

Integrations

Universal Controller 7.5.x

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1 Integration Hub

[Integration Hub](#)

[Import Integration Template](#)

[Available Integrations](#)

2 Integrations

[Universal Tasks](#)

[PeopleSoft Tasks](#)

[SAP Tasks](#)

3 Built-In Universal Templates

[Universal Templates Overview](#)

4 Universal Tasks Overview

4.1 Overview

Universal Tasks allow Universal Controller users to implement task types that are specific to their own in-house applications, utilities, or third-party vendor applications.

In cases where you are using a generic script with a Windows or Linux/Unix Universal Agent-based task, you now can create a customized Universal Task Details that encapsulates the specific input needed for that command or script.

Universal Tasks are created for specific Universal Task types, which are based on [Universal Templates](#). When a Universal Template is created, or imported from the Stonebranch Integration Hub, Universal Controller creates a corresponding Universal Task type - **<template name> Tasks** - under the Universal Tasks folder in the [Automation Center](#) navigation pane.

Each Universal Template contains user-defined fields, to which the Controller assigns a variable to be used in the Universal Template [script](#). The Controller also automatically adds these fields to the Details of all Universal Tasks created for the Universal Task type based on that Universal Template. When a Universal Task is run, it executes the script in the Universal Template and the variables in the script are resolved to the values of their matching fields in the Universal Task instance.

In this way, you can execute the same script from different tasks and have the script variables resolve to different values.

If you want to change the script, including the adding or removing variables, you only have to change it in the Universal Template.

4.2 Universal Task User-Defined Fields

The Details for each Universal Task contains any editable fields that were created in the [Universal Template](#) on which the Universal Task type for that Universal Task is based. System-assigned variables that match these fields are provided for inclusion in the template script. When the task is run, it executes the script, and the variables are resolved to the values of their matching values in the task.

There are eight types of user-defined fields that can appear in the Details of a Universal Task:

- Text
 - Normal text (for a single line of text)
 - Large Text (for multiple lines of text)
- Integer
- Boolean
- Choice
- Credential
- Script
- Array
- Float

For Script-based Universal Tasks, [Credentials Functions](#), [Script Functions](#), [SAP Connection Functions](#), and [Database Connection Functions](#) are fully supported within the Universal Template Script, and within any embedded Data scripts. For Extension-based Universal Tasks, these functions are also fully supported within the content of a Script field and within any embedded Data scripts.

For each type of field, default values, format, and/or limitations are specified in the Universal Template. In any Universal Task based on that Universal Template, you can override and/or define values - within the specified format and limitations - for those fields.

- If the Allow Empty Choice field was selected for a Choice field in the Universal Template on which this Universal Task was based, that Choice field in the task will include an empty (blank) selection.
- If the Allow Multiple Choices field was selected for a Choice field in the Universal Template on which this Universal Task was based, that Choice field in the task will allow selection of more than one choice. When multiple choices are selected, the built-in field variable will resolve to a comma-delimited String of choice values.
- Any field that has a Require If Field dependency on a Boolean field in the Universal Template on which the Universal Task is based will change from required to optional (or optional to required) when toggling the Boolean field checkbox, depending on the Require If Field Value(s).
- Any field that has a Require If Field dependency on a Choice field in the Universal Template on which the Universal Task is based will become required when selecting a choice value specified in the Require If Field Value(s) and optional when selecting a choice value not specified in the Require If Field Value(s).
- Any field that has a Show If Field dependency on a Boolean field in the Universal Template on which the Universal Task is based will change from visible to hidden (or hidden to visible) when toggling the Boolean field checkbox, depending on the Show If Field Value(s).
- Any field that has a Show If Field dependency on a Choice field in the Universal Template on which the Universal Task is based will become visible when selecting a choice value specified in the Show If Field Value(s) and hidden when selecting a choice value not specified in the Show If Field Value(s).
- Any field visible due to a Show If Field dependency in the Universal Template on which the Universal Task is based will display as required (bold label) if the Require If Visible option is specified for the Universal Template field; otherwise, it will display as optional (non-bold label).
- By default, the column and row space occupied by a field remain reserved even when the field is hidden by a Show If Field dependency. To change the default behaviour, the No Space If Hidden option must be specified for the Universal Template field.

4.3 Setting Up Universal Templates and Tasks

Step 1	Create a Universal Template , which includes selecting the type of Agent(s) on which Universal Tasks based on this Universal Template can be run, and a variable prefix used for script variables that you want resolved when a Universal Task executes the script in this Universal Template.
Step 2	Enter a script in the Universal Template that all Universal Tasks based on this Universal Template will execute when they are run.
Step 3	After you have entered/selected any other desired values in the Universal Template Details , save the Universal Template.

Step 4	For each parameter in the script that you want to replace with a variable, create a Universal Template Field of an appropriate Field type. The Controller automatically assigns a variable (format: ops_<Variable Prefix>_<Field Name>) to each Field, using the variable prefix that you specified in Step 1, and - in the Details of all Universal Tasks based on this Universal Template - will place fields that match these Universal Template Fields (see Step 7).
Step 5	Replace the appropriate parameters in the script with the system-assigned variables.
Step 6	Update the Universal Template. Now that the Universal Template has one or more defined Fields, the Controller creates a Universal Task type for it and adds the Universal Task type to the Automation Center navigation pane. (You must refresh the Automation Center navigation pane in order to see the new Universal Task type.)
Step 7	Create a Universal Task for that Universal Task type. The Universal Task Details will contain fields that match the Fields you created in the Universal Template (Step 4) for that Universal Task type.
Step 8	Enter/change values in the Universal Task fields that match the Universal Template Fields, based on how you want their matching variables in the script to be resolved.
Step 9	Run the task, which executes the script. The variables in the script are resolved to the values of their matching fields in the Universal Task.

5 Creating a Universal Task

5.1 Before You Begin

Universal Task allows you to run a platform-specific application on a Linux/Unix or Windows machine. To run a Universal task, you must first complete the following tasks:

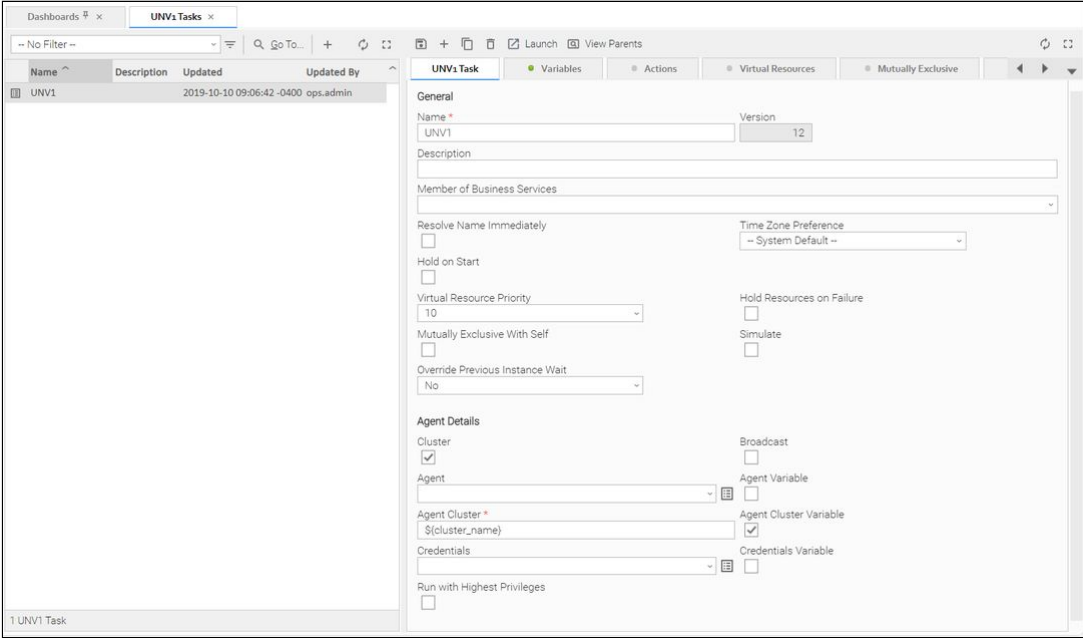
- [Install Universal Agent for Linux/Unix](#) on a Linux/Unix machine and/or [install Universal Agent for Windows](#) on a Windows machine.
- Launch the Agent(s). When an Agent connects with the Controller, it automatically creates an [Agent resource definition](#) in the database.
- Optionally, customize the Agent heartbeat and log levels, as described in:
 - [Linux/Unix Agent Details Field Descriptions](#) .
 - [Windows Agent Details Field Descriptions](#)

5.2 Built-In Variables

In addition to the system-assigned variables in the [Universal Template](#) script that a Universal task executes, the following [built-in variables](#) can be used in a Universal task to pass data where appropriate:

- [Agent-Based Task Instance variables](#)
- [Task Instance variables](#)

5.3 Creating a Universal Task

<p>Step 1</p>	<p>From the Universal Tasks section of the Automation Center navigation pane, select a Universal Task type. The Universal Tasks list for that Universal Task type displays.</p> <p>To the right of the list, Universal Task Details for a new Universal Task displays.</p> 
<p>Step 2</p>	<p>Enter / select Details for a new Universal Task, using the field descriptions below as a guide.</p> <ul style="list-style-type: none"> • Required fields display an asterisk (*) after the field name. • Default values for fields, if available, display automatically. <p>To display more of the Details fields on the screen, you can either:</p> <ul style="list-style-type: none"> • Use the scroll bar. • Temporarily hide the list above the Details. • Click the New button above the list to display a pop-up version of the Details.
<p>Step 3</p>	<p>Click a Save button. The task is added to the database, and all buttons and tabs in the Universal Task Details are enabled.</p>

Note

To [open](#) an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- Clicking the [Details icon](#) next to a record name in the list, or right-click a record in the list and then click **Open** in the [Action menu](#) that displays, to display a pop-up version of the record Details.
- Right-click a record in the a list, or open a record and right-click in the record Details, and then click **Open In Tab** in the [Action menu](#) that displays, to display the record Details under a new tab on the record list page (see [Record Details as Tabs](#)).

5.3.1 Universal Task Details

The following Universal Task Details is for an existing Universal task.

Depending on the values that you enter / select for these fields, and whether or not the Universal Task has ever been launched, more (or less) fields may display. See the [field descriptions](#), below, for a description of all fields that may display in the Universal Task Details.

Launch View Parents

UNV1 Task
Variables
Actions
Virtual Resources
Mutually Exclusive
Instances
Trigg

General

Name * Version

Description

Member of Business Services

Resolve Name Immediately

Hold on Start

Virtual Resource Priority

Mutually Exclusive With Self

Override Previous Instance Wait

Time Zone Preference

Hold Resources on Failure

Simulate

Agent Details

Cluster

Agent

Agent Cluster *

Credentials

Run with Highest Privileges

Broadcast

Agent Variable

Agent Cluster Variable

Credentials Variable

UNV1 Details

Message

Choice

Runtime Directory

Environment Variables

Name	Value
No items to show.	

Result Processing Details

Exit Code Processing

Exit Codes *

Automatic Output Retrieval

5.3.2 Universal Task Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in the Universal Task Details.

Field Name	Description
General	This section contains general information about the task.
Name	User-defined name of this task (Maximum = 255 alphanumeric characters); variables supported. It is the responsibility of the user to develop a workable naming scheme for tasks.
Version	System-supplied; version number of the current record, which is incremented by the Controller every time a user updates a record. Click the Versions tab to view previous versions. For details, see Record Versioning .
Description	Description of this record. (Maximum = 255 characters.)
Member of Business Services	User-defined; Allows you to select one or more Business Services that this record belongs to. (You also can Check All or Uncheck All Business Services for this record.) You can select up to 62 Business Services for any record type, and enter a maximum of 2048 characters for each Business Service. If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles , Business Services available for selection may be restricted.
Resolve Name Immediately	If enabled, the Instance Name of the task instance will be resolved immediately at trigger/launch time.
Time Zone Preference	User-defined; Allows you to specify the time zone that will be applied to the task. Options: <ul style="list-style-type: none"> – System Default – Time zone is based on the value of the Task Time Zone Preference Universal Controller system property: Server or Inherited. Server (xxx) Where (xxx) is the time zone ID of the server; time zone is evaluated in the time zone of the server. Inherited Time zone is evaluated in the time zone of the Parent Workflow or Trigger / Launch specification in the case there is no Parent Workflow.
Hold on Start	If enabled, when the task is launched it appears in the Activity Monitor with a status of Held . The task runs when the user releases it.
Hold Reason	Information about why the task will be put on hold when it starts.
Virtual Resource Priority	Priority for acquiring a resource when two or more tasks are waiting for the resource. This priority applies to all resources required by the task. Options: 1 (high) - 100 (low). Default is 10.
Hold Resources on Failure	If enabled, the task instance will continue to hold Renewable resources if the task instance fails. Renewable resources will be returned only if the task instance status is either Complete, Finished, or Skipped.
Agent Details	This section contains assorted detailed information about the Agent.
Agent	Name of the Agent resource that identifies the machine where the operation will run. If you do not specify an Agent, you must specify an Agent Cluster .

