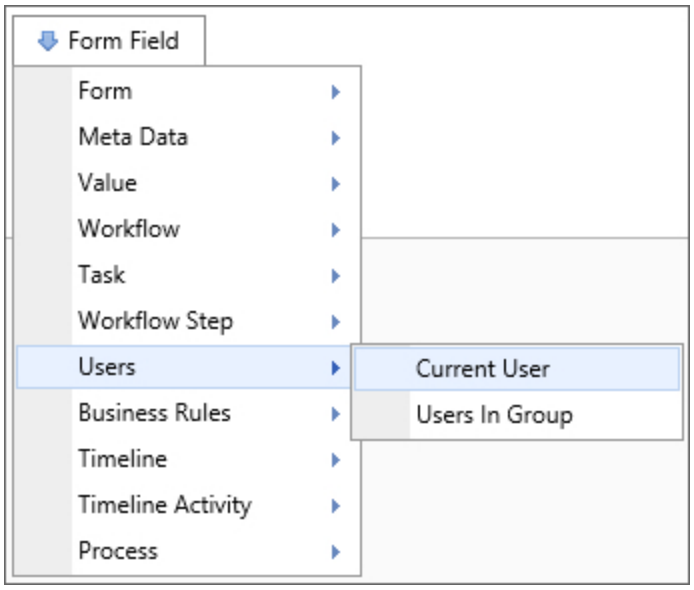
Now, both values have been selected from the UI, hence, both will return the GUID string for a proper comparison.

In general, If you have a form field that is meant to represent the identity of a user, then the underlying control should always be a User Picker.

System Variables

The following user system variables are available in Process Director.

Current User



Returns

This system variable returns the User ID or Formatted User Name, depending on the method used to call the variable, as described in the Return Values section, above.

Do not use this system variable in email templates. The correct system variable to use to return the task assignee in an email template is the Email User system variable.

SysVar Tag

```
{CURR_USER}
```

Modifiers

This system variable can be formatted according to the options available to User system variables.

Alternate Syntax

```
{CURRENT_USER}
```

Current User Groups

Returns

This system variable returns a comma-separated list of the groups the current user belongs to.

SysVar Tag

```
{CURR_USER_GROUPS, format=id, ShowDelegate=true}
```

Modifiers

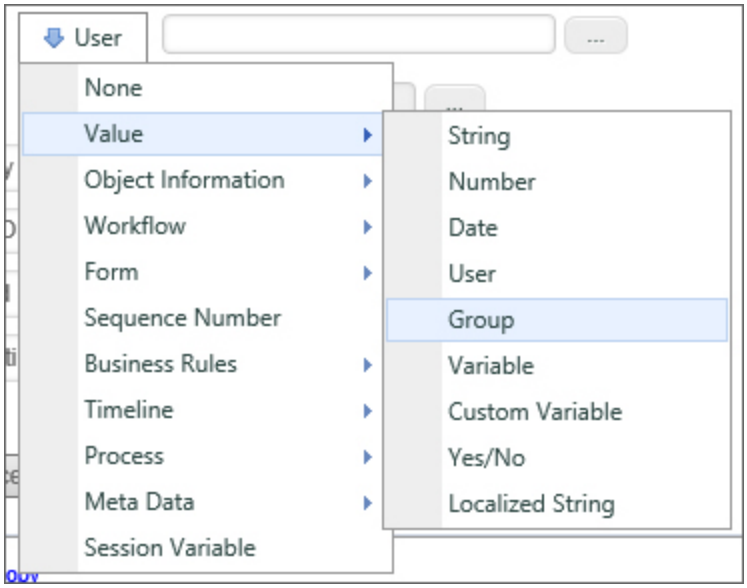
format=id: This optional modifier will return the group ID rather than the group name.

ShowDelegate=true: This optional modifier will return for the user to whom the current user is delegating, rather than the current user.

Optional Tags

`{CURRENT_USER_GROUPS}`

Group



Returns

This system variable allows the user to specify a group to be used in comparisons. Information about a group can be gathered via SysVar tags by referencing a group picker form field.

SysVar Tag

`{FORM:someGroupPicker}`

Parameters

someGroupPicker (required): The name of a Group Picker on a form.

Modifiers

The result of a group picker reference can be formatted according to the options available to form field system variables.

Group Users

Returns

This system variable returns a comma-separated list of users that belong to a specified group. If no optional formatting parameters are used, the default return format will be the actual name of the user.

SysVar Tags

Single Group

```
{GROUP_USERS:GroupName|GID, format=userid|guid|id|name}
```

Multiple Groups

```
{GROUP_  USERS,      GROUPS="GroupName1,Groupname2",      format=ID|UID|UserID|Name,
Operator=AND|OR}
```

Examples:

Single Group

```
{GROUP_USERS:admin, format=userid}
```

Multiple Groups

```
{GROUP_USERS, GROUPS="Finance,admin", Operator=OR}
```

Parameters

GroupName (Required): The group name for the group from which the users should be returned.

OR

GID (Required): The Group ID for the group from which the users should be returned.

Modifiers

Format: Specifies the type of return value to be received. Possible options are:

- **ID:** The unique identifier for the users in the group.
- **UID:** The unique identified for the users in the group.
- **userid:** The Process Director usernames for the users in the group.
- **name:** The actual names of the users in the group.

Groups: To return multiple groups, use a comma-separate list of group names for this Modifier.

Operator: Specifies how to return users from multiple groups.

- **AND:** Will return *only* users who are members of *all* groups listed in the Groups modifier.
- **OR:** Will return *all* members of the groups listed in the Groups modifier.

IP Address

Returns

This system variable returns the current user's IP Address.

SysVar Tag

```
{IP_ADDRESS}
```

Notify Users

Returns

This variable returns a list of all users who will receive a notification for a specified Timeline Activity, regardless of the type of notification they'll receive.

SysVar Tag

```
{NOTIFY_USERS:ActivityName, format=FormatType}
```

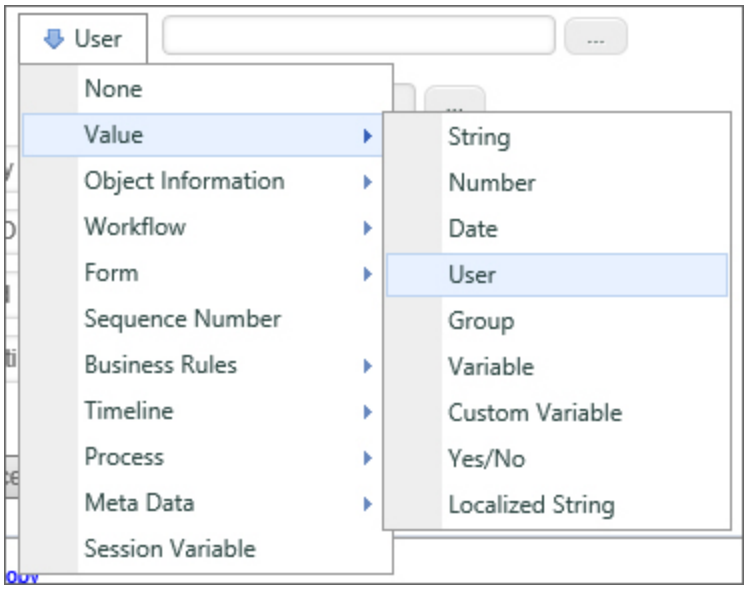
Parameters

ActivityName (Required): The name of the activity for which you wish to return the list of users who will receive a notification.

Modifiers

The result of this System Variable can be formatted according to the options available to User system variables.

User



Returns

This option allows the user to specify a user to be used for comparisons. This is technically not a system variable, but information about a user can be gathered via SysVar tags by referencing a user picker. This system variable returns the User ID or Formatted User Name, depending on the method used to call the variable, as described in the Return Values section, above.

SysVar Tag

```
{FORM:someUserPicker}
```

Parameters

someUserPicker (Required): The name of the user picker whose values you wish to return.

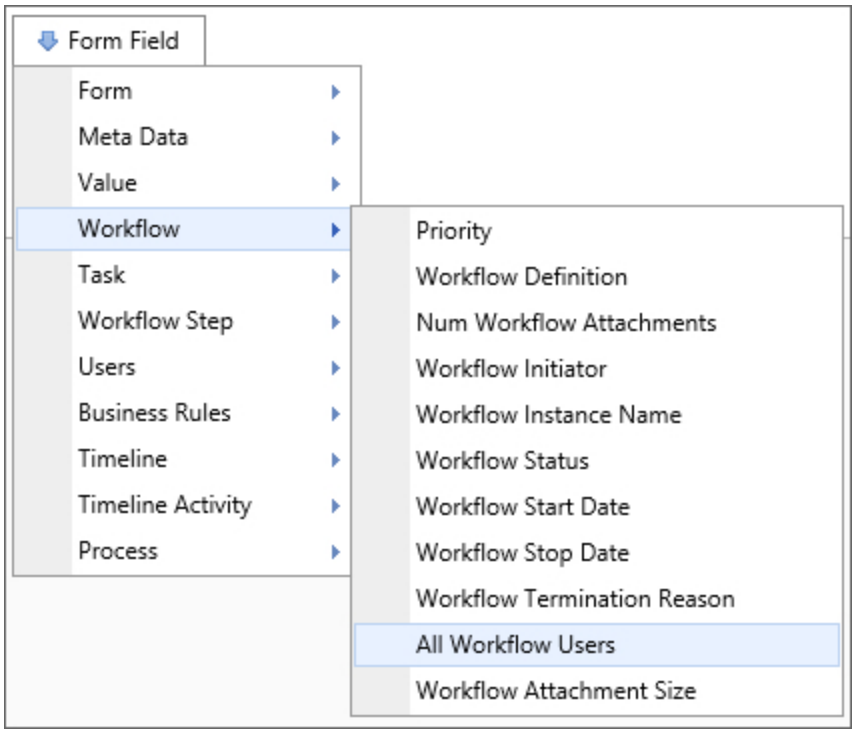
Modifiers

The result of this System Variable can be formatted according to the options available to form field system variables.

Workflow System Variables

The Workflow object is the legacy process model used in early versions of Process Director. BP Logix recommends the use of the Process Timeline object, and not the Workflow object. The Workflow object remains in the product for backwards compatibility, but doesn't receive any new functionality updates, other than required bug fixes. No new features have been added to this object since Process Director v4.5. All new process-based functionality is solely added to the Process Timeline.

All Workflow Users



Returns

This system variable returns a comma-separated list of all users involved in a Workflow.

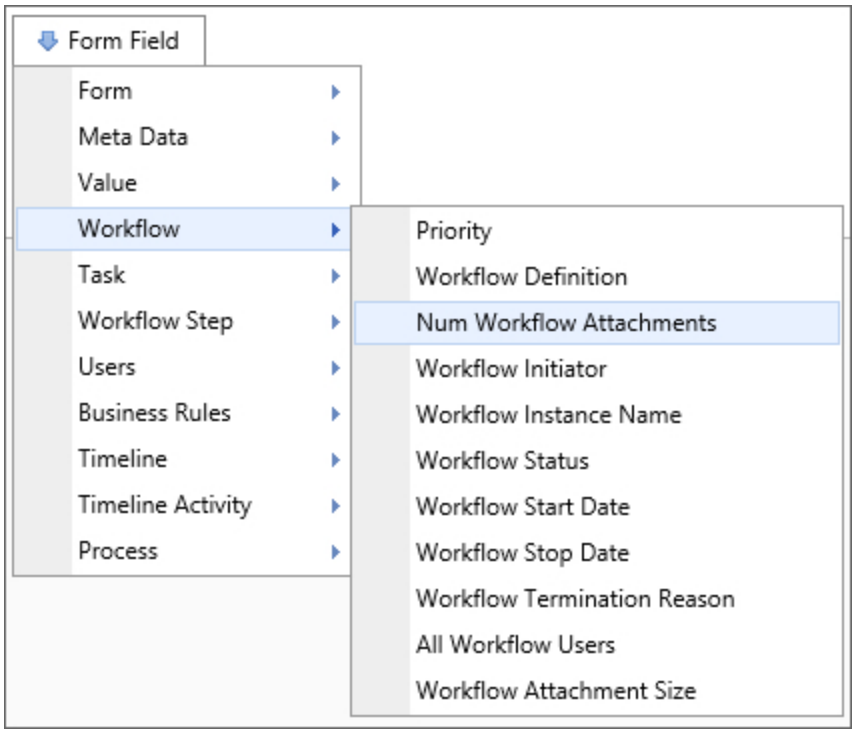
SysVar Tag

`{WORKFLOW_ALL_USERS}`

Modifiers

This system variable's result can be formatted using the Modifiers that are generally available for User system variables.

Number of Workflow Attachments



Returns

The Num Workflow Attachments variable returns the number of objects attached to a Workflow instance.

SysVar Tag

```
{WORKFLOW_ATTACHMENT_NUM, ObjectType=Document|Form,
CSStatus=Pending|NotPending|Failed|Done|PendingOrFailed, GroupName=Group,
UploadStatus=PENDING|NOT_PENDING}
```

Modifiers

ObjectType: This system variable's results can be restricted by object type using the ObjectType parameter. Acceptable values are DOCUMENT and FORM.

CSStatus: The CSStatus option is available with Concept Share integration. When a value is specified, the system variable will return only the number of documents matching that stated. If "Failed" is selected, this system variable will return the number of documents that failed to upload to Concept Share.

GroupName: The parameter limits this system variable such that it only returns the number of attachments in the specified group.

UploadStatus: This parameter will return the number of attachments that meet the specified value.

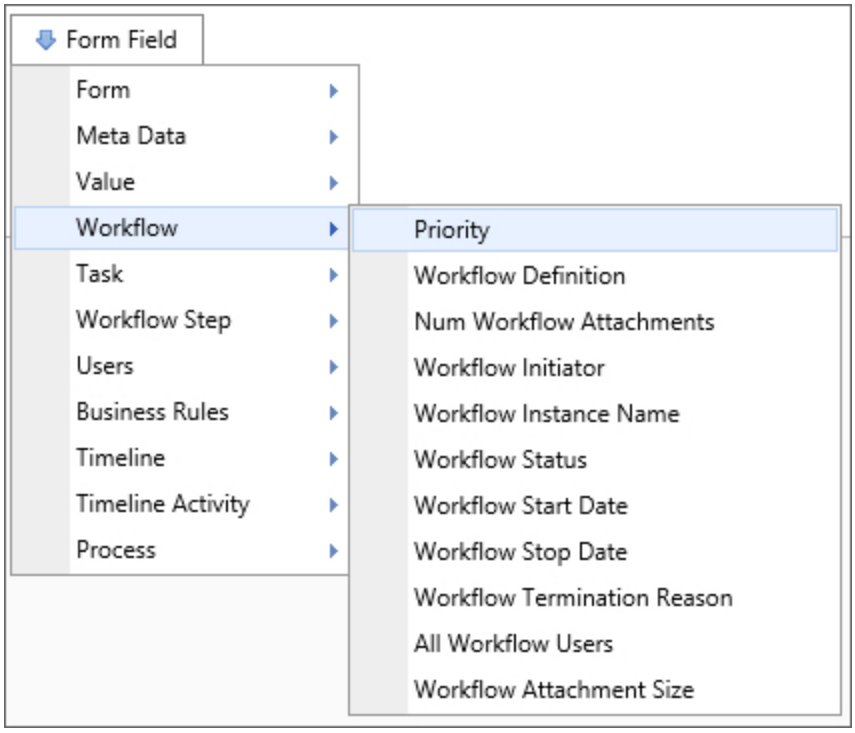
Alternate Syntax

```
{WF_ATTACHMENT_NUM}
{WORKFLOW_REF_NUM}
{WORKFLOW_REF_NUM}
```

{WORKFLOW_REFERENCE_NUM}

{WF_OBJECT_NUM}

Priority



Returns

This system variable returns a Workflow's priority.

SysVar Tag

{WORKFLOW_PRIORITY}

Alternate Syntax

{WORKFLOW_REF_GROUP}

Workflow Attachment Group

Returns

This system variable returns the groupname used for this Workflow attachment.

SysVar Tag

{WORKFLOW_ATTACHMENT_GROUP}

Workflow Attachment Size

Returns

The system variable returns the cumulative size of all documents attached to the Workflow.

SysVar Tag

```
{WORKFLOW_ATTACHMENT_SIZE, groupname=GroupName}
```

Modifiers

groupname: Can be used to have this system variable return only the cumulative size of documents in the specified group.

Alternate Syntax

```
{WF_ATTACHMENT_SIZE}
{WORKFLOW_REFERENCE_SIZE}
{WF_OBJECTS_SIZE}
{WF_REFERENCE_SIZE}
```

Workflow Attachments

Returns

This system variable returns a comma-separated list of the names of objects currently attached to this Workflow.

SysVar Tag

```
{WORKFLOW_ATTACHMENTS, GroupName=GroupName, ShowName=1,ShowDesc=0, ShowID=0}
```

Modifiers

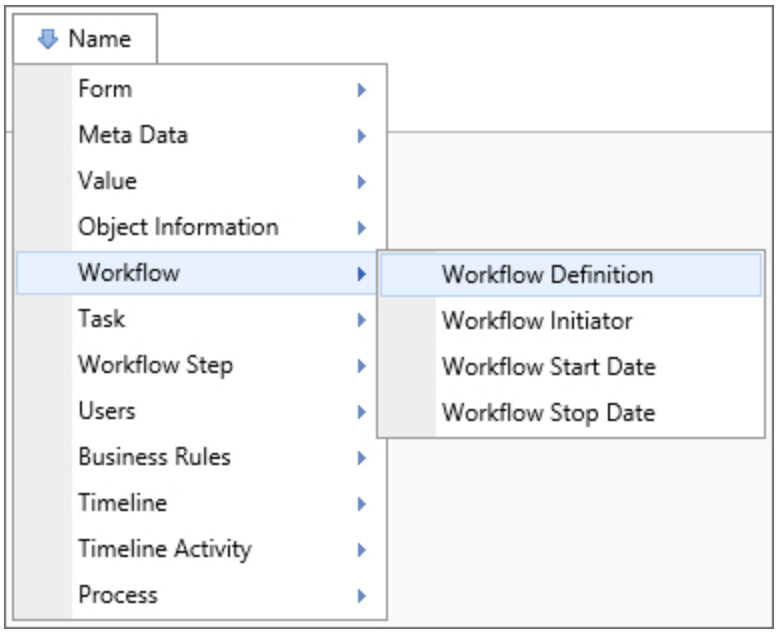
GroupName: Limits the results to only the attachments in the specified group.

ShowName: The option is set to 1 by default. When set to 1, it will display the name of the attachment.

ShowDesc: The option is set to 0 by default. If set to 1, it will display the attachment's description.

ShowID: The option is set to 0 by default. If set to 1, it will display the object's internal ID. If each is set to 1, each attachment will be returned in the format "name : description, name : description, name : description"...

Workflow Definition



Returns

This system variable returns the name of the current Workflow definition.

SysVar Tag

```
{WORKFLOW_DEF_NAME}
```

Workflow Definition Name

Returns

This system variable returns the name of the Workflow definition of the current instance.

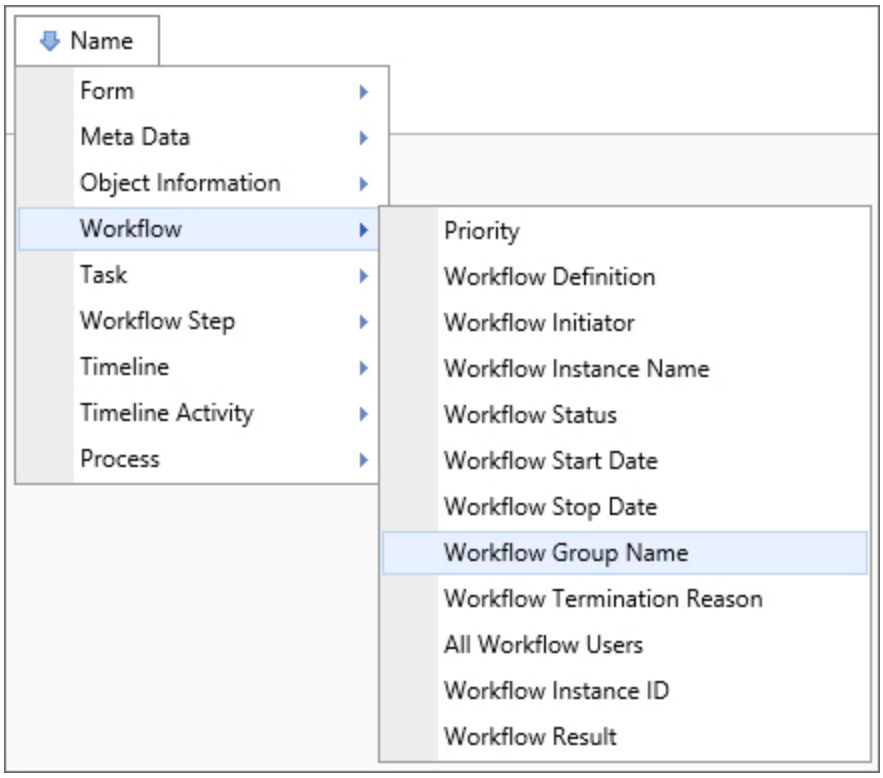
SysVar Tag

```
{WORKFLOW_DEF_NAME}
```

Alternate Syntax

```
{WF_DEF_NAME}
```

Workflow Group Name



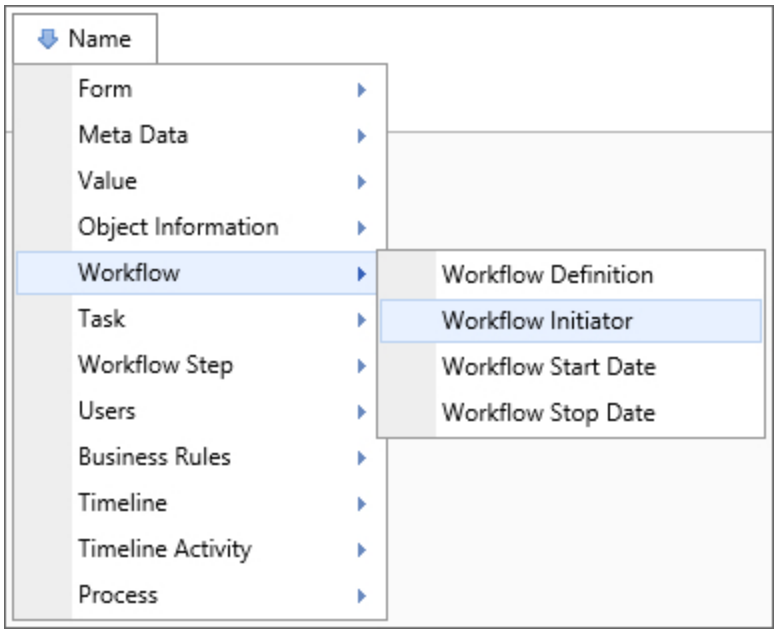
Returns

This system variable returns the group name used for this Workflow.