<p>Agent Cluster</p>	<p>If Cluster is selected and Broadcast is not selected; Group of Agents, one of which the Controller will choose to run this task (compare with Cluster Broadcast). You can specify an agent cluster in addition to or in place of a specific Agent. If you specify an Agent and an agent cluster, the Controller first tries to run the task on the specific agent. If the Agent is not available, the Controller reverts to the agent cluster. See Agent Clusters for more information.</p>
<p>Agent Variable</p>	<p>Indication of whether the Agent field is a reference field for selecting a specific Agent (unchecked) or a text field for specifying the Agent as a variable (checked). Use the format: <code>\${variable name}</code>. The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using an Agent reference to using an Agent variable, you must change the Agent Variable field to Yes and specify the Agent variable in the Agent Unresolved field. Conversely, to change from using an Agent variable to using an Agent reference, you must change the Agent Variable field to No and specify the Agent reference in the Agent field.</p> </div>
<p>Agent Cluster Variable</p>	<p>Indication of whether the Agent Cluster field is a reference field for selecting a specific Agent Cluster (unchecked) or a text field for specifying the Agent Cluster as a variable (checked). Use the format: <code>\${variable name}</code>.</p> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using an Agent Cluster reference to using an Agent Cluster variable, you must change the Agent Cluster Variable field to Yes and specify the Agent Cluster variable in the Agent Cluster Unresolved field. Conversely, to change from using an Agent Cluster variable to using an Agent Cluster reference, you must change the Agent Cluster Variable field to No and specify the Agent Cluster reference in the Agent Cluster field.</p> </div>
<p>Credentials</p>	<p>Credentials under which an Agent runs this task. These Credentials override any Credentials provided in the Agent Details for any Agent running this task.</p> <p>If the user does not have a login shell, add a - character in front of the runtime credentials name. The Controller will provide a shell for that user and strip the - character from the name.</p> <p>Required if the Agent Credentials Required Universal Controller system property is true. When required, if the Credential is specified as a variable, and the variable resolves to blank, a Start Failure will occur.</p>

<p>Credentials Variable</p>	<p>Indication of whether the Credentials field is a reference field for selecting a specific Credential (unchecked) or a text field for specifying the Credential as a variable (checked). Use the format: <code>#{variable name}</code>.</p> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Credentials reference to using a Credentials variable, you must change the Credentials Variable field to Yes and specify the Credentials variable in the Credentials Unresolved field. Conversely, to change from using a Credentials variable to using a Credentials reference, you must change the Credentials Variable field to No and specify the Credentials reference in the Credentials field.</p> </div>
<p>Cluster Broadcast</p>	<p>Group of Agents, all of which will run this task (compare with Agent Cluster). If Broadcast is selected for a task, you must select a Cluster Broadcast instead of a specific Agent and/or agent cluster. Each instance of the task running on its own Agent becomes a separate task instance record in the database and displays separately on the Activity Monitor.</p>
<p>Cluster Broadcast Variable</p>	<p>Indication of whether the Cluster Broadcast field is a reference field for selecting a specific Cluster Broadcast (unchecked) or a text field for specifying the Cluster Broadcast as a variable (checked). Use the format: <code>\$(variable name)</code>.</p> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Cluster Broadcast reference to using a Cluster Broadcast variable, you must change the Cluster Broadcast Variable field to Yes and specify the Cluster Broadcast variable in the Cluster Broadcast Unresolved field. Conversely, to change from using a Cluster Broadcast variable to using a Cluster Broadcast reference, you must change the Cluster Broadcast Variable field to No and specify the Cluster Broadcast reference in the Cluster Broadcast field.</p> </div>
<p>Run with Highest Privileges</p>	<p>For Windows Agents; Execute the task using an elevated privileges token, rather than one subject to User Account Control (UAC) restrictions. An elevated token allows a process to execute with all the privileges available to its specified credentials. For example, a task executed with an administrative account will behave as though it received permission via a UAC dialog to perform a privileged operation.</p> <p>This option will not give a user account privileges that have are not already granted to it. For example, taking ownership of a file is a privileged operation by default. A task will still fail even with this option selected if it is run with a regular user account that has not been granted the ability to change file ownership.</p> <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>This option only will affect tasks executed on Windows systems that support User Account Control (UAC). It will have no affect on tasks run on Windows releases prior to Vista (for example, Windows XP, Server 2003).</p> </div>

<p>Interact with Desktop</p>	<p>If Universal Task Interact with Desktop Permitted system property = true; Specification for whether or not a task that runs an application with a GUI requires some manual actions from a user (for example, clicking buttons or entering values).</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>When using this option to display GUI applications on any version of Windows that enforces session 0 desktop isolation (that is, Windows Vista and later), the GUI will only be accessible from the interactive console session. Further, the task will execute using the credentials of the user logged into that session.</p> <p>This means that any GUI-based application executed via a Windows task will not be visible from a remote desktop session. It will be visible only from console of the interactive session that exists on the system itself (that is, the session you would see from a monitor attached directly to the Windows machine or by logging in via a VM's host UI).</p> </div>
<p>Create Console</p>	<p>If Interact with Desktop is enabled; Specification for whether or not to allocate a new console for the process, rather than having it inherit one.</p>
<p>Universal Task Details</p>	<p>This section contains assorted detailed information about the Agent.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>The fields in this section may have Read Only or Hidden restrictions applied to them, as specified in the Universal Template on which the Universal Task is based.</p> </div>

<p>(user-defined fields)</p>	<p>The Details for each Universal Task contains any editable fields that were created in the Universal Template on which the Universal Task type for that Universal Task is based. System-assigned variables that match these fields are provided for inclusion in the template script. When the task is run, it executes the script, and the variables are resolved to the values of their matching values in the task.</p> <p>There are eight types of user-defined fields that can appear in the Details of a Universal Task:</p> <ul style="list-style-type: none"> • Text <ul style="list-style-type: none"> • Normal text (for a single line of text) • Large Text (for multiple lines of text) • Integer • Boolean • Choice • Credential • Script • Array • Float <div style="border: 1px solid orange; padding: 10px; margin: 10px 0;"> <p>For Script-based Universal Tasks, Credentials Functions, Script Functions, SAP Connection Functions, and Database Connection Functions are fully supported within the Universal Template Script, and within any embedded Data scripts. For Extension-based Universal Tasks, these functions are also fully supported within the content of a Script field and within any embedded Data scripts.</p> </div> <p>For each type of field, default values, format, and/or limitations are specified in the Universal Template. In any Universal Task based on that Universal Template, you can override and/or define values - within the specified format and limitations - for those fields.</p> <ul style="list-style-type: none"> • If the Allow Empty Choice field was selected for a Choice field in the Universal Template on which this Universal Task was based, that Choice field in the task will include an empty (blank) selection. • If the Allow Multiple Choices field was selected for a Choice field in the Universal Template on which this Universal Task was based, that Choice field in the task will allow selection of more than one choice. When multiple choices are selected, the built-in field variable will resolve to a comma-delimited String of choice values. • Any field that has a Require If Field dependency on a Boolean field in the Universal Template on which the Universal Task is based will change from required to optional (or optional to required) when toggling the Boolean field checkbox, depending on the Require If Field Value(s). • Any field that has a Require If Field dependency on a Choice field in the Universal Template on which the Universal Task is based will become required when selecting a choice value specified in the Require If Field Value(s) and optional when selecting a choice value not specified in the Require If Field Value(s). • Any field that has a Show If Field dependency on a Boolean field in the Universal Template on which the Universal Task is based will change from visible to hidden (or hidden to visible) when toggling the Boolean field checkbox, depending on the Show If Field Value(s). • Any field that has a Show If Field dependency on a Choice field in the Universal Template on which the Universal Task is based will become visible when selecting a choice value specified in the Show If Field Value(s) and hidden when selecting a choice value not specified in the Show If Field Value(s). • Any field visible due to a Show If Field dependency in the Universal Template on which the Universal Task is based will display as required (bold label) if the Require If Visible option is specified for the Universal Template field; otherwise, it will display as optional (non-bold label). • By default, the column and row space occupied by a field remain reserved even when the field is hidden by a Show If Field dependency. To change the default behaviour, the No Space If Hidden option must be specified for the Universal Template field.
<p>Runtime Directory</p>	<p>Directory from which the application should be executed. Variables supported.</p>

Environment Variables	Allows you to enter environment variables needed by the program to run. To add a variable, click the + icon and enter a Name and Value . To delete a variable, select in the list of variables and click the - icon. You can add a maximum of 4,000 characters for the combined Names and Values of all variables. The variable is listed in the space underneath. <div style="border: 1px solid yellow; padding: 5px; margin-top: 10px;"> Credential Functions, Database Connection Functions, SAP Connection Functions, Script Functions, Output Path Functions, and Variable Path Functions are supported. </div>
Result Processing Details	This section contains assorted detailed information about result processing for this task.
Exit Code Processing	Specifies how the Controller should determine whether the executed command failed or completed successfully. Options: <ul style="list-style-type: none"> • Success Exitcode Range Command is considered completed successfully if its exit code falls within the range specified in the Exit Codes field. • Failure Exitcode Range Command is considered failed if its exit code falls within the range specified in the Exit Codes field. • Success Output Contains Command is considered completed successfully if its output contains the text specified in the Scan Output For field. • Failure Output Contains Command is considered failed if its output contains the text specified in the Scan Output For field. • Step Conditions (z/OS only) Command is considered completed successfully/failed if any of its specified condition codes falls within the range specified under the Step Conditions tab (see Creating Step Conditions).
Output Type	Required if Exit Code Processing = Success Output Contains or Failure Output Contains; type of output. Options: <ul style="list-style-type: none"> • Standard Output (STDOUT) • Standard Error (STDERR) • File • Extension
Content Type	If Output Type is Extension; Output type that the Result Processing mechanism should assume when evaluating the output. If the expected output is XML or JSON, it is valid to specify Text. However, when specifying XML or JSON, the output must be XML or JSON respectively; otherwise, the parsing will fail and the path expression evaluation will return no matches.
Path Expression	XPath Expression if Content Type is XML, or the JsonPath Expression if Content Type is JSON, to be used when evaluating the Extension output.
Operator	If Output Type is Extension; Condition Operator to evaluate in combination with the specified condition Value.
Value	If Output Type is Extension; Condition Value to evaluate in combination with the specified condition Operator.
Strategy	If Content Type is XML or JSON; Strategy to take when applying the condition Operator and Value against the Path Expression matches when Content Type is XML or JSON.
Auto Cleanup	Enables the auto cleanup of Extension output upon task instance completion or, if the task instance is within a workflow, when the top level workflow instance completes.

Scan Output For	Required if Exit Code Processing = Success Output Contains or Failure Output Contains; text for which the Controller should scan the output file. The Controller will process this field as a regular expression.
Output File (for Exit Code Processing)	Required if Output Type = File; path and file name of the output file that should be scanned for the text in the Scan Output For field.
Exit Codes	Required if Exit Code Processing = Success Exitcode Range or Failure Exitcode Range; range of exit codes. Format: Numeric. Use commas to list a series of exit codes; use hyphens to specify a range. Example: 1,5, 22-30. Variables are supported.
Automatic Output Retrieval	Specifies whether you want the Controller to automatically retrieve any output from the job and attach it to the task instance record. Options: <ul style="list-style-type: none"> • None Do not attach any output to the task instance record. • Standard Output Attach all standard output. • Standard Error Attach standard error output. • File Attach the file specified in the Output File field. • Standard Output/Error Attach all standard output and standard error output. <div style="border: 1px solid black; background-color: #ffff00; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>Tasks specifying Automatic Output Retrieval will fail with Start Failure if the Agent Output Prohibited field is true in the Details of the specified Agent.</p> </div>
Wait For Output	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error, and Failure Only is not enabled (checked); Specification that the task should wait for the requested output before completing.
Failure Only	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error, and Wait For Output is not enabled (checked); Indication for whether output should be retrieved on task failure only.
Start Line	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Instructs the Controller to retrieve data beginning at the line indicated. <ul style="list-style-type: none"> • If a Start Line value is not specified, the default is 1. • If the Start Line value is -1, data will be retrieved starting at the end of the file.
Number of Lines	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Allows you to limit the retrieved data to the number of lines specified. If a Number of Lines value is not specified, the default is the value of the Retrieve Output Default Number Of Lines Universal Controller system property.
Scan Text	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Regex pattern that the Controller will search for a match for in STDOUT/STDERR or a specified file. The Controller will include the Number of Lines above and below the first line matched. if the Regex pattern is not found, the following message is returned: OPSWISE WARNING - Scan text string not found.
Output File (for Automatic Output Retrieval)	Required if Automatic Output Retrieval = File; path and file name containing the output that you want automatically retrieved and attached to the task instance.
Retry Options	This section contains specifications for retrying the task.

Retry Exit Codes	<p>Exit code range for which an auto-retry of tasks in FAILED status will occur. Exit code ranges must be in the same format as ranges specified in the Exit Codes field. Maximum Retries must be greater than 0.</p> <p>If this field is empty, any exit code potentially will cause a retry.</p> <p>Variables are supported.</p>
Maximum Retries	User-defined; maximum number of times that the Controller should retry this task after it has started and gone to a failed state.
Retry Indefinitely	User-defined; indicates whether the Controller should continue trying indefinitely to run this task. If you enable this field, it overrides any value placed in the Maximum Retries field.
Retry Interval (Seconds)	User-defined; number of seconds between each retry.
Suppress Intermediate Failures	<p>User-defined; If the task instance is in the Failed status, indicates whether or not the following will be suppressed until all scheduled retry attempts (a Maximum Retries value has been entered or Retry Indefinitely has been enabled) have been made:</p> <ul style="list-style-type: none"> • All Actions (Abort, Email Notification, Set Variable, SNMP Notification, and System Operation) defined for the task instance on a Failed status. • Workflow conditional path processing; any Successors waiting on a failure path will not be released. • Task Monitors will not be notified of the Failed status. Also, any Task Monitor task that has a Time Scope in the past will disqualify any matching task instance in the past with a Failed status if the task instance is scheduled for automatic retry and for which Suppress Intermediate Failures has been enabled. • Any Workflow containing the Failed task instance will not transition to the Running/ Problems status.
Wait / Delay Options	This section contains specifications for waiting to start and/or delaying on start the task.
Wait To Start	<p>Amount of time to wait before starting a task from the time that it was launched.</p> <p>Options are:</p> <ul style="list-style-type: none"> • – None – • Time • Relative Time • Duration • Seconds
Wait Time	If Wait To Start = Time or Relative Time; Number of hours and minutes to wait before starting the task.