SysVar Tag

`{WORKFLOW_GROUP_NAME}`

Workflow Initiator



Returns

This system variable returns information about the user who started the current Workflow instance.

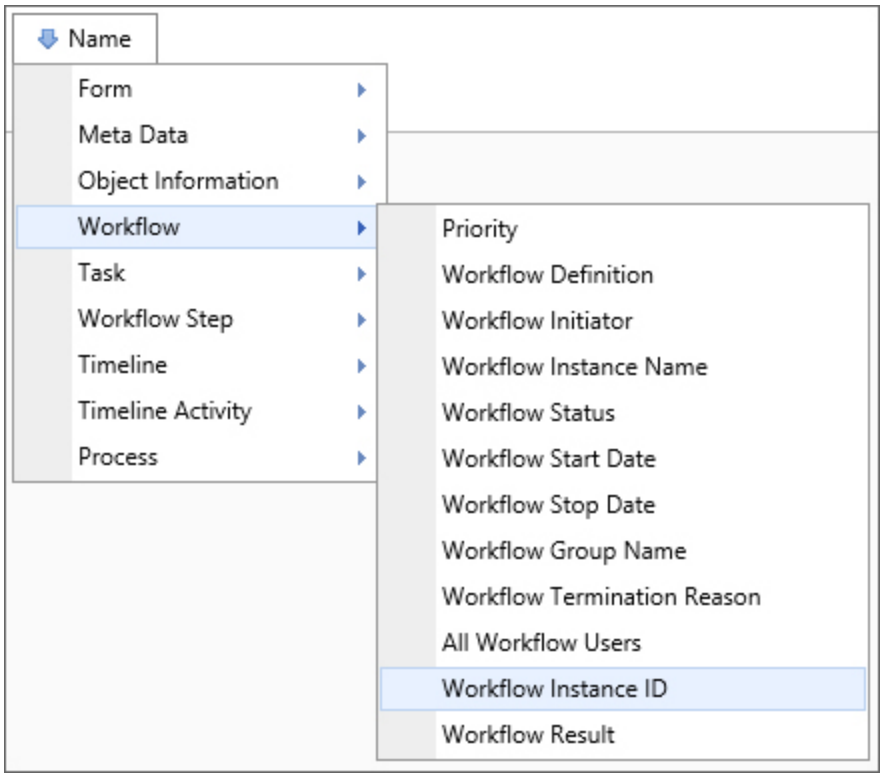
SysVar Tag

```
{WORKFLOW_INITIATOR}
```

Modifiers

This system variable can be formatted according to the options available to User system variables.

Workflow Instance ID



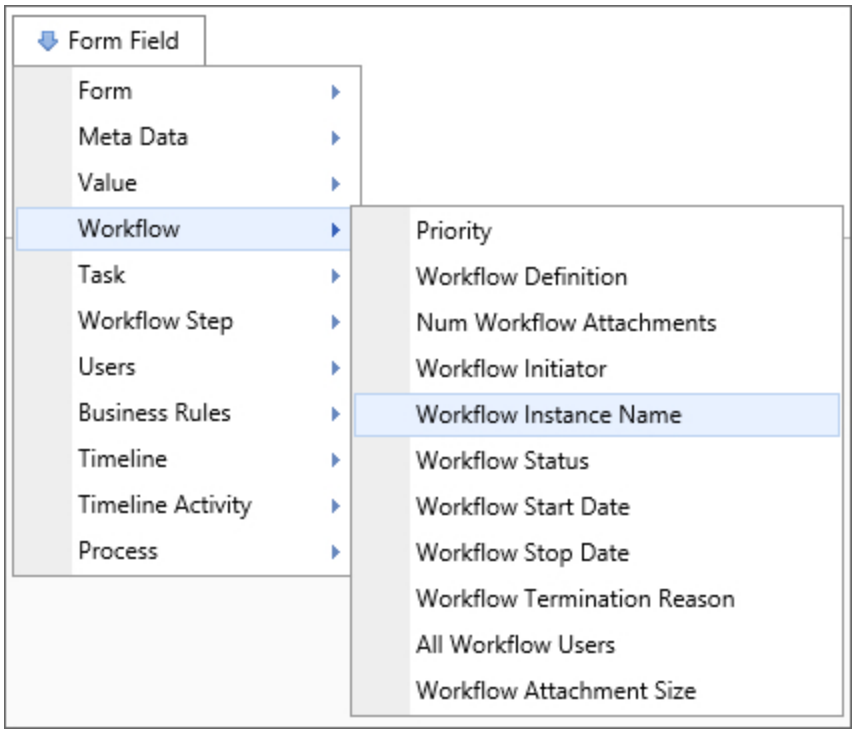
Returns

This system variable returns the ID of the current Workflow instance.

SysVar Tag

`{WORKFLOW_INSTANCE_ID}`

Workflow Instance Name



Returns

The Workflow Instance Name system variable returns the name of the current Workflow instance.

SysVar Tag

```
{WORKFLOW_NAME}
```

Workflow Reference Folder Path

Returns

This system variable returns a string value consisting of the folder path for Workflow attachments. If there are more than one attachment, then a comma-separated list of folder paths will be returned.

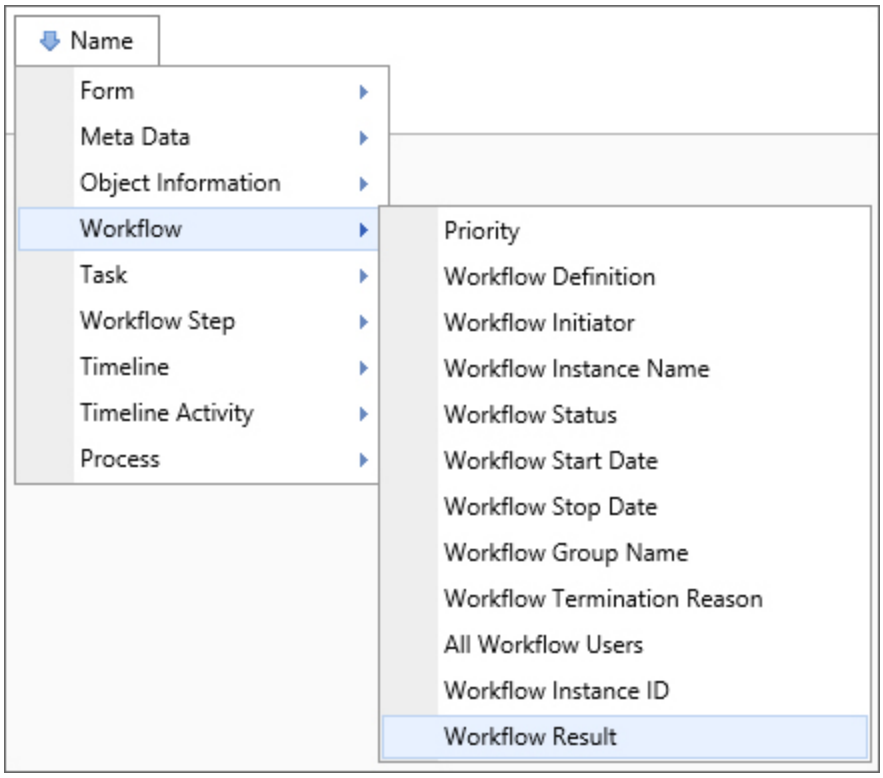
SysVar Tag

```
{WORKFLOW_REFERENCE_FOLDER_PATH, groupname=Group}
```

Modifiers

groupname: Returns only the paths for attachments in the specified group.

Workflow Result



Returns

This system variable returns the result of the last step of this Workflow.

SysVar Tag

```
{WORKFLOW_RESULT, result=FIRST|LAST|ALL}
```

Modifiers

Result: The default value for this modifier is LAST, which will return the last result of the Workflow. When result is set to FIRST, it will return the result of the first instance of the Workflow. If the result is LAST, it will return the result of the last instance of the Workflow. If the result is ALL, it will return a sequentially sorted, comma-separated list of all Workflow instances' results.

Workflow Run Time

Returns

This system variable returns the time the current Workflow instance has run.

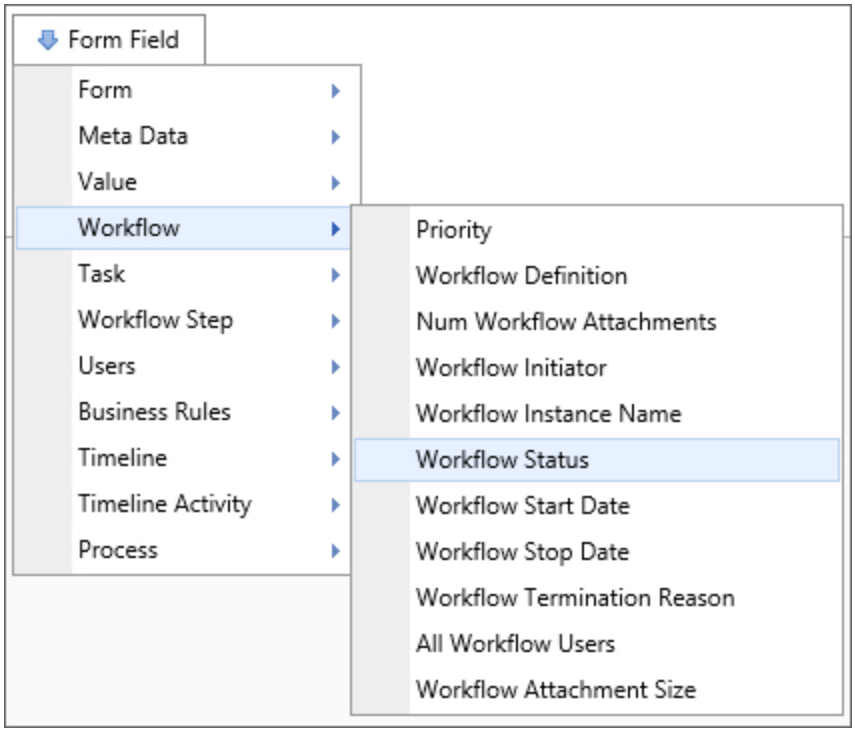
SysVar Tag

```
{WORKFLOW_RUN_TIME}
```

Modifiers

This system variable can be formatted according to the options available to TimeSpan system variables.