<p>Wait Day Constraint</p>	<p>If Wait Time = Time or Relative Time; Specification for whether or not to advance the wait time to another day.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • -- None -- <ul style="list-style-type: none"> • If Wait To Start = Time; Advance to the next day if the specified wait time is before the time that the task instance is eligible to start; that is, all dependencies have been met. For example: it is not being held, and it is not waiting on any predecessors. • If Wait To Start = Relative Time; Advance to the next day if the specified wait time is before the task instance Trigger Time or, if there is no Trigger Time, before the task instance Launch Time. In the latter case, when a task instance is within a workflow, it will inherit the Launch Time of the top-level parent workflow task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. <p>Default is -- None --.</p>
<p>Wait Duration</p>	<p>If Wait To Start = Duration; Number of days, hours, minutes, and seconds to wait before starting the task.</p>
<p>Wait Duration In Seconds</p>	<p>If Wait To Start = Seconds; Number of seconds to wait before starting the task.</p>
<p>Delay On Start</p>	<p>Amount of time to delay the start of a task, after it has been launched, from the time that it is eligible to start; that is, all dependencies have been met. For example: it is not being held, it is not waiting on any predecessors, or there is no wait time specified.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- None -- • Duration • Seconds
<p>Delay Duration</p>	<p>If Delay On Start = Duration; Number of days, hours, minutes, and seconds to delay after starting the task.</p>
<p>Delay Duration In Seconds</p>	<p>If Delay On Start = Seconds; Number of seconds to delay after starting the task.</p>

Workflow Only	<p>Specification for whether or not to apply the Wait To Start and Delay On Start specifications only if the task is in a Workflow.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- System Default -- Apply the Wait To Start and Delay On Start specifications as defined by the System Default Wait/Delay Workflow Only system property. (Default is yes.) • Yes Apply the Wait To Start and Delay On Start specifications only if the task is in a Workflow. • No Apply the Wait To Start and Delay On Start specifications whether or not the task is in a Workflow.
Time Options	This section contains time-related specifications for the task.
Late Start	<p>If enabled, and if the task instance starts after the time or period specified, the task instance is flagged as late. You can specify a time or duration to determine a late start (see Late Start Type). To determine whether a task instance started late, open the task instance and locate the Started Late field; the field is checked if the instance started after the specified time. The Started Late field displays in the task instance Details only if the user specified a Late Start in the task Details.</p>
Late Start Type	<p>Required if Late Start is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • Time - Flag the task if it starts after the specified time. • Duration - Flag the task if it starts a certain amount of time after the programmed start time. The task must have a specific start time.
Late Start Time	<p>If Late Start Type = Time; Time after which the task start time is considered late. Use HH:MM, 24-hour time.</p>
Late Start Day Constraint	<p>If Late Start Type = Time; Specification for whether or not to advance the late start time to another day.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified late start time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. <p>Default is -- None --.</p>
Late Start Nth Amount	<p>If Late Start Day Constraint = Nth Day; Number of days to advance.</p>

Late Start Duration	<p>If Late Start Type = Duration; Duration (amount of relative time) after which the task is considered to have started late.</p> <p>For a task within a workflow, the duration is the period between the time the workflow starts and the time the task itself starts. For example, a task might have a Late Start Duration of 60 minutes. If the workflow starts at 9:00 a.m. but the task itself does not start until 10:30, the task has started late.</p> <p>For a task that is not within a workflow, Late Start Duration has meaning only if the task has been held upon starting. For example, if a task has a Late Start Duration of 60 minutes and the Hold on Start field is enabled, if the task is not released from hold within the amount of time specified in the Late Start Duration field, the task has started late.</p>
Late Finish	<p>If enabled, and if the task instance finishes after the time or period specified, the task instance is flagged as late. You can specify a time or duration to determine a late finish (see Late Finish Type). To determine whether a task instance finished late, open the task instance and locate the Finished Late field; the field is checked if the instance finished after the specified time or lasted longer than expected. This field only appears on the task instance if the user specified a Late Finish in the task definition.</p>
Late Finish Type	<p>Required if Late Finish is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • Time - Flag the task if it finishes after the specified time (see Late Finish Time). • Duration - Flag the task if it finishes a certain amount of time after the programmed finish time (see Late Finish Duration). The task must have a specific finish time. • Average Duration - Flag the task if it finishes before the average duration (see Average Instance Time) for the task, less an offset (see Late Finish Offset Type), if specified.
Late Finish Offset Type	<p>If Late Finish Type = Average Duration;</p> <p>Options:</p> <ul style="list-style-type: none"> • Percentage • Duration
Late Finish Percentage Offset (+)	<p>Required if Late Finish Offset Type = <i>Percentage</i>; Percentage of Average Duration to use as an offset. The late finish time is calculated by adding the offset to the Average Duration.</p>
Late Finish Duration Offset (+)	<p>Required if Late Finish Offset Type = <i>Duration</i>; Duration to use as an offset. The late finish time is calculated by adding the offset to the Average Duration.</p>
Late Finish Duration Offset Unit	<p>If Late Finish Offset Type = Duration;</p> <p>Options:</p> <ul style="list-style-type: none"> • Seconds • Minutes • Hours
Late Finish Time	<p>If Late Finish Type = Time; Time after which the task finish time is considered late. Use HH:MM, 24-hour time.</p>

Late Finish Day Constraint	If Late Finish Type = Time; Specification for whether or not to advance the late finish time to another day. Valid values: <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified late finish time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. Default is -- None --.
Late Finish Nth Amount	If Late Finish Day Constraint = Nth Day; Number of days to advance.
Late Finish Duration	If Late Finish Type = Duration; Longest amount of time this task instance should take to run.
Early Finish	If enabled, and if the task instance finishes before the time or period specified, the task instance is flagged as early. You can specify a time or duration to determine an early finish (see Early Finish Type). To determine whether a task instance finished early, open the task instance and locate the Finished Early field; the field is checked if the instance finished before the specified time or did not last as long as expected. This field only appears on the task instance if the user added Early Finish specifications to the task definition.
Early Finish Type	Required if Early Finish is enabled. Options: <ul style="list-style-type: none"> • Time - Flag the task if it finishes before the specified time (see Early Finish Time). • Duration - Flag the task if it finishes a certain amount of time before the programmed finish time (see Early Finish Duration). The task must have a specific finish time. • Average Duration - Flag the task if it finishes before the average duration (see Average Instance Time) for the task, less an offset (see Early Finish Offset Type), if specified.
Early Finish Offset Type	If Early Finish Type = Average Duration; Options: <ul style="list-style-type: none"> • Percentage • Duration
Early Finish Percentage Offset (-)	Required if Early Finish Offset Type = <i>Percentage</i> ; Percentage of Average Duration to use as an offset. The early finish time is calculated by subtracting the offset from the Average Duration .
Early Finish Duration Offset (-)	Required if Early Finish Offset Type = <i>Duration</i> ; Duration to use as an offset. The early finish time is calculated by subtracting the offset from the Average Duration .

Early Finish Duration Offset Unit	If Early Finish Offset Type = Duration; Options: <ul style="list-style-type: none"> • Seconds • Minutes • Hours
Early Finish Time	If Early Finish Type = Time; Time before which the task finish time is considered early. That is, enter a time at which the task should still be running. Use HH:MM, 24-hour time.
Early Finish Day Constraint	If Early Finish Type = Time; Specification for whether or not to advance the early finish time to another day. Valid values: <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified early finish time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. Default is -- None --.
Early Finish Nth Amount	If Early Finish Day Constraint = Nth Day; Number of days to advance.
Early Finish Duration	If Early Finish Type = Duration; Shortest amount of time this task instance should take to run.
User Estimated Duration	Required if Early Finish Type or Late Finish Type = Average Duration; Estimated amount of time it should normally take to run this task. The Controller uses this information to calculate the User Estimated End Time on a task instance record. User Estimated Duration is used when the Average Duration is not available; for example, on the first launch of a task.
Critical Path Options	This section contains Critical Path-related specifications for the task.
CP Duration	Optional; Allows you to override the estimated Critical Path Duration of the task when running in a Workflow; used in conjunction with the CP Duration Unit field. In most cases, this field should be left blank, which implies that the Controller will estimate the Critical Path Duration based on historical executions. Valid values are any integer equal to or greater than 0. Variables and Functions are supported.
CP Duration (Resolved)	Displays the current resolved value of the CP Duration field, which may contain variables or functions that will be displayed as unresolved until the task instance starts. The CP Duration (Resolved) field can continue to change value until the task instance starts, at which time CP Duration will display as resolved and CP Duration (Resolved) will no longer be visible unless there was an issue resolving the variables and/or functions contained within CP Duration . If the Controller is unable to resolve CP Duration or it resolves to an invalid value, CP Duration will be ignored and the Controller will estimate the Critical Path Duration based on historical executions.

CP Duration Unit	<p>Type of CP Duration; used in conjunction with the CP Duration field. For example, for a CP Duration of two minutes, specify 2 in the CP Duration field and select Minutes in this field.</p> <p>Options:</p> <ul style="list-style-type: none"> • Seconds • Minutes • Hours <p>Default is Minutes.</p>
Workflow Execution Options	This section contains Execution Restriction specifications for the task if it is within a Workflow.
Execution Restriction	<p>Specification for whether or not there is a restriction for this task to be run, skipped, or held.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- None -- No restriction for this task. • Run Restriction for when this task will be run. • Skip Restriction for when this task will be skipped. • Hold Restriction for when this task will be held. <p>If Execution Restriction on a task is Run or Skip, then when it is part of a Workflow that is being launched, the Restriction Period is evaluated. The task instance will be skipped if Execution Restriction is Skip and the date is within the Restriction Period or Execution Restriction is Run and the date is not within the Restriction Period. Execution Restriction can be set to Skip with a Restriction Period of - None -, meaning the restriction is always active and the task will be skipped when it is part of a Workflow.</p>
Restriction Period	<p>If Execution Restriction = Run, Skip, or Hold; Period of time when the task is restricted.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- None -- No period of restriction for this task. • Before Restriction is valid if the date is before the Before Date value. • After Restriction is valid if the date is after the After Date value. • Span Restriction is valid if the date is before the Before Date value and after After Date value. • On Restriction is valid if the date is one of the Date List values.
Before Date	If Restriction Period = Before or Span; Date before which the restriction is valid.
Before Time	If Restriction Period = Before or Span; Time on the selected date before which the restriction is valid.
After Date	If Restriction Period = After or Span; Date after which the restriction is valid.
After Time	If Restriction Period = After or Span; Time on the selected date after which the restriction is valid.
Date List	If Restriction Period = On; Date(s) on which the restriction is valid.
Self-Service Options	This section contains Self-Service specifications for the task.
Enforce Variables	Specifies whether or not to enforce Launch with Variables... when launching a task using the User Interface.
Lock Variables	Specifies whether or not to prevent editing variables when using Launch with Variables... from the User Interface.
Statistics	This section contains time-related statistics for task instances of the task.
First Execution	System-supplied; End Time of the first instance of this task to complete.

Last Execution	System-supplied; End Time of the last instance of this task to complete.
Last Instance Duration	System-supplied; Amount of time the task took to run the last time it ran.
Lowest Instance Time	System-supplied; Lowest amount of time this task has taken to run.
Average Instance Time	System-supplied; Average amount of time this task takes to run.
Highest Instance Time	System-supplied; Highest amount of time this task has taken to run.
Number of Instances	System-supplied; Number of instances in the database for this task.
Metadata	This section contains Metadata information about this record.
UUID	Universally Unique Identifier of this record.
Updated By	Name of the user that last updated this record.
Updated	Date and time that this record was last updated.
Created By	Name of the user that created this record.
Created	Date and time that this record was created.
Buttons	This section identifies the buttons displayed above and below the Task Details that let you perform various actions.
Save	Saves a new task record in the Controller database.
Save & New	Saves a new record in the Controller database and redisplay empty Details so that you can create another new record.
Save & View	Saves a new record in the Controller database and continues to display that record.
New	Displays empty (except for default values) Details for creating a new task.
Update	Saves updates to the record.
Launch	Manually launches the task.
View Parents	Displays a list of any parent Workflow tasks for this task.
Copy	Creates a copy of this task, which you are prompted to rename.
Delete	Deletes the current record. <div style="border: 2px solid orange; padding: 10px;"> <p>Note</p> <p>You cannot delete a task if it is either:</p> <ul style="list-style-type: none"> • Specified in an enabled Trigger. • The only task specified in a disabled Trigger. </div>
Refresh	Refreshes any dynamic data displayed in the Details.
Close	For pop-up view only; closes the pop-up view of this task.

Tabs	This section identifies the tabs across the top of the Task Details that provide access to additional information about the task.										
Variables	Lists all user-defined variables associated with this record; that is, variables that have been defined for this specific record.										
Actions	<p>Allows you to specify actions that the Controller will take automatically based on events that occur during the execution of this task.</p> <p>Events are:</p> <ul style="list-style-type: none"> • Task instance status • Exit codes • Late start • Late finish • Early finish <p>Actions are:</p> <table border="1"> <tr> <td>Abort Action</td> <td>Abort the task if certain events occur. For details, see Abort Actions.</td> </tr> <tr> <td>Email Notification</td> <td>Send an email if certain events occur. For details, see Email Notification Actions.</td> </tr> <tr> <td>Set Variable</td> <td>Used in tasks and workflows to set a variable based on the occurrence of certain events. For details, see Creating a Set Variable Action within a Task or Workflow.</td> </tr> <tr> <td>SNMP Notification</td> <td>Send an email if certain events occur. For details, see SNMP Notification Actions.</td> </tr> <tr> <td>System Operation</td> <td>Run an Universal Controller system operation based on specified conditions. For details, see System Operation Actions.</td> </tr> </table>	Abort Action	Abort the task if certain events occur. For details, see Abort Actions .	Email Notification	Send an email if certain events occur. For details, see Email Notification Actions .	Set Variable	Used in tasks and workflows to set a variable based on the occurrence of certain events. For details, see Creating a Set Variable Action within a Task or Workflow .	SNMP Notification	Send an email if certain events occur. For details, see SNMP Notification Actions .	System Operation	Run an Universal Controller system operation based on specified conditions. For details, see System Operation Actions .
Abort Action	Abort the task if certain events occur. For details, see Abort Actions .										
Email Notification	Send an email if certain events occur. For details, see Email Notification Actions .										
Set Variable	Used in tasks and workflows to set a variable based on the occurrence of certain events. For details, see Creating a Set Variable Action within a Task or Workflow .										
SNMP Notification	Send an email if certain events occur. For details, see SNMP Notification Actions .										
System Operation	Run an Universal Controller system operation based on specified conditions. For details, see System Operation Actions .										
Virtual Resources	<p>Lists all Virtual Resources to which this task is assigned.</p> <p>If you want to create a Task Virtual Resource for this task, you can select an existing Virtual Resource (or, optionally, first create a new Virtual Resource and then select it as the Task Virtual Resource) or enter a Virtual Resource variable. The variable must be a supported type as described in Variables and Functions.</p>										
Mutually Exclusive	Lists all tasks that have been set to be mutually exclusive of this task.										
Instances	Lists all instances of the task.										
Triggers	List of all triggers that reference this task in the Task(s) field of the trigger Details; that is, a list of all triggers that have been defined to launch this task. Also allows you to add new triggers. If you add a new trigger from this location, the Controller automatically constructs a default trigger name as follows: <current task name>#TRIGGER#. You can change the default name if desired. For instructions on creating triggers, see Triggers .										
Notes	Lists all notes associated with this record.										
Versions	Stores copies of all previous versions of the current record. See Record Versioning .										

5.4 Viewing a Universal Task Instance

When a Universal Task is launched, the Controller creates a task instance record of that task.

A task instance contains detailed information about a single execution of that task.

You can access a task instance from:

- **Instances tab** on the [Universal Task Details](#) for that task
- [Activity Monitor](#)
- [Task Instances list](#)

5.4.1 Universal Task Instance Details

The following Universal Task Instance Details contains information on the execution of the task shown in the [Universal Task Details](#).

Re-run ▾ Retrieve Output...

UNV1 Task Instance
• Actions
• Virtual Resources
• Exclusive Requests
• Output
• Notes

General

Instance Name	Instance Number
UNV1	1
Description	
Member of Business Services	
Task	Source Version
UNV1	12
Launch Source	
Launch Task / User Interface	
Invoked By	Execution User
Manually Launched	Admin
Calendar	Time Zone Preference
System Default	-- System Default --
Virtual Resource Priority	Hold Resources on Failure
10	<input type="checkbox"/>
Mutually Exclusive With Self	Simulate
<input type="checkbox"/>	<input type="checkbox"/>
Previous Instance Wait Resolved	
-- None --	

Status

Status	Exit Code
Finished	0
Status Description	
Universal Template "UNV1" prohibits execution on agent type Linux/Unix. -> State was forced from UNDELIVERABLE to FINISHED	
Progress	
100%	
Operational Memo	
Trigger Time	Launch Time
	2023-09-29 11:58:42 -0400
Wait Until Time	Queued Time
Start Time	End Time
	2023-09-29 11:58:49 -0400
Duration	CPU Time
	0
Process ID	

Agent Details

Cluster	<input checked="" type="checkbox"/>
Agent	Agent Variable
	<input type="checkbox"/>
Agent Cluster *	Agent Cluster Variable
UnvLinuxCluster	<input checked="" type="checkbox"/>
Credentials	Credentials Variable
	<input type="checkbox"/>
Run with Highest Privileges	
<input type="checkbox"/>	

UNV1 Details

Message	Array
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5.4.2 Universal Task Instance Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in Universal Task Instance Details.

Field Name	Description
General	This section contains general information about the task instance.
Instance Name	Name of this task instance.
Instance Number	System-supplied; Sequentially assigned number, maintained per task, representing the creation order of the instance.
Description	Description of this record. (Maximum = 255 characters.)
Member of Business Services	<p>User-defined; Allows you to select one or more Business Services that this record belongs to. (You also can Check All or Uncheck All Business Services for this record.)</p> <p>You can select up to 62 Business Services for any record type, and enter a maximum of 2048 characters for each Business Service.</p> <p>If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles, Business Services available for selection may be restricted.</p>
Task	Name of the task that was run to create this task instance. Click the icon to display Task Details for the task.
Source Version	Version of the task that was run to create this task instance.

<p>Launch Source</p>	<p>System-supplied; Source from which this task was launched.</p> <p>Options:</p> <ul style="list-style-type: none"> • Scheduled Trigger If the instance was directly launched by a scheduled trigger, the Trigger (trigger_id) column is assigned the UUID of the scheduled trigger. • Trigger Monitor If the instance is a monitor associated with monitor trigger, the Trigger (trigger_id) column is assigned the UUID of the monitor trigger. • Trigger Now / User Interface If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger. • Trigger Now / System Operation If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger and the Source Instance (source_instance) column will be assigned the UUID of the instance invoking the System Operation. • Trigger Now / Web Service If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger. • Trigger Now / Command Line If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger. • Workflow If the instance was launched by a workflow, the Workflow (workflow_id) column is assigned the UUID of the workflow instance. Likewise, the Source Instance (source_instance) column will also be assigned the UUID of the workflow instance. • Launch Task / User Interface If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be null. • Launch Task / System Operation If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be assigned the UUID of the instance invoking the System Operation. • Launch Task / Web Service If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be null. • Launch Task / Command Line If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be null. • Recurring If the instance was directly launched by a Recurring Task Instance, the Source Instance (source_instance) column will be assigned the UUID of the Recurring Task Instance.
<p>Source Instance</p>	<p>System-supplied; UUID of the source instance.</p> <ul style="list-style-type: none"> • If the instance was directly launched by a Trigger Now command; the UUID of the instance invoking the System Operation. • If the instance was launched by a workflow; the UUID of the workflow instance. • If the instance was directly launched by the Launch Task command; the UUID of the instance invoking the System Operation. • If the instance was directly launched by a Recurring Task Instance; the UUID of the Recurring Task Instance.
<p>Invoked by</p>	<p>System-supplied; how the task instance was launched.</p> <p>Options:</p> <ul style="list-style-type: none"> • Trigger: (Trigger Name) Instance was launched by the named trigger. • Workflow: (Workflow Name) Instance was launched by the named workflow. • Manually Launched Instance was launched by a user. To identify the user, check the Execution User column for that task instance on the Task Instances screen or, on most task instance screens, the Execution User field.

Execution User	System-supplied; If the task was launched manually; ID of the user who launched it.
Calendar	Calendar associated with the task instance.
Time Zone Preference	<p>User-defined; Allows you to specify the time zone that will be applied to the task.</p> <p>Options:</p> <ul style="list-style-type: none"> • – System Default – Time zone is based on the value of the Task Time Zone Preference Universal Controller system property: Server or Inherited. • Server (xxx) Where (xxx) is the time zone ID of the server; time zone is evaluated in the time zone of the server. • Inherited Time zone is evaluated in the time zone of the Parent Workflow or Trigger / Launch specification in the case there is no Parent Workflow.
Virtual Resource Priority	<p>Priority for acquiring a resource when two or more tasks are waiting for the resource. This priority applies to all resources required by the task.</p> <p>Options: 1 (high) - 100 (low).</p> <p>Default is 10.</p>
Hold Resources on Failure	If enabled, the task instance will continue to hold Renewable resources if the task instance fails. Renewable resources will be returned only if the task instance status is either Complete, Finished, or Skipped.
Status	This section contains information about the current status of the task instance.
Status	System-supplied; see Task Instance Statuses .
Exit Code	System-supplied; the exit code captured by the Agent when executing the task (for example, a command or script).
Status Description	System-supplied; additional information, if any, about the status of the task instance.
Operational Memo	User-defined operational memo.
Evaluation Time	If time zone of user is different than time zone of task instance; Time at which Execution Restrictions and Run Criteria were evaluated based upon the requested time zone. (Time zone of task instance displays in parentheses.)
Critical	Indicates that this task is in the Critical Path of a workflow.
Critical Endpoint	Indicates that this task was defined as a Critical Endpoint of a Critical Path in a workflow.
Wait Until Time	Amount of time calculated to wait before the task was started, based on Wait To Start and Delay On Start times.
Queued Time	System-supplied; Date and time the task was queued for processing.
Trigger Time	System-supplied; Date and time the task instance was triggered.
Launch Time	System-supplied; Date and time the task instance was launched.
Start Time	System-supplied; Date and time the task instance started.
End Time	System-supplied; Date and time the task instance completed.
Duration	System-supplied; amount of time the task instance took to run.
CPU Time	System-supplied; amount of CPU time the task took to run.

CPU Time	System-supplied; amount of CPU time the task took to run.
Process ID	System-supplied; ID of the process that was launched.
Agent Details	This section contains assorted detailed information about the Agent.
Agent	Name of the Agent resource that identifies the machine where the operation will run. If you do not specify an Agent, you must specify an Agent Cluster .
Agent Cluster	If Cluster is selected and Broadcast is not selected; Group of Agents, one of which the Controller will choose to run this task (compare with Cluster Broadcast). You can specify an agent cluster in addition to or in place of a specific Agent. If you specify an Agent and an agent cluster, the Controller first tries to run the task on the specific agent. If the Agent is not available, the Controller reverts to the agent cluster. See Agent Clusters for more information.
Agent Variable	<p>Indication of whether the Agent field is a reference field for selecting a specific Agent (unchecked) or a text field for specifying the Agent as a variable (checked). Use the format: <code>\${variable name}</code>. The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using an Agent reference to using an Agent variable, you must change the Agent Variable field to Yes and specify the Agent variable in the Agent Unresolved field. Conversely, to change from using an Agent variable to using an Agent reference, you must change the Agent Variable field to No and specify the Agent reference in the Agent field.</p> </div>
Agent Cluster Variable	<p>Indication of whether the Agent Cluster field is a reference field for selecting a specific Agent Cluster (unchecked) or a text field for specifying the Agent Cluster as a variable (checked). Use the format: <code>\${variable name}</code>.</p> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using an Agent Cluster reference to using an Agent Cluster variable, you must change the Agent Cluster Variable field to Yes and specify the Agent Cluster variable in the Agent Cluster Unresolved field. Conversely, to change from using an Agent Cluster variable to using an Agent Cluster reference, you must change the Agent Cluster Variable field to No and specify the Agent Cluster reference in the Agent Cluster field.</p> </div>
Credentials	<p>Credentials under which an Agent runs this task. These Credentials override any Credentials provided in the Agent Details for any Agent running this task.</p> <p>If the user does not have a login shell, add a - character in front of the runtime credentials name. The Controller will provide a shell for that user and strip the - character from the name.</p> <p>Required if the Agent Credentials Required Universal Controller system property is true. When required, if the Credential is specified as a variable, and the variable resolves to blank, a Start Failure will occur.</p>

<p>Credentials Variable</p>	<p>Indication of whether the Credentials field is a reference field for selecting a specific Credential (unchecked) or a text field for specifying the Credential as a variable (checked). Use the format: <code>#{variable name}</code>.</p> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Credentials reference to using a Credentials variable, you must change the Credentials Variable field to Yes and specify the Credentials variable in the Credentials Unresolved field. Conversely, to change from using a Credentials variable to using a Credentials reference, you must change the Credentials Variable field to No and specify the Credentials reference in the Credentials field.</p> </div>
<p>Cluster Broadcast</p>	<p>Group of Agents, all of which will run this task (compare with Agent Cluster). If Broadcast is selected for a task, you must select a Cluster Broadcast instead of a specific Agent and/or agent cluster. Each instance of the task running on its own Agent becomes a separate task instance record in the database and displays separately on the Activity Monitor.</p>
<p>Cluster Broadcast Variable</p>	<p>Indication of whether the Cluster Broadcast field is a reference field for selecting a specific Cluster Broadcast (unchecked) or a text field for specifying the Cluster Broadcast as a variable (checked). Use the format: <code>\$(variable name)</code>.</p> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Cluster Broadcast reference to using a Cluster Broadcast variable, you must change the Cluster Broadcast Variable field to Yes and specify the Cluster Broadcast variable in the Cluster Broadcast Unresolved field. Conversely, to change from using a Cluster Broadcast variable to using a Cluster Broadcast reference, you must change the Cluster Broadcast Variable field to No and specify the Cluster Broadcast reference in the Cluster Broadcast field.</p> </div>
<p>Run with Highest Privileges</p>	<p>For Windows Agents; Execute the task using an elevated privileges token, rather than one subject to User Account Control (UAC) restrictions. An elevated token allows a process to execute with all the privileges available to its specified credentials. For example, a task executed with an administrative account will behave as though it received permission via a UAC dialog to perform a privileged operation.</p> <p>This option will not give a user account privileges that have are not already granted to it. For example, taking ownership of a file is a privileged operation by default. A task will still fail even with this option selected if it is run with a regular user account that has not been granted the ability to change file ownership.</p> <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>This option only will affect tasks executed on Windows systems that support User Account Control (UAC). It will have no affect on tasks run on Windows releases prior to Vista (for example, Windows XP, Server 2003).</p> </div>

<p>Interact with Desktop</p>	<p>If Universal Task Interact with Desktop Permitted system property = true; Specification for whether or not a task that runs an application with a GUI requires some manual actions from a user (for example, clicking buttons or entering values).</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>When using this option to display GUI applications on any version of Windows that enforces session 0 desktop isolation (that is, Windows Vista and later), the GUI will only be accessible from the interactive console session. Further, the task will execute using the credentials of the user logged into that session.</p> <p>This means that any GUI-based application executed via a Windows task will not be visible from a remote desktop session. It will be visible only from console of the interactive session that exists on the system itself (that is, the session you would see from a monitor attached directly to the Windows machine or by logging in via a VM's host UI).</p> </div>
<p>Create Console</p>	<p>If Interact with Desktop is enabled; Specification for whether or not to allocate a new console for the process, rather than having it inherit one.</p>
<p>Universal Task Details</p>	<p>This section contains assorted detailed information about the Agent.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>The fields in this section may have Read Only or Hidden restrictions applied to them, as specified in the Universal Template on which the Universal Task is based.</p> </div>