Workflow Status



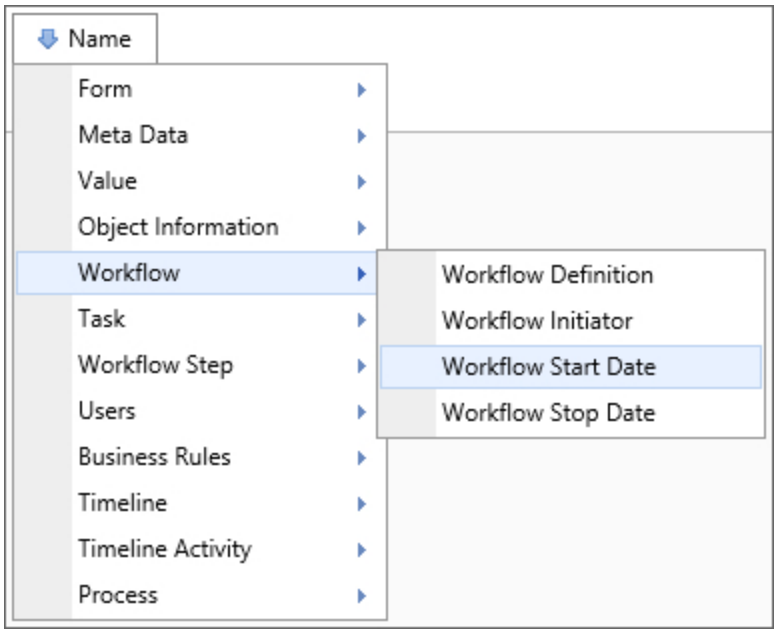
Returns

This system variable returns the status of the Workflow instance. The string returned can be either “Pending”, “Completed”, or “Running”. The system variable will return “Pending” if a Workflow isn't available or has never been run.

SysVar Tag

```
{WORKFLOW_STATUS}
```

Workflow Start Date



Returns

This system variable returns a datetime representing the date the current Workflow instance started.

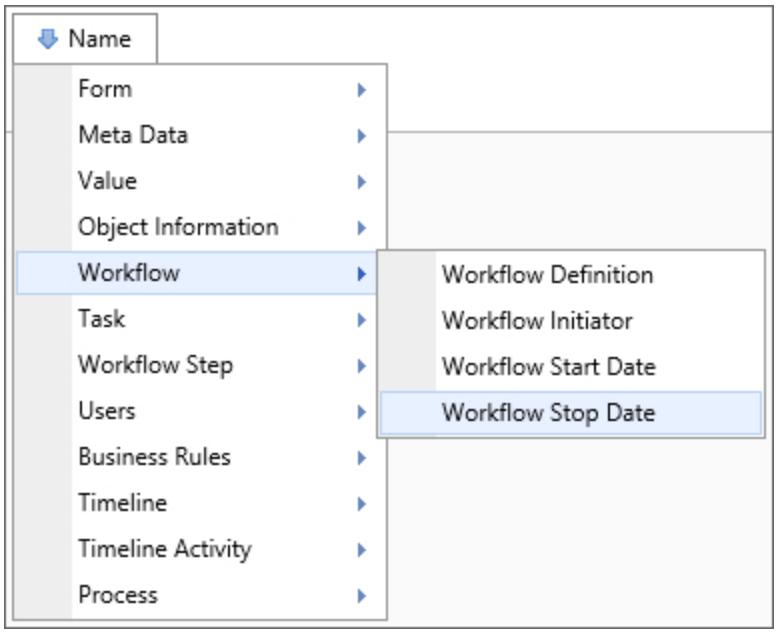
SysVar Tag

`{WORKFLOW_START_DATE}`

Optional Parameters

The result of this system variable can be formatted using the Optional Parameters available to DateTime system variables.

Workflow Stop Date



Returns

This system variable returns the date the current Workflow instance stopped.

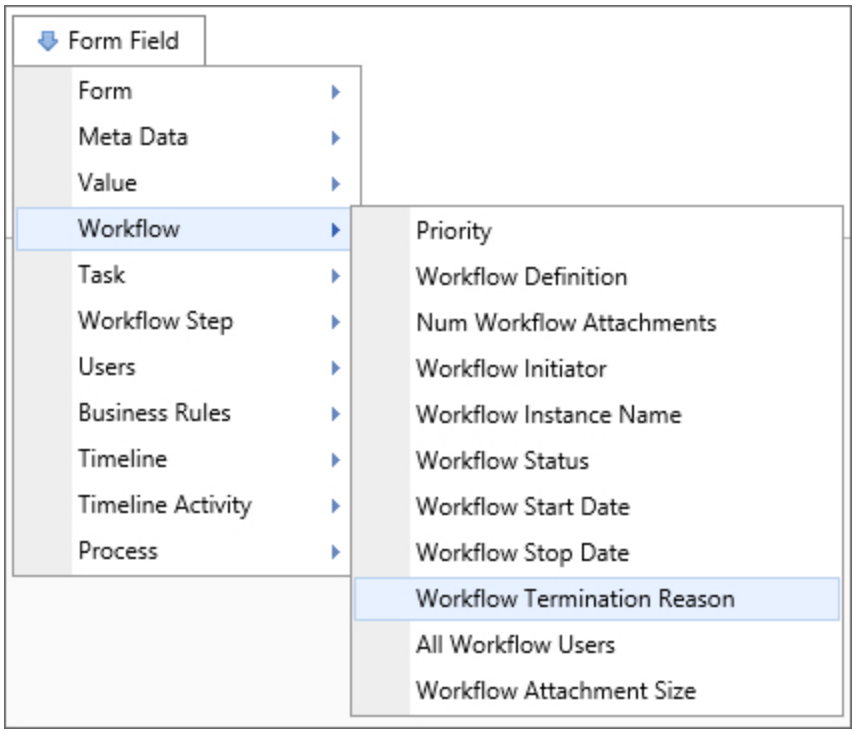
SysVar Tag

```
{WORKFLOW_STOP_DATE}
```

Modifiers

This system variable can be formatted according to the options available to DateTime system variables.

Workflow Termination Reason



Returns

This system variable returns the reason the current Workflow instance terminated. The results of this system variable can be used to handle Workflow errors. If the Workflow is still running or no value has been returned, this system variable will return “Not Set.”

SysVar Tag

`{WORKFLOW_TERM_REASON}`

Workflow Users All Complete

Returns

This system variable returns all users that have completed their tasks with a "normal" completion code.

SysVar Tag

`{WORKFLOW_USERS_ALL_COMPLETE}`

Workflow Step System Variables

The Workflow object is the legacy process model used in early versions of Process Director. BP Logix recommends the use of the Process Timeline object, and not the Workflow object. The Workflow object remains in the product for backwards compatibility, but doesn't receive any new functionality updates, other than required bug fixes. No new features have been added to this object since Process Director v4.5. All new process-based functionality is solely added to the Process Timeline.

All Running Steps

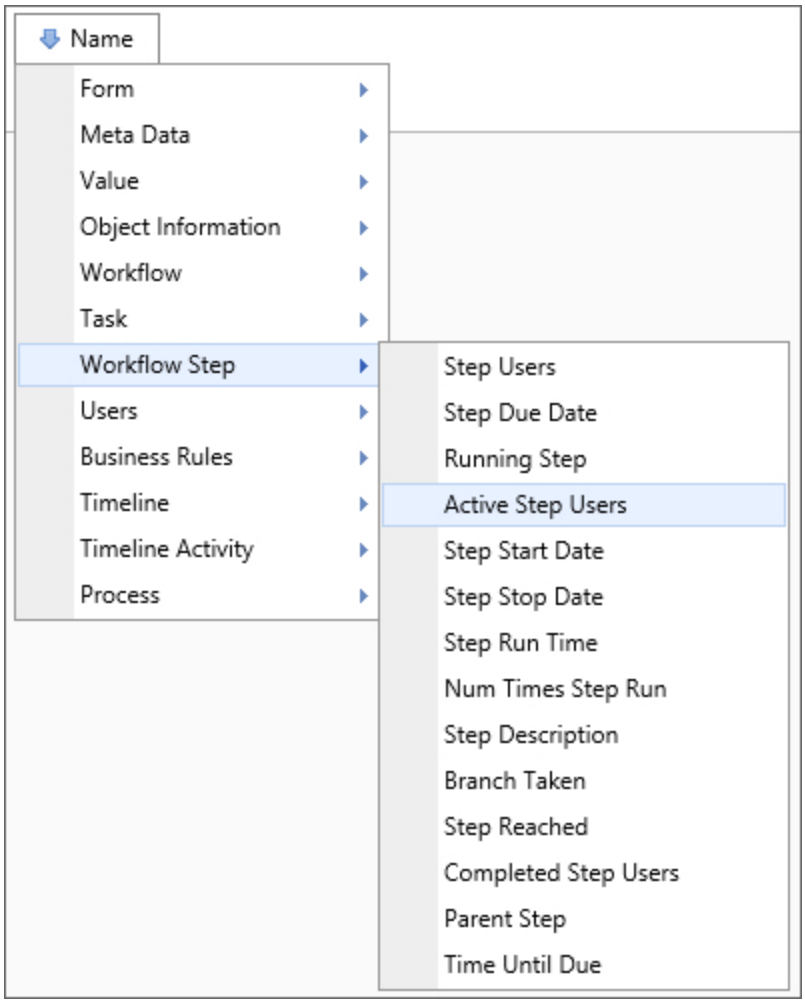
Returns

This system variable returns a comma-separated list of step names for all currently running steps in the Workflow.

SysVar Tag

```
{ALL_RUNNING_STEPS}
```

Active Step Users



Returns

This system variable returns a comma-separated list of users actively involved in this step.

SysVar Tag

```
{STEP_USERS_ACTIVE:StepName, Instance=InstanceNum, ShowDelegator=false, ShowDeleg-
atee=true, format=count|percentage}
```

Parameters

StepName (Required): The name of the Workflow Step to evaluate.