<p>(user-defined fields)</p>	<p>The Details for each Universal Task contains any editable fields that were created in the Universal Template on which the Universal Task type for that Universal Task is based. System-assigned variables that match these fields are provided for inclusion in the template script. When the task is run, it executes the script, and the variables are resolved to the values of their matching values in the task.</p> <p>There are eight types of user-defined fields that can appear in the Details of a Universal Task:</p> <ul style="list-style-type: none"> • Text <ul style="list-style-type: none"> • Normal text (for a single line of text) • Large Text (for multiple lines of text) • Integer • Boolean • Choice • Credential • Script • Array • Float <div style="border: 1px solid orange; padding: 10px; margin: 10px 0;"> <p>For Script-based Universal Tasks, Credentials Functions, Script Functions, SAP Connection Functions, and Database Connection Functions are fully supported within the Universal Template Script, and within any embedded Data scripts. For Extension-based Universal Tasks, these functions are also fully supported within the content of a Script field and within any embedded Data scripts.</p> </div> <p>For each type of field, default values, format, and/or limitations are specified in the Universal Template. In any Universal Task based on that Universal Template, you can override and/or define values - within the specified format and limitations - for those fields.</p> <ul style="list-style-type: none"> • If the Allow Empty Choice field was selected for a Choice field in the Universal Template on which this Universal Task was based, that Choice field in the task will include an empty (blank) selection. • If the Allow Multiple Choices field was selected for a Choice field in the Universal Template on which this Universal Task was based, that Choice field in the task will allow selection of more than one choice. When multiple choices are selected, the built-in field variable will resolve to a comma-delimited String of choice values. • Any field that has a Require If Field dependency on a Boolean field in the Universal Template on which the Universal Task is based will change from required to optional (or optional to required) when toggling the Boolean field checkbox, depending on the Require If Field Value(s). • Any field that has a Require If Field dependency on a Choice field in the Universal Template on which the Universal Task is based will become required when selecting a choice value specified in the Require If Field Value(s) and optional when selecting a choice value not specified in the Require If Field Value(s). • Any field that has a Show If Field dependency on a Boolean field in the Universal Template on which the Universal Task is based will change from visible to hidden (or hidden to visible) when toggling the Boolean field checkbox, depending on the Show If Field Value(s). • Any field that has a Show If Field dependency on a Choice field in the Universal Template on which the Universal Task is based will become visible when selecting a choice value specified in the Show If Field Value(s) and hidden when selecting a choice value not specified in the Show If Field Value(s). • Any field visible due to a Show If Field dependency in the Universal Template on which the Universal Task is based will display as required (bold label) if the Require If Visible option is specified for the Universal Template field; otherwise, it will display as optional (non-bold label). • By default, the column and row space occupied by a field remain reserved even when the field is hidden by a Show If Field dependency. To change the default behaviour, the No Space If Hidden option must be specified for the Universal Template field.
<p>Runtime Directory</p>	<p>Directory from which the application should be executed. Variables supported.</p>

Environment Variables	Allows you to enter environment variables needed by the program to run. To add a variable, click the + icon and enter a Name and Value . To delete a variable, select in the list of variables and click the - icon. You can add a maximum of 4,000 characters for the combined Names and Values of all variables. The variable is listed in the space underneath. <div style="border: 1px solid yellow; padding: 5px; margin-top: 10px;"> Credential Functions, Database Connection Functions, SAP Connection Functions, Script Functions, Output Path Functions, and Variable Path Functions are supported. </div>
Result Processing Details	This section contains assorted detailed information about result processing for this task.
Exit Code Processing	Specifies how the Controller should determine whether the executed command failed or completed successfully. Options: <ul style="list-style-type: none"> • Success Exitcode Range Command is considered completed successfully if its exit code falls within the range specified in the Exit Codes field. • Failure Exitcode Range Command is considered failed if its exit code falls within the range specified in the Exit Codes field. • Success Output Contains Command is considered completed successfully if its output contains the text specified in the Scan Output For field. • Failure Output Contains Command is considered failed if its output contains the text specified in the Scan Output For field. • Step Conditions (z/OS only) Command is considered completed successfully/failed if any of its specified condition codes falls within the range specified under the Step Conditions tab (see Creating Step Conditions).
Output Type	Required if Exit Code Processing = Success Output Contains or Failure Output Contains; type of output. Options: <ul style="list-style-type: none"> • Standard Output (STDOUT) • Standard Error (STDERR) • File • Extension
Content Type	If Output Type is Extension; Output type that the Result Processing mechanism should assume when evaluating the output. If the expected output is XML or JSON, it is valid to specify Text. However, when specifying XML or JSON, the output must be XML or JSON respectively; otherwise, the parsing will fail and the path expression evaluation will return no matches.
Path Expression	XPath Expression if Content Type is XML, or the JsonPath Expression if Content Type is JSON, to be used when evaluating the Extension output.
Operator	If Output Type is Extension; Condition Operator to evaluate in combination with the specified condition Value.
Value	If Output Type is Extension; Condition Value to evaluate in combination with the specified condition Operator.
Strategy	If Content Type is XML or JSON; Strategy to take when applying the condition Operator and Value against the Path Expression matches when Content Type is XML or JSON.
Auto Cleanup	Enables the auto cleanup of Extension output upon task instance completion or, if the task instance is within a workflow, when the top level workflow instance completes.

Scan Output For	Required if Exit Code Processing = Success Output Contains or Failure Output Contains; text for which the Controller should scan the output file. The Controller will process this field as a regular expression.
Output File (for Exit Code Processing)	Required if Output Type = File; path and file name of the output file that should be scanned for the text in the Scan Output For field.
Exit Codes	Required if Exit Code Processing = Success Exitcode Range or Failure Exitcode Range; range of exit codes. Format: Numeric. Use commas to list a series of exit codes; use hyphens to specify a range. Example: 1,5, 22-30. Variables are supported.
Automatic Output Retrieval	Specifies whether you want the Controller to automatically retrieve any output from the job and attach it to the task instance record. Options: <ul style="list-style-type: none"> • None Do not attach any output to the task instance record. • Standard Output Attach all standard output. • Standard Error Attach standard error output. • File Attach the file specified in the Output File field. • Standard Output/Error Attach all standard output and standard error output. <div style="border: 1px solid black; background-color: #ffff00; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>Tasks specifying Automatic Output Retrieval will fail with Start Failure if the Agent Output Prohibited field is true in the Details of the specified Agent.</p> </div>
Wait For Output	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error, and Failure Only is not enabled (checked); Specification that the task should wait for the requested output before completing.
Failure Only	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error, and Wait For Output is not enabled (checked); Indication for whether output should be retrieved on task failure only.
Start Line	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Instructs the Controller to retrieve data beginning at the line indicated. <ul style="list-style-type: none"> • If a Start Line value is not specified, the default is 1. • If the Start Line value is -1, data will be retrieved starting at the end of the file.
Number of Lines	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Allows you to limit the retrieved data to the number of lines specified. If a Number of Lines value is not specified, the default is the value of the Retrieve Output Default Number Of Lines Universal Controller system property.
Scan Text	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Regex pattern that the Controller will search for a match for in STDOUT/STDERR or a specified file. The Controller will include the Number of Lines above and below the first line matched. if the Regex pattern is not found, the following message is returned: OPSWISE WARNING - Scan text string not found.
Output File (for Automatic Output Retrieval)	Required if Automatic Output Retrieval = File; path and file name containing the output that you want automatically retrieved and attached to the task instance.
Retry Options	This section contains specifications for retrying the task.

Retry Exit Codes	<p>Exit code range for which an auto-retry of tasks in FAILED status will occur. Exit code ranges must be in the same format as ranges specified in the Exit Codes field. Maximum Retries must be greater than 0.</p> <p>If this field is empty, any exit code potentially will cause a retry.</p> <p>Variables are supported.</p> <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>If you are updating a task instance, the Retry Exit Codes field must be resolved; you cannot change the value to a variable.</p> </div>
Maximum Retries	User-defined; maximum number of times that the Controller should retry this task after it has started and gone to a failed state.
Retry Indefinitely	User-defined; indicates whether the Controller should continue trying indefinitely to run this task. If you enable this field, it overrides any value placed in the Maximum Retries field.
Retry Interval (Seconds)	User-defined; number of seconds between each retry.
Current Retry Count	System-supplied; current number of times that the Controller has retried the task after it first went to failure status.
Suppress Intermediate Failures	User-defined; If the task instance is in the Failed status , indicates whether or not the following will be suppressed until all scheduled retry attempts (a Maximum Retries value has been entered or Retry Indefinitely has been enabled) have been made: <ul style="list-style-type: none"> • All Actions (Abort, Email Notification, Set Variable, SNMP Notification, and System Operation) defined for the task instance on a Failed status. • Workflow conditional path processing; any Successors waiting on a failure path will not be released. • Task Monitors will not be notified of the Failed status. Also, any Task Monitor task that has a Time Scope in the past will disqualify any matching task instance in the past with a Failed status if the task instance is scheduled for automatic retry and for which Suppress Intermediate Failures has been enabled. • Any Workflow containing the Failed task instance will not transition to the Running/Problems status.
Next Retry Time	System-supplied for a task instance in the Failed status that is scheduled for automatic retry; Next time that a retry will be made. If a task instance is not scheduled for automatic retry, Next Retry Time does not display in the task instance Details.
Wait / Delay Options	This section contains specifications for waiting to start and/or delaying on start the task.
Wait To Start	Amount of time to wait before starting a task from the time that it was launched. <p>Options are:</p> <ul style="list-style-type: none"> • – None – • Time • Relative Time • Duration • Seconds
Wait Time	If Wait To Start = Time or Relative Time; Number of hours and minutes to wait before starting the task.

Wait Day Constraint	<p>If Wait Time = Time or Relative Time; Specification for whether or not to advance the wait time to another day.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • -- None -- <ul style="list-style-type: none"> • If Wait To Start = Time; Advance to the next day if the specified wait time is before the time that the task instance is eligible to start; that is, all dependencies have been met. For example: it is not being held, and it is not waiting on any predecessors. • If Wait To Start = Relative Time; Advance to the next day if the specified wait time is before the task instance Trigger Time or, if there is no Trigger Time, before the task instance Launch Time. In the latter case, when a task instance is within a workflow, it will inherit the Launch Time of the top-level parent workflow task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. <p>Default is -- None --.</p>
Wait Duration	<p>If Wait To Start = Duration; Number of days, hours, minutes, and seconds to wait before starting the task.</p>
Wait Duration In Seconds	<p>If Wait To Start = Seconds; Number of seconds to wait before starting the task.</p>
Delay On Start	<p>Amount of time to delay the start of a task, after it has been launched, from the time that it is eligible to start; that is, all dependencies have been met. For example: it is not being held, it is not waiting on any predecessors, or there is no wait time specified.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- None -- • Duration • Seconds
Delay Duration	<p>If Delay On Start = Duration; Number of days, hours, minutes, and seconds to delay after starting the task.</p>
Delay Duration In Seconds	<p>If Delay On Start = Seconds; Number of seconds to delay after starting the task.</p>
Time Options	This section contains time-related specifications for the task instance.
Late Start	<p>If enabled, and if the task instance starts after the time or period specified, the task instance is flagged as late. You can specify a time or duration to determine a late start (see Late Start Type). To determine whether a task instance started late, open the task instance and locate the Started Late field; the field is checked if the instance started after the specified time. The Started Late field displays in the task instance Details only if the user specified a Late Start in the task Details.</p>

Started Late	System-supplied; this field is flagged if the task started later than the time specified in the Late Start fields.
Late Start Type	Required if Late Start is enabled. Options: <ul style="list-style-type: none"> • Time - Flag the task if it starts after the specified time. • Duration - Flag the task if it starts a certain amount of time after the programmed start time. The task must have a specific start time.
Late Start Time	If Late Start Type = Time; Time after which the task start time is considered late. Use HH:MM, 24-hour time.
Late Start Day Constraint	If Late Start Type = Time; Specification for whether or not to advance the late start time to another day. Valid values: <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified late start time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. Default is -- None --.
Late Start Nth Amount	If Late Start Day Constraint = Nth Day; Number of days to advance.
Late Start Duration	If Late Start Type = Duration; Duration (amount of relative time) after which the task is considered to have started late. For a task within a workflow, the duration is the period between the time the workflow starts and the time the task itself starts. For example, a task might have a Late Start Duration of 60 minutes. If the workflow starts at 9:00 a.m. but the task itself does not start until 10:30, the task has started late. For a task that is not within a workflow, Late Start Duration has meaning only if the task has been held upon starting. For example, if a task has a Late Start Duration of 60 minutes and the Hold on Start field is enabled, if the task is not released from hold within the amount of time specified in the Late Start Duration field, the task has started late.
Computed Late Start Time	If Late Start is enabled, the computed Date/Time for when the task instance will be Late Started.
Late Finish	If enabled, and if the task instance finishes after the time or period specified, the task instance is flagged as late. You can specify a time or duration to determine a late finish (see Late Finish Type). To determine whether a task instance finished late, open the task instance and locate the Finished Late field; the field is checked if the instance finished after the specified time or lasted longer than expected. This field only appears on the task instance if the user specified a Late Finish in the task definition.

Finished Late	System-supplied; this field is flagged if the task finished later than the time or duration specified in the Late Finish fields.
Late Finish Type	Required if Late Finish is enabled. Options: <ul style="list-style-type: none"> • Time - Flag the task if it finishes after the specified time (see Late Finish Time). • Duration - Flag the task if it finishes a certain amount of time after the programmed finish time (see Late Finish Duration). The task must have a specific finish time. • Average Duration - Flag the task if it finishes before the average duration (see Average Instance Time) for the task, less an offset (see Late Finish Offset Type), if specified.
Late Finish Offset Type	If Late Finish Type = Average Duration; Options: <ul style="list-style-type: none"> • Percentage • Duration
Late Finish Percentage Offset (+)	Required if Late Finish Offset Type = <i>Percentage</i> ; Percentage of Average Duration to use as an offset. The late finish time is calculated by adding the offset to the Average Duration .
Late Finish Duration Offset (+)	Required if Late Finish Offset Type = <i>Duration</i> ; Duration to use as an offset. The late finish time is calculated by adding the offset to the Average Duration .
Late Finish Duration Offset Unit	If Late Finish Offset Type = Duration; Options: <ul style="list-style-type: none"> • Seconds • Minutes • Hours
Late Finish Time	If Late Finish Type = Time; Time after which the task finish time is considered late. Use HH:MM, 24-hour time.
Late Finish Day Constraint	If Late Finish Type = Time; Specification for whether or not to advance the late finish time to another day. Valid values: <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified late finish time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. Default is -- None --.
Late Finish Nth Amount	If Late Finish Day Constraint = Nth Day; Number of days to advance.

Late Finish Duration	If Late Finish Type = Duration; Longest amount of time this task instance should take to run.
Computed Late Finish Time	If Late Finish is enabled, the computed Date/Time for when the task instance will be Late Finished.
Early Finish	If enabled, and if the task instance finishes before the time or period specified, the task instance is flagged as early. You can specify a time or duration to determine an early finish (see Early Finish Type). To determine whether a task instance finished early, open the task instance and locate the Finished Early field; the field is checked if the instance finished before the specified time or did not last as long as expected. This field only appears on the task instance if the user added Early Finish specifications to the task definition.
Finished Early	System-supplied; this field is flagged if the task finished earlier than the time specified in the Early Finish fields.
Early Finish Type	Required if Early Finish is enabled. Options: <ul style="list-style-type: none"> • Time - Flag the task if it finishes before the specified time (see Early Finish Time). • Duration - Flag the task if it finishes a certain amount of time before the programmed finish time (see Early Finish Duration). The task must have a specific finish time. • Average Duration - Flag the task if it finishes before the average duration (see Average Instance Time) for the task, less an offset (see Early Finish Offset Type), if specified.
Early Finish Offset Type	If Early Finish Type = Average Duration; Options: <ul style="list-style-type: none"> • Percentage • Duration
Early Finish Percentage Offset (-)	Required if Early Finish Offset Type = <i>Percentage</i> ; Percentage of Average Duration to use as an offset. The early finish time is calculated by subtracting the offset from the Average Duration .
Early Finish Duration Offset (-)	Required if Early Finish Offset Type = <i>Duration</i> ; Duration to use as an offset. The early finish time is calculated by subtracting the offset from the Average Duration .
Early Finish Duration Offset Unit	If Early Finish Offset Type = Duration; Options: <ul style="list-style-type: none"> • Seconds • Minutes • Hours
Early Finish Time	If Early Finish Type = Time; Time before which the task finish time is considered early. That is, enter a time at which the task should still be running. Use HH:MM, 24-hour time.

Early Finish Day Constraint	<p>If Early Finish Type = Time; Specification for whether or not to advance the early finish time to another day.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified early finish time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. <p>Default is -- None --.</p>
Early Finish Nth Amount	<p>If Early Finish Day Constraint = Nth Day; Number of days to advance.</p>
Early Finish Duration	<p>If Early Finish Type = Duration; Shortest amount of time this task instance should take to run.</p>
Projected Late	<p>System-provided if Late Start Time, Late Start Duration, or Late Finish Time is specified; This field is flagged if the task instance is projected to be late based on critical path projected end times (see Critical Path Projected Late Action Maximum and Critical Path Projected Late Threshold In Minutes Universal Controller system properties).</p> <p>.</p>
Critical Path Options	<p>This section contains Critical Path-related specifications for the task.</p>
CP Duration	<p>Optional; Allows you to override the estimated Critical Path Duration of the task when running in a Workflow; used in conjunction with the CP Duration Unit field. In most cases, this field should be left blank, which implies that the Controller will estimate the Critical Path Duration based on historical executions. Valid values are any integer equal to or greater than 0. Variables and Functions are supported.</p>
CP Duration (Resolved)	<p>Displays the current resolved value of the CP Duration field, which may contain variables or functions that will be displayed as unresolved until the task instance starts. The CP Duration (Resolved) field can continue to change value until the task instance starts, at which time CP Duration will display as resolved and CP Duration (Resolved) will no longer be visible unless there was an issue resolving the variables and/or functions contained within CP Duration. If the Controller is unable to resolve CP Duration or it resolves to an invalid value, CP Duration will be ignored and the Controller will estimate the Critical Path Duration based on historical executions.</p>

CP Duration Unit	<p>Type of CP Duration; used in conjunction with the CP Duration field. For example, for a CP Duration of two minutes, specify 2 in the CP Duration field and select Minutes in this field.</p> <p>Options:</p> <ul style="list-style-type: none"> • Seconds • Minutes • Hours <p>Default is Minutes.</p>
Workflow Execution Options	This section contains Execution Restriction specifications for the task if it is within a Workflow.
Execution Restriction	<p>Specification for whether or not there is a restriction for this task to be run, skipped, or held.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- None -- No restriction for this task. • Run Restriction for when this task will be run. • Skip Restriction for when this task will be skipped. • Hold Restriction for when this task will be held. <p>If Execution Restriction on a task is Run or Skip, then when it is part of a Workflow that is being launched, the Restriction Period is evaluated. The task instance will be skipped if Execution Restriction is Skip and the date is within the Restriction Period or Execution Restriction is Run and the date is not within the Restriction Period. Execution Restriction can be set to Skip with a Restriction Period of - None -, meaning the restriction is always active and the task will be skipped when it is part of a Workflow.</p>
Restriction Period	<p>If Execution Restriction = Run, Skip, or Hold; Period of time when the task is restricted.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- None -- No period of restriction for this task. • Before Restriction is valid if the date is before the Before Date value. • After Restriction is valid if the date is after the After Date value. • Span Restriction is valid if the date is before the Before Date value and after After Date value. • On Restriction is valid if the date is one of the Date List values.
Before Date	If Restriction Period = Before or Span; Date before which the restriction is valid.
Before Time	If Restriction Period = Before or Span; Time on the selected date before which the restriction is valid.
After Date	If Restriction Period = After or Span; Date after which the restriction is valid.
After Time	If Restriction Period = After or Span; Time on the selected date after which the restriction is valid.
Date List	If Restriction Period = On; Date(s) on which the restriction is valid.
Statistics	This section contains time-related statistics for the the task instance.
User Estimated End Time	System-supplied; If the user entered information into the User Estimated Duration field in the task Details, the Controller uses this information to calculate an end time for the task instance, based on the date/time the task instance started.
Lowest Estimated End Time	System-supplied; Lowest estimated end time of the task instance, calculated by the Controller based on the date/time the task instance started.
Average Estimated End Time	System-supplied; Average estimated end time of the task instance, calculated by the Controller based on the date/time the task instance started.

Highest Estimated End Time	System-supplied; Highest estimated end time of the task instance, calculated by the Controller based on the date/time the task instance started.
Projected Start Time	System-supplied; projected start time of the task instance, calculated by the Controller based on Projected End Time minus Projected Duration.
Projected End Time	System-supplied; projected end time of the task instance, calculated by the Controller based on the projected end time of its predecessor (or the maximum projected end time of all its predecessors, if more than one path exists to that task instance) plus its estimated critical path duration .
Metadata	This section contains Metadata information about this record.
UUID	Universally Unique Identifier of this record.
Updated By	Name of the user that last updated this record.
Updated	Date and time that this record was last updated.
Created By	Name of the user that created this record.
Created	Date and time that this record was created.
Status History	History of all statuses that the task instance has gone through.
Buttons	This section identifies the buttons displayed above and below the Task Instance Details that let you perform various actions.
Update	Saves updates to the record.
Force Finish	See Force Finishing a Task .
Hold	Places the task instance on Hold (see Putting a Task on Hold).
Skip	For tasks loaded into the schedule that have not yet run; allows you to tell the Controller to skip this task. See Skipping a Task .
Re-run	<p>See Re-running a Task Instance.</p> <div style="border: 2px solid orange; padding: 10px; margin: 10px 0;"> <p>Note</p> <p>If the Re-run (Suppress Intermediate Failures) Permitted Universal Controller system property is set to true, the Re-run button is a drop-down list containing the following options:</p> <ul style="list-style-type: none"> • Re-run • Re-run (Suppress Intermediate Failures) </div> <p>The Re-run button does not display if the task instance does not qualify for Re-run. If the task instance qualifies for Re-run, but already has Retry Options enabled, Re-run (Suppress Intermediate Failures) displays as disabled in the drop-down list.</p>
View Parent	Displays the task instance Details for the parent Workflow of this task instance.
Retrieve Output	See Retrieving Output .

Delete	Deletes the current record.
Refresh	Refreshes any dynamic data displayed in the Details.
Close	For pop-up view only; closes the pop-up view of this task instance.
Tabs	This section identifies the tabs across the top of the Task Instance Details that provide access to additional information about the task instance.
Virtual Resources	<p>Lists all Virtual Resources to which this task is assigned.</p> <p>If you want to create a Task Virtual Resource for this task, you can select an existing Virtual Resource (or, optionally, first create a new Virtual Resource and then select it as the Task Virtual Resource) or enter a Virtual Resource variable. The variable must be a supported type as described in Variables and Functions.</p>
Exclusive Requests	Lists all records in the Exclusive Requests table (<code>ops_exclusive_order</code>) for this task instance.
Output	<p>Displays output generated from the process, if any, based on specifications provided by the user in the Automatic Output Retrieval fields in the task Details.</p> <p>If automatic output retrieval was not available or was not selected, output can be obtained by clicking the Retrieve Output button.</p>
Notes	Lists all notes associated with this record.

5.5 Additional Task and Task Instance Details

For information on how to access additional details - such as [Metadata](#) and complete [database Details](#) - for Universal Tasks and Universal Task Instances (or any type of record), see [Records](#).

5.6 Running a Universal Task

You can run a Universal Task:

- Manually, by clicking the [Launch](#) or [Launch with Variables](#) button in the Universal Tasks list or Universal Task Details [Action menu](#) .
- As part of a [Workflow](#) .
- [Specify triggers](#) that run the task automatically based on times or events.

5.7 Monitoring Task Execution

You can monitor all system activity from the [Activity Monitor](#) and can view activity history from the [History list](#).

6 Import Integration Template

6.1 Overview

To create a Universal Integration, you must import a Universal Integration template.

In the Controller user interface, select Integrations > Import Integration Template to display the Import Template dialog.



The screenshot shows a dialog box titled "Import Template" with a close button (X) in the top right corner. The main area of the dialog contains the text "Template Zip File *" followed by a "Choose File" button and the text "No file chosen". At the bottom center of the dialog is an "Import" button.

7 PeopleSoft Task

7.1 Overview

Note

These instructions assume the user has a working knowledge of PeopleSoft.

The PeopleSoft task allows you to send commands to a PeopleSoft system and gather status information and output back from PeopleSoft. The PeopleSoft task uses Stonebranch's proprietary Universal Connector for PeopleSoft (UPPS) to communicate with PeopleSoft. Universal Connector for PeopleSoft allows Universal Controller to connect to a PeopleSoft system and manage PeopleSoft background processing tasks.

7.2 Before You Begin

To run a PeopleSoft task, you must first complete the following:

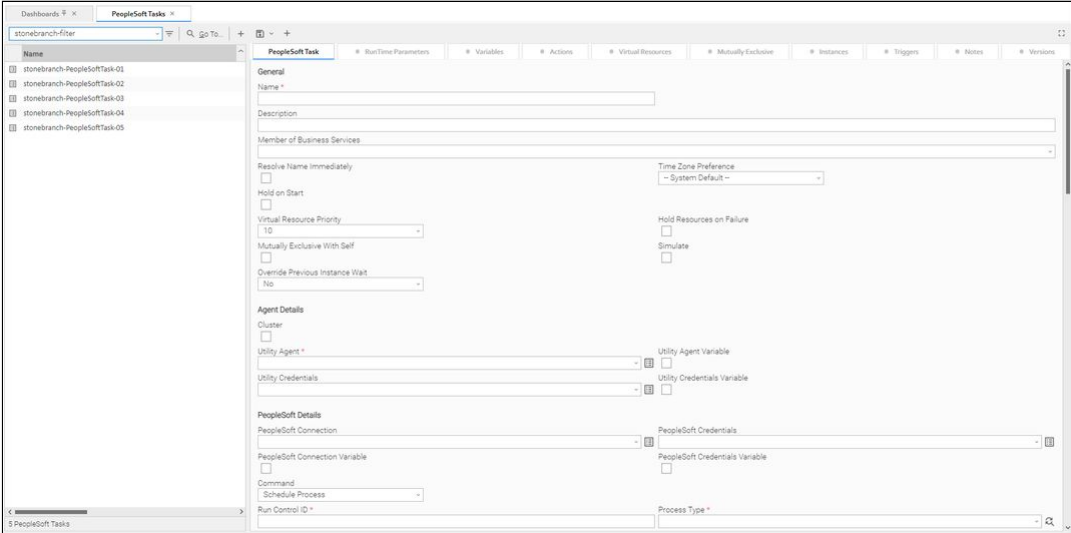


- Identify a [Universal Agent for Linux/Unix](#) that will interface with the PeopleSoft system.
- Define an [PeopleSoft connection](#) in the Controller database.

7.3 Built-In Variables

The following [built-in variables](#) can be used in a PeopleSoft task to pass data where appropriate:

- [Task Instance variables](#)
- [Agent-Based Task Instance variables](#)
- [PeopleSoft Task variables](#)

7.4 Creating a PeopleSoft Task

<p>Step 1</p>	<p>From the Automation Center navigation pane, select Tasks > PeopleSoft Tasks. The PeopleSoft Tasks list displays a list of all currently defined PeopleSoft tasks.</p> <p>To the right of the list, PeopleSoft Task Details for a new PeopleSoft task displays.</p> 
<p>Step 2</p>	<p>Enter/select Details for a new PeopleSoft task, using the field descriptions below as a guide.</p> <ul style="list-style-type: none"> • Required fields display an asterisk (*) after the field name. • Default values for fields, if available, display automatically. <p>To display more of the Details fields on the screen, you can either:</p> <ul style="list-style-type: none"> • Use the scroll bar. • Temporarily hide the list above the Details. • Click the  button above the list to display a pop-up version of the Details.
<p>Step 3</p>	<p>Click the  button. The task is added to the database, and all buttons and tabs in the Task Details are enabled.</p>

Note

To [open](#) an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- Clicking the [Details icon](#) next to a record name in the list, or right-click a record in the list and then click **Open** in the [Action menu](#) that displays, to display a pop-up version of the record Details.
- Right-click a record in the a list, or open a record and right-click in the record Details, and then click **Open In Tab** in the [Action menu](#) that displays, to display the record Details under a new tab on the record list page (see [Record Details as Tabs](#)).

7.4.1 PeopleSoft Task Details

The following PeopleSoft Task Details is for an existing PeopleSoft task.

Depending on the values that you enter / select for these fields, and whether or not the PeopleSoft task has ever been launched, more (or less) fields may display. See the [field descriptions](#), below, for a description of all fields that may display in the PeopleSoft Task Details.