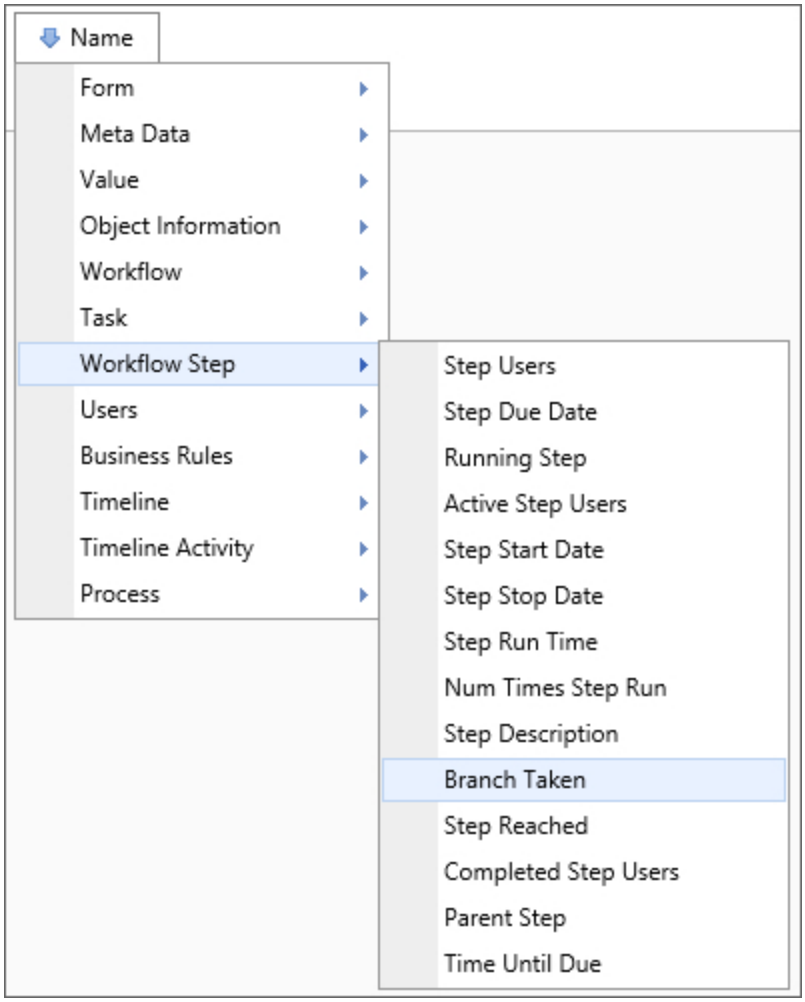
Modifiers

Format: This optional modifier will return either the number of users who are active in the specified step (using the `format=count` argument) or the percentage of users who care active in the step (using the `format=percentage` argument).

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

ShowDelegator/ShowDelegatee: These optional modifiers will return, respectively, who delegated a task or to whom the task is delegated. By default, the delegatee is shown and the delegator is not.

Branch Taken



Returns

This system variable returns the result of a specified step instance. This is the same as the Step Result system variable.

SysVar Tag

```
{BRANCH_TAKEN:StepName, instance=instanceID, SubTask=SubtaskName}
```

Parameters

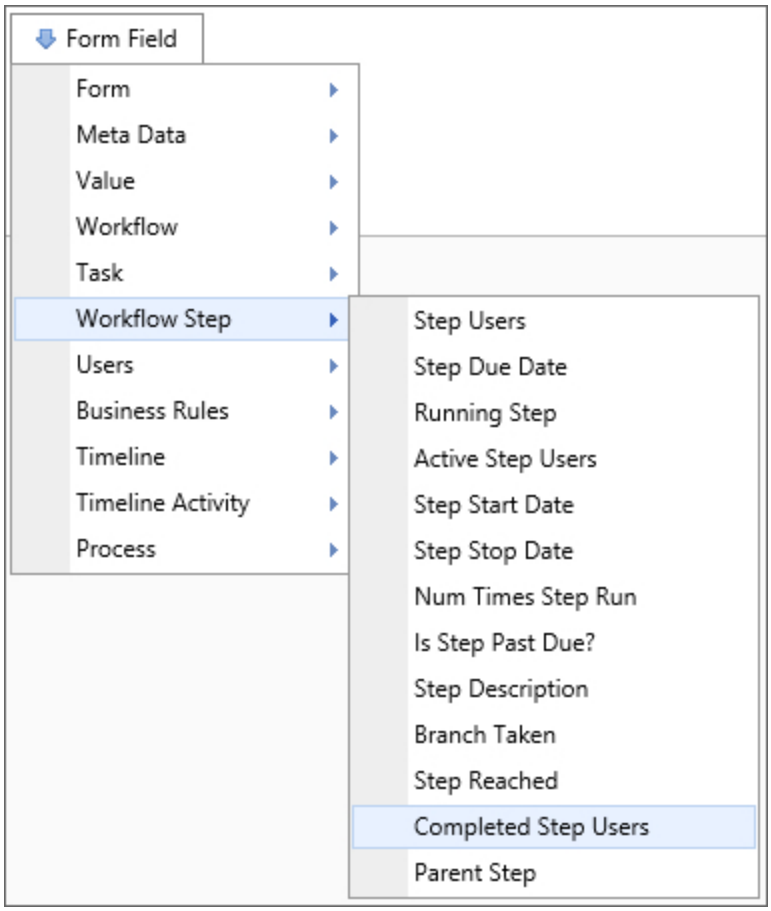
StepName (Required): The name of the Workflow Step to evaluate.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

SubTask: The subtask for which you'd like the result returned.

Completed Step Users



Returns

This system variable returns a comma-separated list of users who have completed the specified step.

SysVar Tag

```
{STEP_USERS_COMPLETE:StepName, Result=branchName, ShowDelegator=false, ShowDelegatee
= true, Instance=N, format=Formatter}
```

Parameters

StepName (Required): The name of the Workflow Step to evaluate.

Modifiers

Format: If no formatting modifiers are used, the user names will be returned. This system variable can be formatted to display either the number of users who are active in the specified step (using the `format=count` argument) or the percentage of users who care active in the step (using the `format=percentage` argument). If multiple users complete this activity, they'll be displayed in a comma-separated list. Using the `format=comments` argument will return only the comments placed by the users. If you want to limit the users to only those who chose a particular result, use the "result=" Modifier.

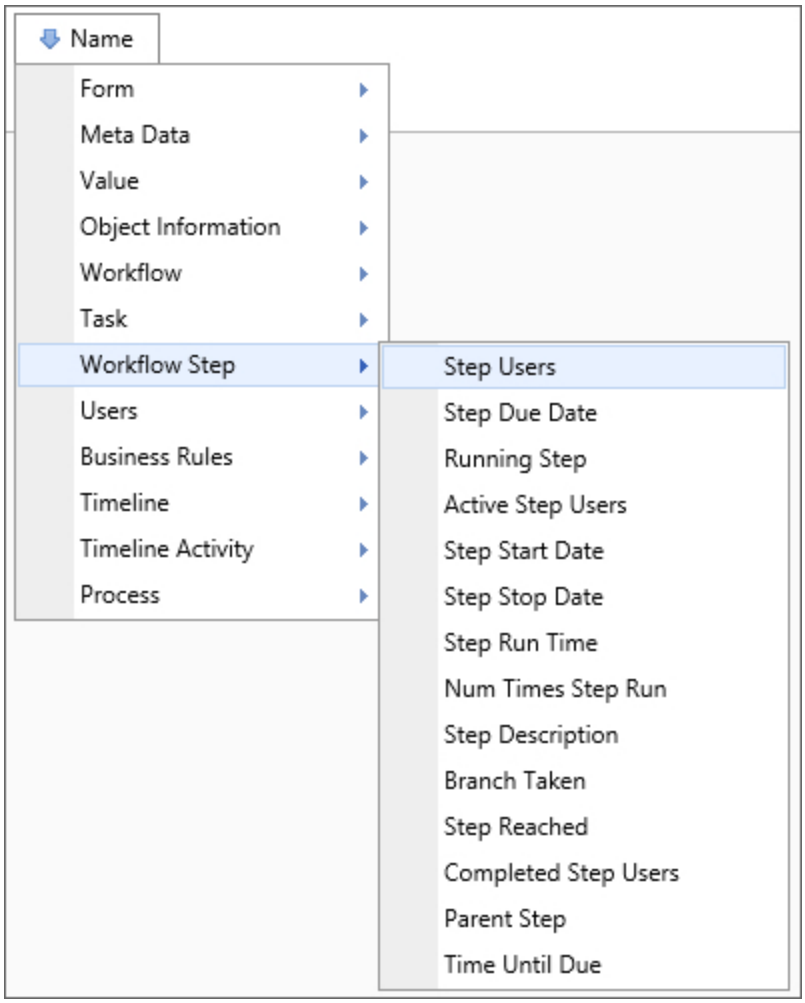
Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

Result: only returns users who have completed the step going through the specified branch.

ShowDelegator/ShowDelegatee: Will respectively display who delegated a task and whom the task is delegated to. By default, the delegatee is shown and the delegator is not.

The result of this system variable can be formatted using the options available to User system variables.

Step Users



Returns

This system variable returns a comma-separated list of all users involved in a Workflow Step.

SysVar Tag

```
{STEP_ USERS:StepName, ShowDelegator=false, ShowDelegatee=true, format=Formatter, instance=N}
```

Parameters

StepName (Required): The name of the Workflow Step to evaluate.