Launch View Parents

PeopleSoft Task
● RunTime Parameters
● Variables
● Actions
● Virtual Resources
● Mutually Exclusive

General

Name * Version

Description

Member of Business Services

Resolve Name Immediately

Hold on Start

Virtual Resource Priority

Mutually Exclusive With Self

Override Previous Instance Wait

Time Zone Preference

Hold Resources on Failure

Simulate

Agent Details

Cluster

Utility Agent *

Utility Agent Variable

Utility Credentials

Utility Credentials Variable

PeopleSoft Details

PeopleSoft Connection

PeopleSoft Connection Variable

Command

Run Control ID *

Process Type *

Process/Job Name *

Server Name

Output Destination Type

Output Destination Format

Output Destination String

Process File Name

Print Distribution List

Print Application Message

Print Job Tree

Content Filter

Print Parameter List

Print System Message

Report

PeopleSoft Distribution Details

Report Folder Name

Retention Days

Email Address List

7.4.2 PeopleSoft Task Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in the PeopleSoft Task Details.

Field Name	Description
General	This section contains general information about the task.
Name	User-defined name of this task (Maximum = 255 alphanumeric characters); variables supported. It is the responsibility of the user to develop a workable naming scheme for tasks.
Version	System-supplied; version number of the current record, which is incremented by the Controller every time a user updates a record. Click the Versions tab to view previous versions. For details, see Record Versioning .
Description	Description of this record. (Maximum = 255 characters.)
Member of Business Services	User-defined; Allows you to select one or more Business Services that this record belongs to. (You also can Check All or Uncheck All Business Services for this record.) You can select up to 62 Business Services for any record type, and enter a maximum of 2048 characters for each Business Service. If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles , Business Services available for selection may be restricted.
Resolve Name Immediately	If enabled, the Instance Name of the task instance will be resolved immediately at trigger/launch time.
Time Zone Preference	User-defined; Allows you to specify the time zone that will be applied to the task. Options: <ul style="list-style-type: none"> • – System Default – Time zone is based on the value of the Task Time Zone Preference Universal Controller system property: Server or Inherited. • Server (xxx) Where (xxx) is the time zone ID of the server; time zone is evaluated in the time zone of the server. • Inherited Time zone is evaluated in the time zone of the Parent Workflow or Trigger / Launch specification in the case there is no Parent Workflow.
Hold on Start	If enabled, when the task is launched it appears in the Activity Monitor with a status of Held . The task runs when the user releases it.
Hold Reason	Information about why the task will be put on hold when it starts.
Virtual Resource Priority	Priority for acquiring a resource when two or more tasks are waiting for the resource. This priority applies to all resources required by the task. Options: 1 (high) - 100 (low). Default is 10.
Hold Resources on Failure	If enabled, the task instance will continue to hold Renewable resources if the task instance fails. Renewable resources will be returned only if the task instance status is either Complete, Finished, or Skipped.
Mutually Exclusive With Self	If enabled, the task will not be allowed to run concurrently with itself. Task will not start until the instance that is running finishes. An instance will transition to Exclusive Wait status if it cannot start due to another instance already running.
Simulate	Specifies if the instance should execute under simulation mode .

Agent Details	This section contains assorted detailed information about the Agent / Agent Cluster selected for this task.
Cluster	Indication that selecting a Utility Agent Cluster is required. If Cluster is selected, selecting a Utility Agent is not required unless Utility Agent Variable is selected.
Utility Agent	Name of the Agent resource that identifies the machine where the operation will run. If you do not specify a Utility Agent, you must specify a Utility Agent Cluster or Utility Cluster Broadcast .
Utility Agent Variable	If enabled, the Utility Agent field converts from a reference field (where you browse and select a record) into a text field that allows you to enter a variable. Use the format: <code>#{variable name}</code> . The variable must be a supported type as described in Variables and Functions . <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Utility Agent reference to using a Utility Agent variable, you must change the Utility Agent Variable field to Yes and specify the Utility Agent variable in the Utility Agent Unresolved field. Conversely, to change from using a Utility Agent variable to using a Utility Agent reference, you must change the Utility Agent Variable field to No and specify the Utility Agent reference in the Utility Agent field.</p> </div>
Utility Agent Cluster	If Cluster is selected; Group of Agents, one of which the Controller will choose to run this task. You can specify a Utility Agent Cluster in addition to or in place of a specific Utility Agent. If you specify a Utility Agent and a Utility Agent Cluster, the Controller first tries to run the task on the specific Utility Agent. If the Utility Agent is not available, the Controller reverts to the Utility Agent Cluster. See Agent Clusters for more information.
Utility Agent Cluster Variable	Indication of whether the Utility Agent Cluster field is a reference field for selecting a specific Agent Cluster (unchecked) or a text field for specifying the Utility Agent Cluster as a variable (checked). Use the format: <code>#{variable name}</code> . The variable must be a supported type as described in Variables and Functions . <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Utility Agent Cluster reference to using a Utility Agent Cluster variable, you must change the Utility Agent Cluster Variable field to Yes and specify the Utility Agent Cluster variable in the Utility Agent Cluster Unresolved field. Conversely, to change from using a Utility Agent Cluster variable to using a Utility Agent Cluster reference, you must change the Utility Agent Cluster Variable field to No and specify the Utility Agent Cluster reference in the Utility Agent Cluster field.</p> </div>
Utility Credentials	Login credentials that the Agent will use to access the Universal Command server machine. Required if the Agent Credentials Required Universal Controller system property is true.

<p>Utility Credentials Variable</p>	<p>Indication of whether the Utility Credentials field is a reference field for selecting a specific Credential (unchecked) or a text field for specifying the Utility Credentials as a variable (checked). Use the format: <code>\${variable name}</code>. The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Utility Credentials reference to using a Utility Credentials variable, you must change the Utility Credentials Variable field to Yes and specify the Utility Credentials variable in the Utility Credentials Unresolved field. Conversely, to change from using a Utility Credentials variable to using a Utility Credentials reference, you must change the Utility Credentials Variable field to No and specify the Utility Credentials reference in the Utility Credentials field.</p> </div>
<p>PeopleSoft Details</p>	<p>This section contains assorted detailed information about the task.</p>
<p>PeopleSoft Connection</p>	<p>Name of the PeopleSoft connection. The PeopleSoft connection specifies information about the PeopleSoft server. Select an existing PeopleSoft Connection from the drop-down list or click the icon to create a new PeopleSoft Connection.</p>
<p>PeopleSoft Connection Variable</p>	<p>Indication of whether the PeopleSoft Connection field is a reference field for selecting a specific PeopleSoft Connection (unchecked) or a text field for specifying the PeopleSoft Connection as a variable (checked). Use the format: <code>\${variable name}</code>.</p> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a PeopleSoft Connection reference to using a PeopleSoft Connection variable, you must change the PeopleSoft Connection Variable field to Yes and specify the PeopleSoft Connection variable in the PeopleSoft Connection Unresolved field. Conversely, to change from using a PeopleSoft Connection variable to using a PeopleSoft Connection reference, you must change the PeopleSoft Connection Variable field to No and specify the PeopleSoft Connection reference in the PeopleSoft Connection field.</p> </div>
<p>PeopleSoft Credentials</p>	<p>Login credentials that the Controller will use to access the PeopleSoft system. The credentials are stored in the Universal Controller credentials table; see Credentials.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>Either the PeopleSoft Connection or the PeopleSoft task using that connection must specify PeopleSoft Credentials. If a PeopleSoft task using the PeopleSoft Connection specifies PeopleSoft Credentials, those PeopleSoft task credentials override the PeopleSoft Connection credentials.</p> </div>

PeopleSoft Credentials Variable	Indication of whether the Credentials field is a reference field for selecting a specific Credential (unchecked) or a text field for specifying the Credential as a variable (checked). Use the format: <code>#{variable name}</code> . The variable must be a supported type as described in Variables and Functions . <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Credentials reference to using a Credentials variable, you must change the Credentials Variable field to Yes and specify the Credentials variable in the Credentials Unresolved field. Conversely, to change from using a Credentials variable to using a Credentials reference, you must change the Credentials Variable field to No and specify the Credentials reference in the Credentials field.</p> </div>
Command	PeopleSoft command to execute. Options: <ul style="list-style-type: none"> • Schedule Process Schedule a process. • Schedule Job Schedule a job. • Run Jobset Run a job. Default is Schedule Process.
Run Control ID	If Command = Schedule Process or Schedule Job; Run control ID to be used for the process submission.
Process Type	If Command = Schedule Process or Schedule Job; Specific type of PeopleSoft process. (If Command = Schedule Job, Process Type defaults to PSJob and is read-only.)
Process/Job Name	If Command = Schedule Process or Schedule Job; Name of the PeopleSoft process/job.
Server Name	If Command = Schedule Process or Schedule Job; Specific server name. If Command = Schedule Process or Schedule Job; Specific server name.
Output Destination Type	If Command = Schedule Process or Schedule Job; Type of output for the submitted process.
Output Destination Format	If Command = Schedule Process or Schedule Job; Override of the default output format for the submitted process.
Output Destination String	If Command = Schedule Process or Schedule Job; File path or printer destination for the output.
Process File Name	If Command = Schedule Process or Schedule Job; Dependent file name.
Main Schedule Name	If Command = Run Jobset; Name of the jobset schedule.
Main Job Name	If Command = Run Jobset; Name of the job within the jobset schedule.
Print Distribution List	Specification for whether or not the report-recipient distribution list is included in the Job Report.
Print Parameter List	Specification for whether or not the parameter list job items are included in the Job Report.
Print Application Message	Specification for whether or not the application messages for the monitored processes are included in the Job Report.
Print System Message	Specification for whether or not the application messages for the monitored processes are included in the Job Report.

Print Job Tree	Specification for whether or not the job tree is included in the Job Report.
Report	Specification for whether or not reports associated with a process are returned.
Content Filter	Comma-delimited list of report file suffixes that will not be returned. For example: pdf,xls
PeopleSoft Distribution Details	If Command = Schedule Process or Schedule Job; This section contains assorted distribution details about the task.
Report Folder Name	If Command = Schedule Process or Schedule Job; Folder in which the report will be viewed in Report Manager.
Retention Days	If Command = Schedule Process or Schedule Job; Number of days that reports generated by the submitted process should be retained by the system.
Email Address List	If Command = Schedule Process; List of email addresses, separated by semicolons.
Email Subject	If Command = Schedule Process; Subject line of the email. If not specified, the default subject line is used.
Email Text	If Command = Schedule Process; Body of the email. If not specified, the default body message is used.
Email With Log	If Command = Schedule Process; Indication (checked or unchecked) for whether or not to attach log files resulting from the Structured Query Report. Only applicable if Process Type = SQR Report.
Email Web Report	If Command = Schedule Process; Indication (checked or unchecked) for whether or not to include a link to the completed report output. Only applicable if Output Destination Type = WEB.
Distribution Options	<p>If Command = Schedule Process; Recipients of the process output</p> <p>To add an option, click the + icon and enter:</p> <ul style="list-style-type: none"> • Distribution Id Type: User or Role • Distribution Id <p>To delete an option, select in the list of variables and click the - icon.</p>
Result Processing Details	This section contains assorted detailed information about result processing for this task.
Exit Code Processing	<p>Specifies how the Controller should determine whether the executed command failed or completed successfully.</p> <p>Options:</p> <ul style="list-style-type: none"> • Success Exitcode Range Command is considered completed successfully if its exit code falls within the range specified in the Exit Codes field. • Failure Exitcode Range Command is considered failed if its exit code falls within the range specified in the Exit Codes field. • Success Output Contains Command is considered completed successfully if its output contains the text specified in the Scan Output For field. • Failure Output Contains Command is considered failed if its output contains the text specified in the Scan Output For field. • Step Conditions (z/OS only) Command is considered completed successfully/failed if any of its specified condition codes falls within the range specified under the Step Conditions tab (see Creating Step Conditions).

Output Type	<p>Required if Exit Code Processing = Success Output Contains or Failure Output Contains; type of output.</p> <p>Options:</p> <ul style="list-style-type: none"> • Standard Output (STDOUT) • Standard Error (STDERR) • File • Extension
Scan Output For	<p>Required if Exit Code Processing = Success Output Contains or Failure Output Contains; text for which the Controller should scan the output file. The Controller will process this field as a regular expression.</p>
Output File (for Exit Code Processing)	<p>Required if Output Type = File; path and file name of the output file that should be scanned for the text in the Scan Output For field.</p>
Exit Codes	<p>Required if Exit Code Processing = Success Exitcode Range or Failure Exitcode Range; range of exit codes. Format: Numeric. Use commas to list a series of exit codes; use hyphens to specify a range. Example: 1,5, 22-30.</p> <p>Variables are supported.</p>
Automatic Output Retrieval	<p>Specifies whether you want the Controller to automatically retrieve any output from the job and attach it to the task instance record.</p> <p>Options:</p> <ul style="list-style-type: none"> • None Do not attach any output to the task instance record. • Standard Output Attach all standard output. • Standard Error Attach standard error output. • File Attach the file specified in the Output File field. • Standard Output/Error Attach all standard output and standard error output. <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>Tasks specifying Automatic Output Retrieval will fail with Start Failure if the Agent Output Prohibited field is true in the Details of the specified Agent.</p> </div>
Wait For Output	<p>If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error, and Failure Only is not enabled (checked); Specification that the task should wait for the requested output before completing.</p>
Failure Only	<p>If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error, and Wait For Output is not enabled (checked); Indication for whether output should be retrieved on task failure only.</p>
Start Line	<p>If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Instructs the Controller to retrieve data beginning at the line indicated.</p> <ul style="list-style-type: none"> • If a Start Line value is not specified, the default is 1. • If the Start Line value is -1, data will be retrieved starting at the end of the file.
Number of Lines	<p>If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Allows you to limit the retrieved data to the number of lines specified. If a Number of Lines value is not specified, the default is the value of the Retrieve Output Default Number Of Lines Universal Controller system property.</p>

Scan Text	<p>If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Regex pattern that the Controller will search for a match for in STDOUT/STDERR or a specified file. The Controller will include the Number of Lines above and below the first line matched.</p> <p>if the Regex pattern is not found, the following message is returned: OPSWISE WARNING - Scan text string not found.</p>
Output File (for Automatic Output Retrieval)	Required if Automatic Output Retrieval = File; path and file name containing the output that you want automatically retrieved and attached to the task instance.
Retry Options	This section contains specifications for retrying the task.
Maximum Retries	User-defined; maximum number of times that the Controller should retry this task after it has started and gone to a failed state.
Retry Indefinitely	User-defined; indicates whether the Controller should continue trying indefinitely to run this task. If you enable this field, it overrides any value placed in the Maximum Retries field.
Retry Interval (Seconds)	User-defined; number of seconds between each retry.
Suppress Intermediate Failures	<p>User-defined; If the task instance is in the Failed status, indicates whether or not the following will be suppressed until all scheduled retry attempts (a Maximum Retries value has been entered or Retry Indefinitely has been enabled) have been made:</p> <ul style="list-style-type: none"> • All Actions (Abort, Email Notification, Set Variable, SNMP Notification, and System Operation) defined for the task instance on a Failed status. • Workflow conditional path processing; any Successors waiting on a failure path will not be released. • Task Monitors will not be notified of the Failed status. Also, any Task Monitor task that has a Time Scope in the past will disqualify any matching task instance in the past with a Failed status if the task instance is scheduled for automatic retry and for which Suppress Intermediate Failures has been enabled. • Any Workflow containing the Failed task instance will not transition to the Running/Problems status.
Wait / Delay Options	This section contains specifications for waiting to start and/or delaying on start the task.
Wait To Start	<p>Amount of time to wait before starting a task from the time that it was launched.</p> <p>Options are:</p> <ul style="list-style-type: none"> • – None – • Time • Relative Time • Duration • Seconds
Wait Time	If Wait To Start = Time or Relative Time; Number of hours and minutes to wait before starting the task.