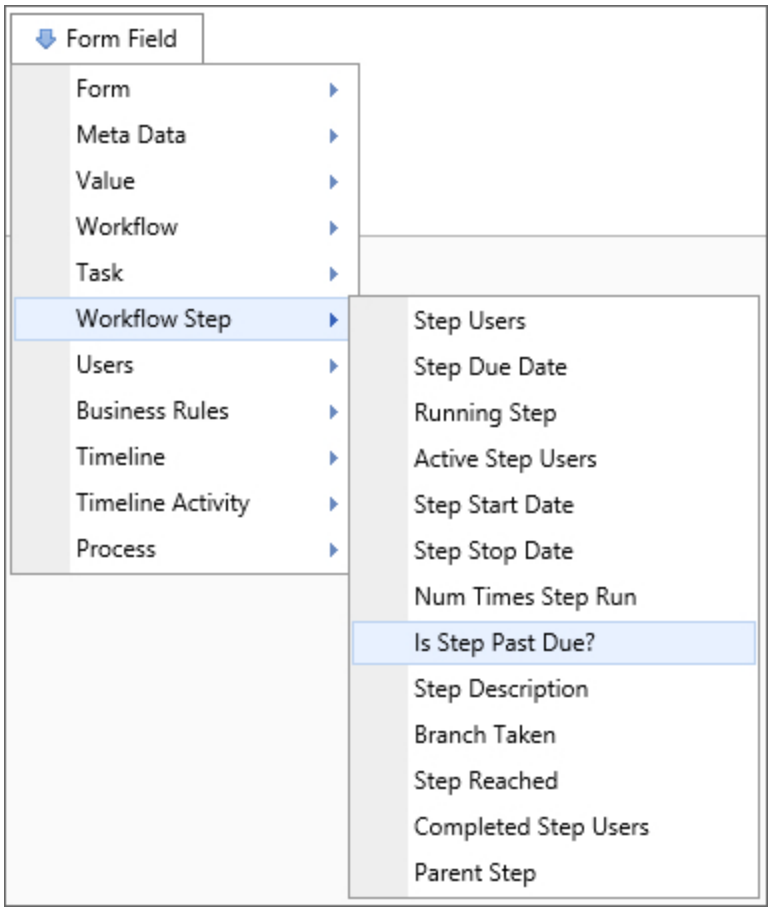
Modifiers

Format: If no formatting modifiers are used, the user names will be returned. This system variable can be formatted to display either the number of users who are active in the specified step (using the `format=count` argument) or the percentage of users who care active in the step (using the `format=percentage` argument). If multiple users participate in this activity, they'll be displayed in a comma-separated list.

ShowDelegator/ShowDelegatee: Will respectively display who delegated a task and whom the task is delegated to. By default, the delegatee is shown and the delegator is not.

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

Is Step Past Due?



Returns

This system variable returns a Boolean indicating whether the step is running past the due date.

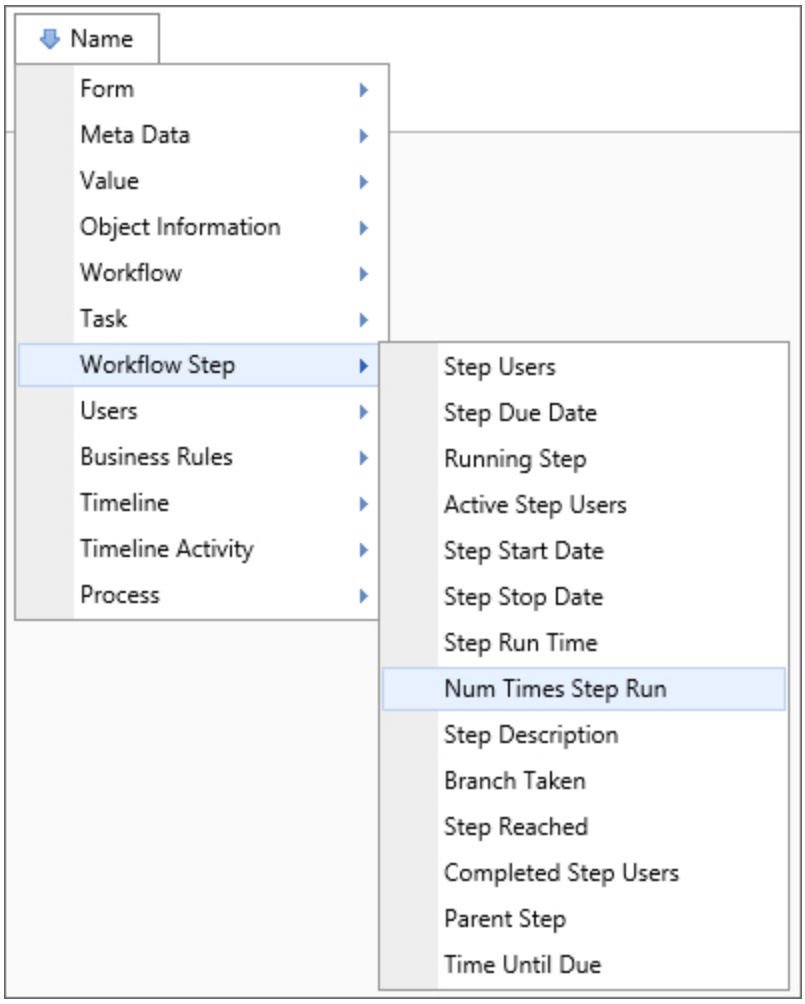
SysVar Tag

```
{STEP_PAST_DUE:StepName}
```

Parameters

StepName: The name of the Workflow Step to evaluate. If the step name isn't provided, Process Director will check the currently running step to see if it is past due.

Num Times Step Run



Returns

This system variable returns the number of times a step has run. You can use this to break out of loops in a Workflow.

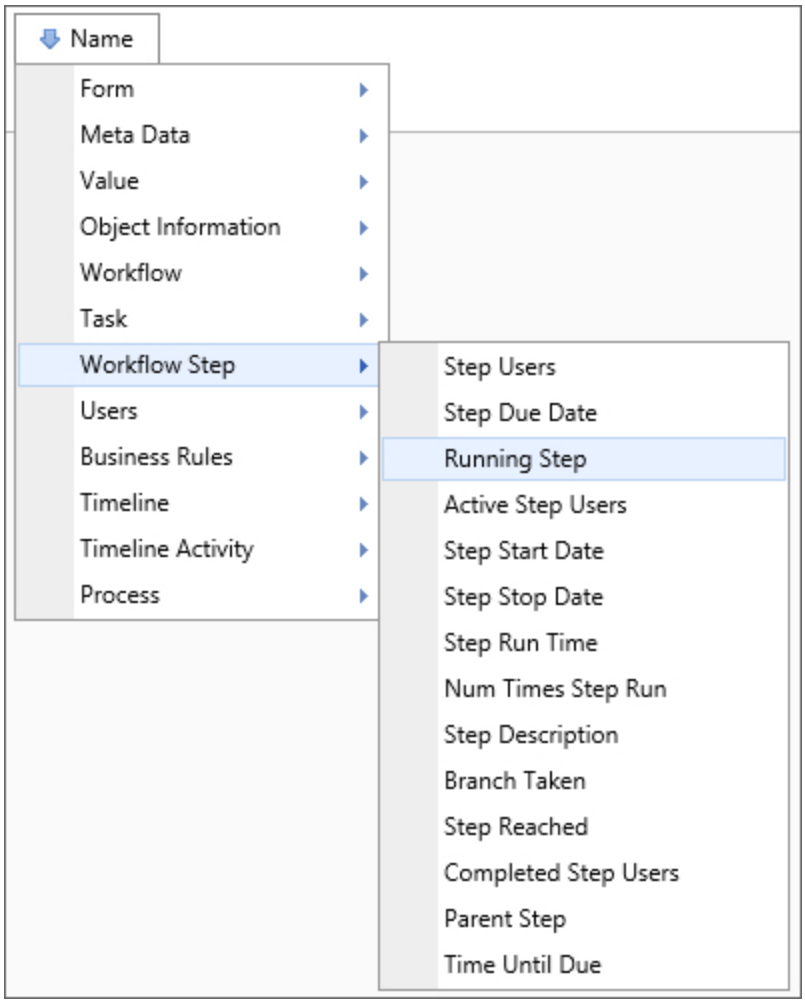
SysVar Tag

```
{STEP_NUM_TIMES_RUN:StepName}
```

Parameters

StepName (Required): The name of the Workflow Step to evaluate.

Running Step



Returns

This system variable returns the name of the currently running step.

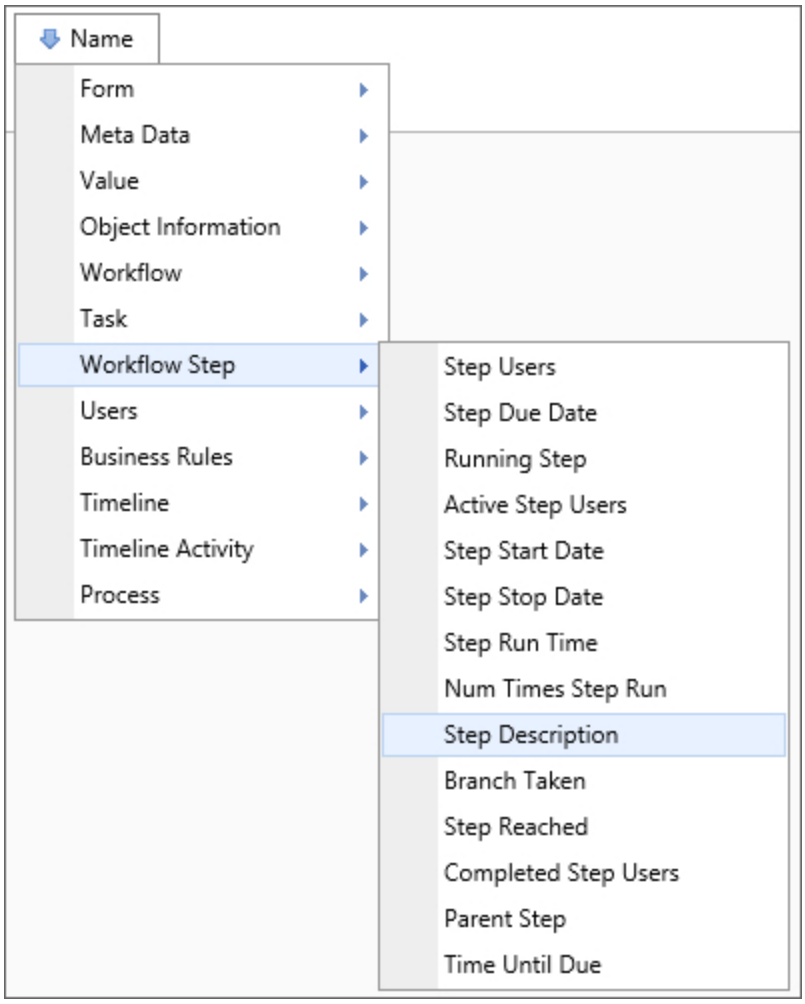
SysVar Tag

```
{STEP_RUNNING_NAME, format=id}
```

Optional Parameters

format=id: If the `format=id` argument is used, this system variable will return the step's ID rather than its name.

Step Description



Returns

This system variable returns a string containing the description of this Workflow Step.

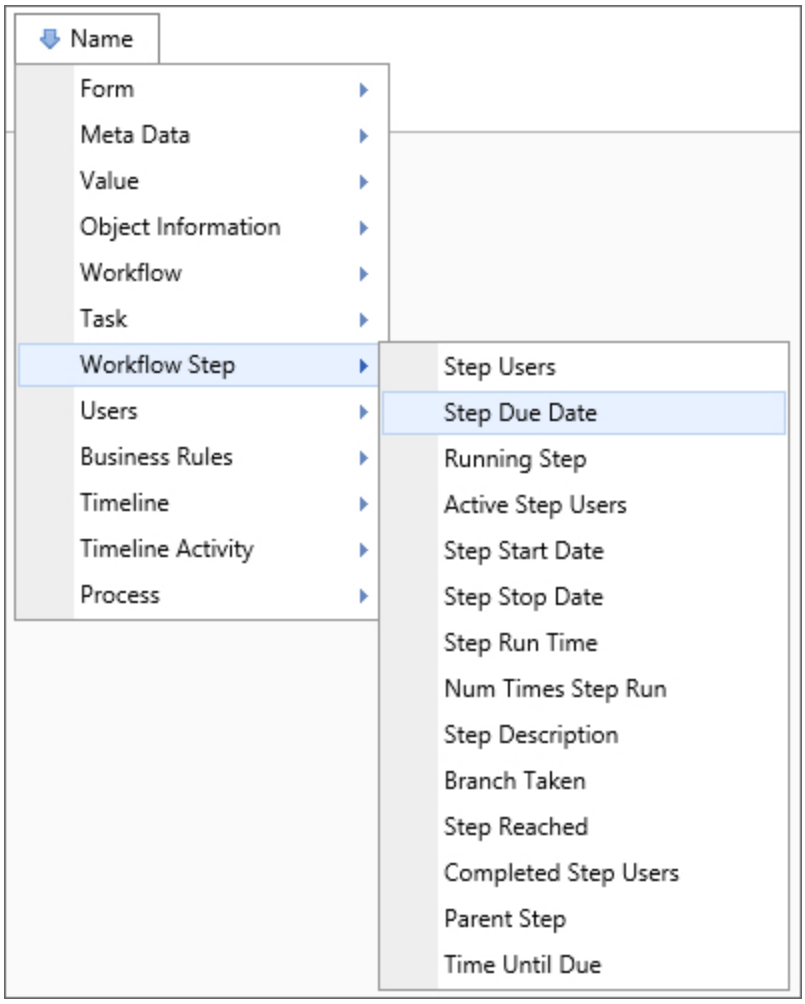
SysVar Tag

```
{STEP_DESCRIPTION:StepName}
```

Parameters

StepName: The name of the Workflow Step to evaluate. If no step name is specified, this system variable will return the start date of the currently running step.

Step Due Date



Returns

This system variable returns the date the current step is due.

SysVar Tag

```
{STEP_DUE_DATE:StepName, instance=N}
```

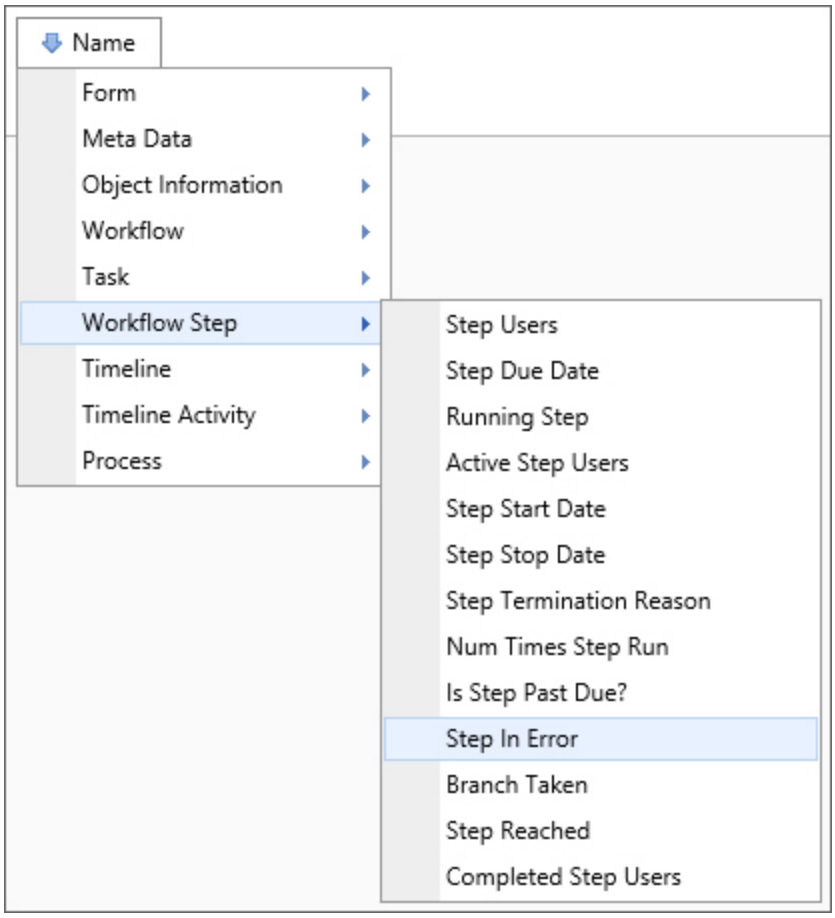
Parameters

StepName (Required): The name of the Workflow Step to evaluate.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

Step In Error



Returns

This system variable returns the name of the step currently in an error state.

SysVar Tag

```
{STEP_IN_ERROR}
```

Step Instance ID

Returns

This system variable returns the Instance ID of the running instance of a given Workflow Step.

SysVar Tag

```
{STEP_INSTANCE_ID:StepName}
```

Parameters

StepName (Required): The name of the Workflow Step to evaluate.

Step Message

Returns

This system variable returns the message for the specified step.

SysVar Tag

```
{STEP_MESSAGE:StepName}
```

Parameters

StepName: The name of the Workflow Step to evaluate. If not specified, this system variable will return the start date for the currently running step.

Step Name

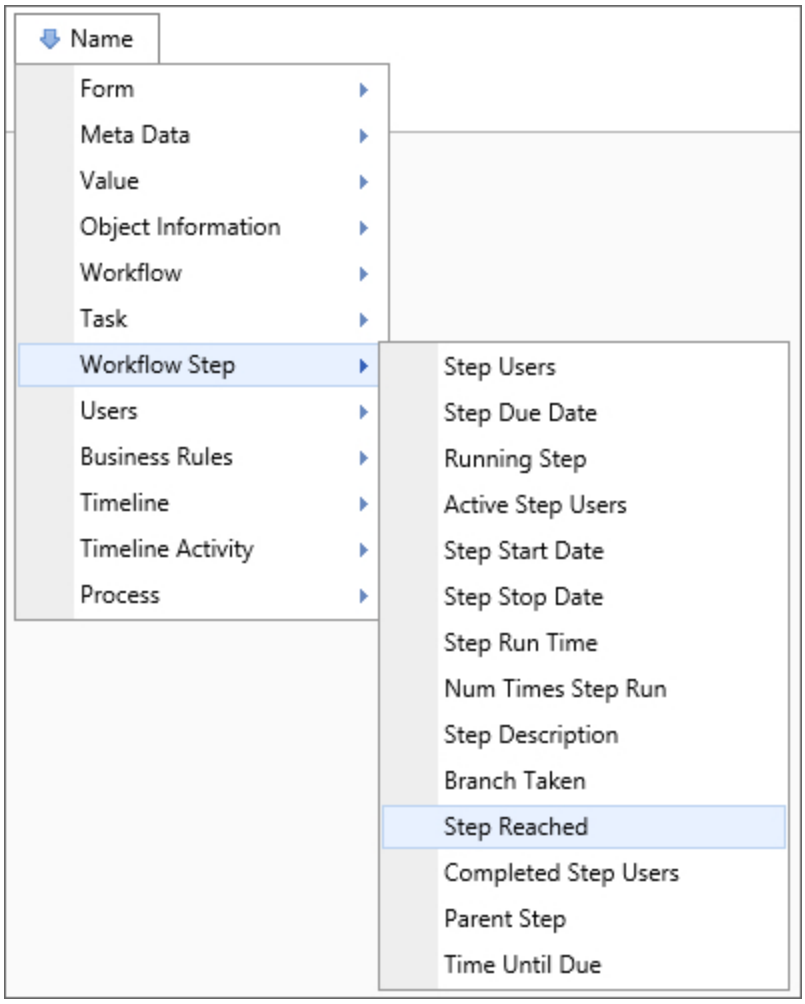
Returns

This system variable returns the name of the currently running Workflow Step in the context of the object that calls it. For instance, an email template that invokes the SysVar for a user activity notification will display the name of the Workflow Step that generated the notification.

SysVar Tag

```
{STEP_NAME}
```

Step Reached



Returns

This system variable returns a Boolean value based on whether the specified step has been reached.

SysVar Tag

```
{STEP_REACHED}
```

Step Result

Returns

This system variable returns the result of a specified step instance. This is the same as the Branch Taken system variable.

SysVar Tag

```
{STEP_RESULT:StepName, instance=instanceID, SubTask=SubtaskName}
```

Parameters

StepName (Required): The name of the Workflow Step to evaluate.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

SubTask: The subtask for which you'd like the result returned.

Step Result Count

Returns

This system variable returns the number of times the specified step has returned this result.

SysVar Tag

```
{STEP_RESULT_COUNT:StepName, result=ResultName}
```

Parameters

StepName (Required): The name of the Workflow Step to evaluate.

Modifiers

Result: The name of the result for which you wish to return the count.

Step Run Time

Returns

This system variable returns the amount of time the specified step has run.

SysVar Tag

```
{STEP_RUN_TIME:StepName}
```

Parameters

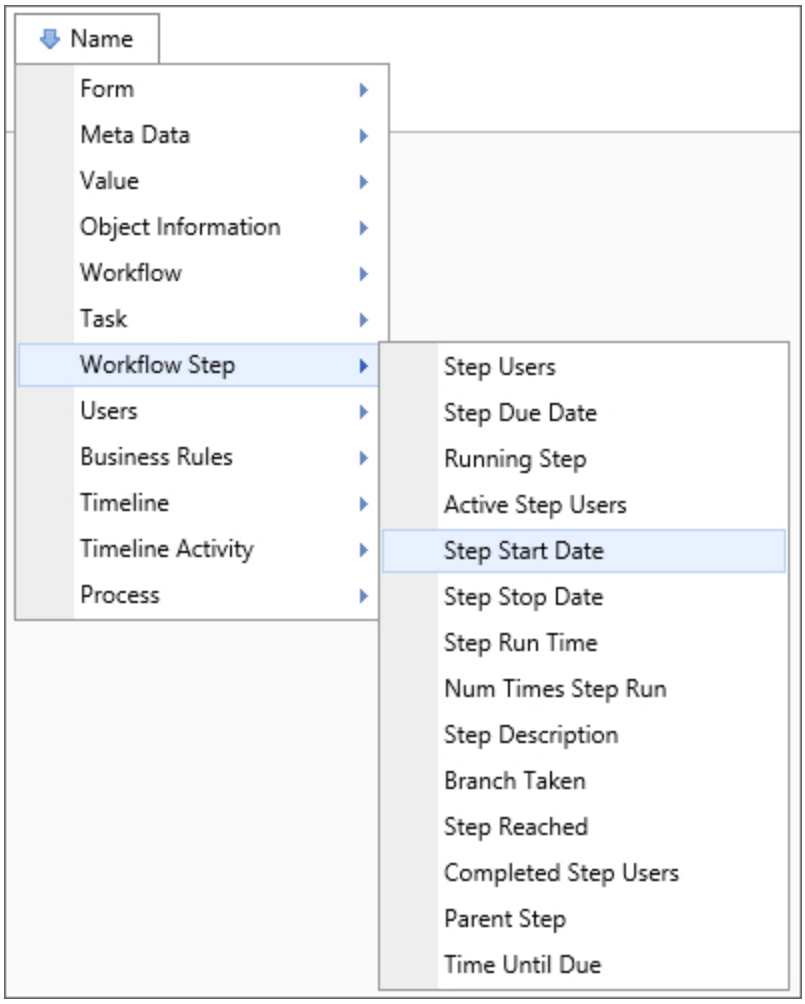
StepName: The name of the Workflow Step to evaluate. If no step is specified, this system variable returns the start date of the currently running step.

Modifiers

This system variable's result can be formatted using the Modifiers that are generally available for TimeSpan system variables.

If you want to create a Knowledge View column to sort by the Step Run Time, return the Step Run Time in seconds or min or hours, and then format it so that it prepends zeros in the seconds. EXAMPLE: `{STEP_RUN_TIME,FORMAT=[DDD]|[hh]|[mm]|[ss]}`

Step Start Date



Returns

This system variable returns the date that the specified step started.

SysVar Tag

```
{STEP_START_DATE:StepName, instance=InstanceNum}
```

Parameters

StepName (Required): The name of the Workflow Step to evaluate.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

Step Status

Returns

This system variable returns a step's status. It will return either "Running", "Completed", or "Pending." The system variable will only return "Pending" if the specified step isn't available or hasn't been run.

SysVar Tag

```
{STEP_STATUS:StepName, instance=InstanceNum}
```

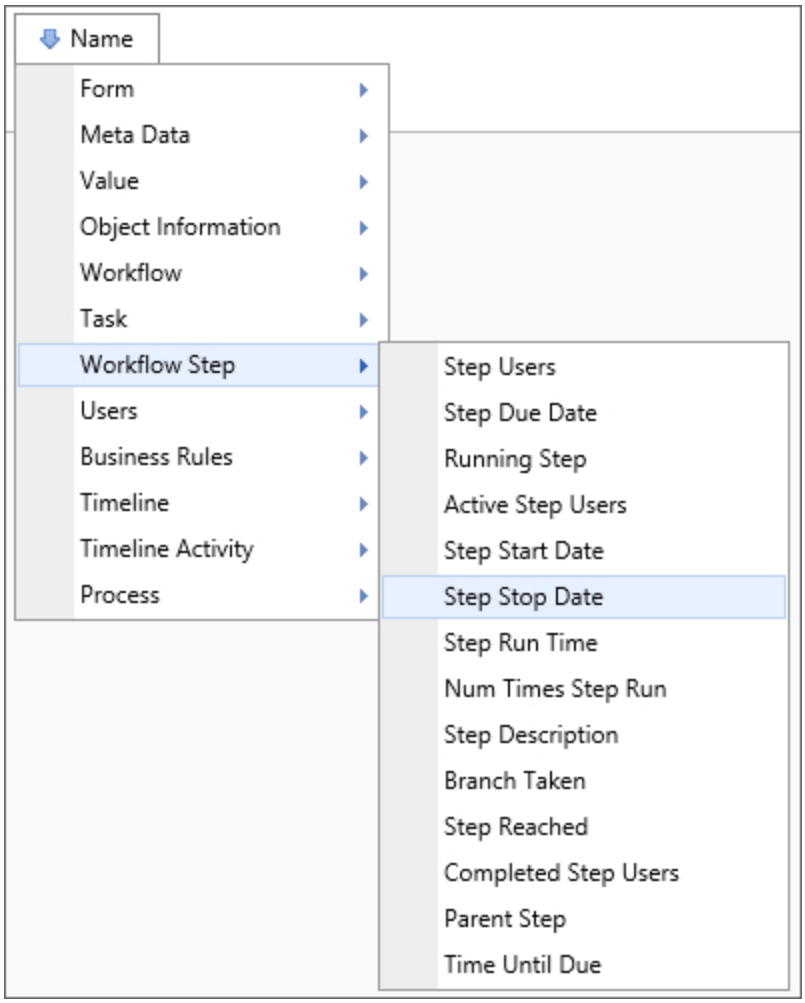
Parameters

StepName (Required): The name of the Workflow Step to evaluate.

Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

Step Stop Date



Returns

This system variable returns the date this step stopped.

SysVar Tag

```
{STEP_STOP_DATE:StepName, instance=InstanceNum, SubTask=SubtaskName}
```

Parameters

StepName (Required): The name of the Workflow Step to evaluate.

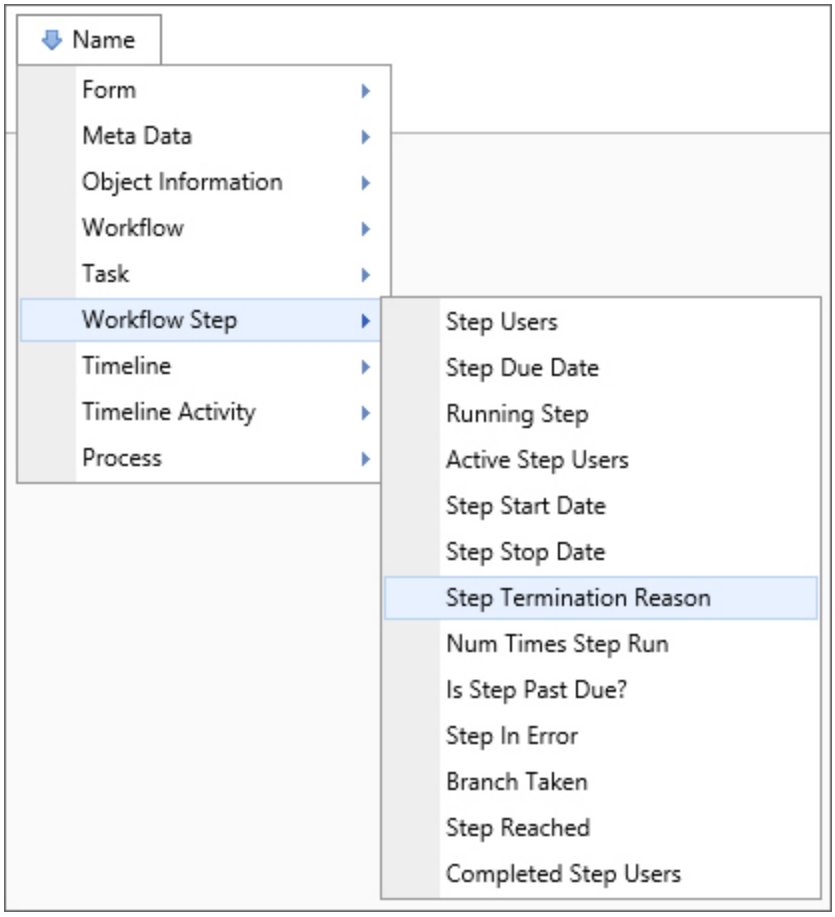
Modifiers

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

SubTask: The subtask for which you'd like the result returned.

This system variable's result can be formatted using the Modifiers that are generally available for DateTime system variables.

Step Termination Reason



Returns

This system variable returns the reason the specified step terminated. If the step hasn't terminated, this system variable will return “Not Set”.

- Canceled
- Not Required
- Error
- Completed
- Notified
- Not Set
- Reassigned
- Stopped
- Timeout

“Not Set” is returned if the step has yet to complete.

SysVar Tag

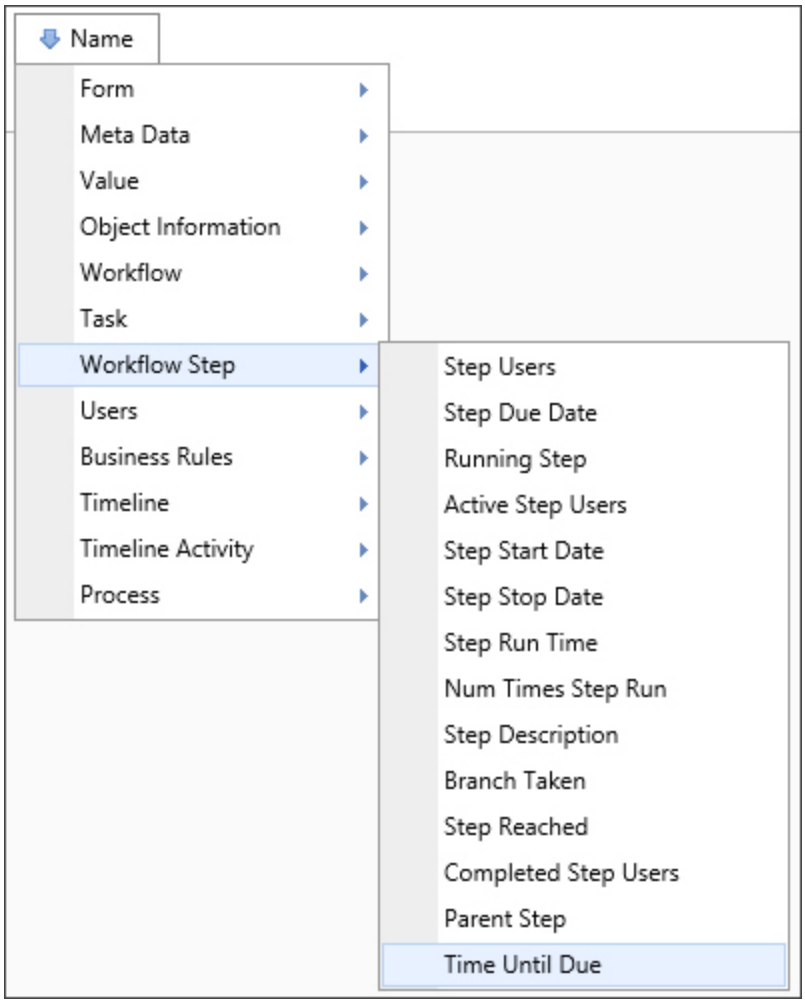
```
{STEP_TERM_REASON, Step=StepName, instance=InstanceNum}
```

Modifiers

Step: This system variable must specify a step name using the step parameter. Should this name not be specified, the system variable will return the start date of the current step.

Instance: This optional modifier takes an integer that corresponds to the number of times the step was run, which is useful for iterated steps. See the Instance Modifier section of the Parameters topic for more information.

Step Time Until Due



Returns

This system variable returns the amount of time until the current step is due.

SysVar Tag

`{STEP_TIME_UNTIL_DUE}`

Modifiers

This system variable's result can be formatted using the Modifiers that are generally available for TimeSpan system variables.

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