<p>Wait Day Constraint</p>	<p>If Wait Time = Time or Relative Time; Specification for whether or not to advance the wait time to another day.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • -- None -- <ul style="list-style-type: none"> • If Wait To Start = Time; Advance to the next day if the specified wait time is before the time that the task instance is eligible to start; that is, all dependencies have been met. For example: it is not being held, and it is not waiting on any predecessors. • If Wait To Start = Relative Time; Advance to the next day if the specified wait time is before the task instance Trigger Time or, if there is no Trigger Time, before the task instance Launch Time. In the latter case, when a task instance is within a workflow, it will inherit the Launch Time of the top-level parent workflow task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. <p>Default is -- None --.</p>
<p>Wait Duration</p>	<p>If Wait To Start = Duration; Number of days, hours, minutes, and seconds to wait before starting the task.</p>
<p>Wait Duration In Seconds</p>	<p>If Wait To Start = Seconds; Number of seconds to wait before starting the task.</p>
<p>Delay On Start</p>	<p>Amount of time to delay the start of a task, after it has been launched, from the time that it is eligible to start; that is, all dependencies have been met. For example: it is not being held, it is not waiting on any predecessors, or there is no wait time specified.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- None -- • Duration • Seconds
<p>Delay Duration</p>	<p>If Delay On Start = Duration; Number of days, hours, minutes, and seconds to delay after starting the task.</p>
<p>Delay Duration In Seconds</p>	<p>If Delay On Start = Seconds; Number of seconds to delay after starting the task.</p>

Workflow Only	<p>Specification for whether or not to apply the Wait To Start and Delay On Start specifications only if the task is in a Workflow.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- System Default -- Apply the Wait To Start and Delay On Start specifications as defined by the System Default Wait/Delay Workflow Only system property. (Default is yes.) • Yes Apply the Wait To Start and Delay On Start specifications only if the task is in a Workflow. • No Apply the Wait To Start and Delay On Start specifications whether or not the task is in a Workflow.
Time Options	This section contains time-related specifications for the task.
Late Start	<p>If enabled, and if the task instance starts after the time or period specified, the task instance is flagged as late. You can specify a time or duration to determine a late start (see Late Start Type). To determine whether a task instance started late, open the task instance and locate the Started Late field; the field is checked if the instance started after the specified time. The Started Late field displays in the task instance Details only if the user specified a Late Start in the task Details.</p>
Late Start Type	<p>Required if Late Start is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • Time - Flag the task if it starts after the specified time. • Duration - Flag the task if it starts a certain amount of time after the programmed start time. The task must have a specific start time.
Late Start Time	<p>If Late Start Type = Time; Time after which the task start time is considered late. Use HH:MM, 24-hour time.</p>
Late Start Day Constraint	<p>If Late Start Type = Time; Specification for whether or not to advance the late start time to another day.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified late start time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. <p>Default is -- None --.</p>
Late Start Nth Amount	<p>If Late Start Day Constraint = Nth Day; Number of days to advance.</p>

Late Start Duration	<p>If Late Start Type = Duration; Duration (amount of relative time) after which the task is considered to have started late.</p> <p>For a task within a workflow, the duration is the period between the time the workflow starts and the time the task itself starts. For example, a task might have a Late Start Duration of 60 minutes. If the workflow starts at 9:00 a.m. but the task itself does not start until 10:30, the task has started late.</p> <p>For a task that is not within a workflow, Late Start Duration has meaning only if the task has been held upon starting. For example, if a task has a Late Start Duration of 60 minutes and the Hold on Start field is enabled, if the task is not released from hold within the amount of time specified in the Late Start Duration field, the task has started late.</p>
Late Finish	<p>If enabled, and if the task instance finishes after the time or period specified, the task instance is flagged as late. You can specify a time or duration to determine a late finish (see Late Finish Type). To determine whether a task instance finished late, open the task instance and locate the Finished Late field; the field is checked if the instance finished after the specified time or lasted longer than expected. This field only appears on the task instance if the user specified a Late Finish in the task definition.</p>
Late Finish Type	<p>Required if Late Finish is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • Time - Flag the task if it finishes after the specified time (see Late Finish Time). • Duration - Flag the task if it finishes a certain amount of time after the programmed finish time (see Late Finish Duration). The task must have a specific finish time. • Average Duration - Flag the task if it finishes before the average duration (see Average Instance Time) for the task, less an offset (see Late Finish Offset Type), if specified.
Late Finish Offset Type	<p>If Late Finish Type = Average Duration;</p> <p>Options:</p> <ul style="list-style-type: none"> • Percentage • Duration
Late Finish Percentage Offset (+)	<p>Required if Late Finish Offset Type = <i>Percentage</i>; Percentage of Average Duration to use as an offset. The late finish time is calculated by adding the offset to the Average Duration.</p>
Late Finish Duration Offset (+)	<p>Required if Late Finish Offset Type = <i>Duration</i>; Duration to use as an offset. The late finish time is calculated by adding the offset to the Average Duration.</p>
Late Finish Duration Offset Unit	<p>If Late Finish Offset Type = Duration;</p> <p>Options:</p> <ul style="list-style-type: none"> • Seconds • Minutes • Hours
Late Finish Time	<p>If Late Finish Type = Time; Time after which the task finish time is considered late. Use HH:MM, 24-hour time.</p>

<p>Late Finish Day Constraint</p>	<p>If Late Finish Type = Time; Specification for whether or not to advance the late finish time to another day.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified late finish time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. <p>Default is -- None --.</p>
<p>Late Finish Nth Amount</p>	<p>If Late Finish Day Constraint = Nth Day; Number of days to advance.</p>
<p>Late Finish Duration</p>	<p>If Late Finish Type = Duration; Longest amount of time this task instance should take to run.</p>
<p>Early Finish</p>	<p>If enabled, and if the task instance finishes before the time or period specified, the task instance is flagged as early. You can specify a time or duration to determine an early finish (see Early Finish Type). To determine whether a task instance finished early, open the task instance and locate the Finished Early field; the field is checked if the instance finished before the specified time or did not last as long as expected. This field only appears on the task instance if the user added Early Finish specifications to the task definition.</p>
<p>Early Finish Type</p>	<p>Required if Early Finish is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • Time - Flag the task if it finishes before the specified time (see Early Finish Time). • Duration - Flag the task if it finishes a certain amount of time before the programmed finish time (see Early Finish Duration). The task must have a specific finish time. • Average Duration - Flag the task if it finishes before the average duration (see Average Instance Time) for the task, less an offset (see Early Finish Offset Type), if specified.
<p>Early Finish Offset Type</p>	<p>If Early Finish Type = Average Duration;</p> <p>Options:</p> <ul style="list-style-type: none"> • Percentage • Duration
<p>Early Finish Percentage Offset (-)</p>	<p>Required if Early Finish Offset Type = <i>Percentage</i>; Percentage of Average Duration to use as an offset. The early finish time is calculated by subtracting the offset from the Average Duration.</p>
<p>Early Finish Duration Offset (-)</p>	<p>Required if Early Finish Offset Type = <i>Duration</i>; Duration to use as an offset. The early finish time is calculated by subtracting the offset from the Average Duration.</p>

Early Finish Duration Offset Unit	If Early Finish Offset Type = Duration; Options: <ul style="list-style-type: none"> • Seconds • Minutes • Hours
Early Finish Time	If Early Finish Type = Time; Time before which the task finish time is considered early. That is, enter a time at which the task should still be running. Use HH:MM, 24-hour time.
Early Finish Day Constraint	If Early Finish Type = Time; Specification for whether or not to advance the early finish time to another day. Valid values: <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified early finish time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. Default is -- None --.
Early Finish Nth Amount	If Early Finish Day Constraint = Nth Day; Number of days to advance.
Early Finish Duration	If Early Finish Type = Duration; Shortest amount of time this task instance should take to run.
User Estimated Duration	Required if Early Finish Type or Late Finish Type = Average Duration; Estimated amount of time it should normally take to run this task. The Controller uses this information to calculate the User Estimated End Time on a task instance record. User Estimated Duration is used when the Average Duration is not available; for example, on the first launch of a task.
Critical Path Options	This section contains Critical Path-related specifications for the task.
CP Duration	Optional; Allows you to override the estimated Critical Path Duration of the task when running in a Workflow; used in conjunction with the CP Duration Unit field. In most cases, this field should be left blank, which implies that the Controller will estimate the Critical Path Duration based on historical executions. Valid values are any integer equal to or greater than 0. Variables and Functions are supported.
CP Duration (Resolved)	Displays the current resolved value of the CP Duration field, which may contain variables or functions that will be displayed as unresolved until the task instance starts. The CP Duration (Resolved) field can continue to change value until the task instance starts, at which time CP Duration will display as resolved and CP Duration (Resolved) will no longer be visible unless there was an issue resolving the variables and/or functions contained within CP Duration . If the Controller is unable to resolve CP Duration or it resolves to an invalid value, CP Duration will be ignored and the Controller will estimate the Critical Path Duration based on historical executions.

CP Duration Unit	<p>Type of CP Duration; used in conjunction with the CP Duration field. For example, for a CP Duration of two minutes, specify 2 in the CP Duration field and select Minutes in this field.</p> <p>Options:</p> <ul style="list-style-type: none"> • Seconds • Minutes • Hours <p>Default is Minutes.</p>
Workflow Execution Options	This section contains Execution Restriction specifications for the task if it is within a Workflow.
Execution Restriction	<p>Specification for whether or not there is a restriction for this task to be run, skipped, or held.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- None -- No restriction for this task. • Run Restriction for when this task will be run. • Skip Restriction for when this task will be skipped. • Hold Restriction for when this task will be held. <p>If Execution Restriction on a task is Run or Skip, then when it is part of a Workflow that is being launched, the Restriction Period is evaluated. The task instance will be skipped if Execution Restriction is Skip and the date is within the Restriction Period or Execution Restriction is Run and the date is not within the Restriction Period. Execution Restriction can be set to Skip with a Restriction Period of - None -, meaning the restriction is always active and the task will be skipped when it is part of a Workflow.</p>
Restriction Period	<p>If Execution Restriction = Run, Skip, or Hold; Period of time when the task is restricted.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- None -- No period of restriction for this task. • Before Restriction is valid if the date is before the Before Date value. • After Restriction is valid if the date is after the After Date value. • Span Restriction is valid if the date is before the Before Date value and after After Date value. • On Restriction is valid if the date is one of the Date List values.
Before Date	If Restriction Period = Before or Span; Date before which the restriction is valid.
Before Time	If Restriction Period = Before or Span; Time on the selected date before which the restriction is valid.
After Date	If Restriction Period = After or Span; Date after which the restriction is valid.
After Time	If Restriction Period = After or Span; Time on the selected date after which the restriction is valid.
Date List	If Restriction Period = On; Date(s) on which the restriction is valid.
Self-Service Options	This section contains Self-Service specifications for the task.
Enforce Variables	Specifies whether or not to enforce Launch with Variables... when launching a task using the User Interface.
Lock Variables	Specifies whether or not to prevent editing variables when using Launch with Variables... from the User Interface.
Statistics	This section contains time-related statistics for task instances of the task.
First Execution	System-supplied; End Time of the first instance of this task to complete.

Last Execution	System-supplied; End Time of the last instance of this task to complete.
Last Instance Duration	System-supplied; Amount of time the task took to run the last time it ran.
Lowest Instance Time	System-supplied; Lowest amount of time this task has taken to run.
Average Instance Time	System-supplied; Average amount of time this task takes to run.
Highest Instance Time	System-supplied; Highest amount of time this task has taken to run.
Number of Instances	System-supplied; Number of instances in the database for this task.
Metadata	This section contains Metadata information about this record.
UUID	Universally Unique Identifier of this record.
Updated By	Name of the user that last updated this record.
Updated	Date and time that this record was last updated.
Created By	Name of the user that created this record.
Created	Date and time that this record was created.
Buttons	This section identifies the buttons displayed above and below the Task Details that let you perform various actions.
Save	Saves a new task record in the Controller database.
Save & New	Saves a new record in the Controller database and redisplay empty Details so that you can create another new record.
Save & View	Saves a new record in the Controller database and continues to display that record.
New	Displays empty (except for default values) Details for creating a new task.
Update	Saves updates to the record.
Launch	Manually launches the task.
View Parents	Displays a list of any parent Workflow tasks for this task.
Copy	Creates a copy of this task, which you are prompted to rename.
Delete	Deletes the current record. <div style="border: 2px solid orange; padding: 10px; margin: 10px 0;"> <p>Note</p> <p>You cannot delete a task if it is either:</p> <ul style="list-style-type: none"> • Specified in an enabled Trigger. • The only task specified in a disabled Trigger. </div>
Refresh	Refreshes any dynamic data displayed in the Details.
Close	For pop-up view only; closes the pop-up view of this task.

Tabs	This section identifies the tabs across the top of the Task Details that provide access to additional information about the task instance.										
RunTime Parameters	See Adding RunTime Parameters , below.										
Variables	Lists all user-defined variables associated with this record; that is, variables that have been defined for this specific record.										
Actions	<p>Allows you to specify actions that the Controller will take automatically based on events that occur during the execution of this task.</p> <p>Events are:</p> <ul style="list-style-type: none"> • Task instance status • Exit codes • Late start • Late finish • Early finish <p>Actions are:</p> <table border="1"> <tr> <td>Abort Action</td> <td>Abort the task if certain events occur. For details, see Abort Actions.</td> </tr> <tr> <td>Email Notification</td> <td>Send an email if certain events occur. For details, see Email Notification Actions.</td> </tr> <tr> <td>Set Variable</td> <td>Used in tasks and workflows to set a variable based on the occurrence of certain events. For details, see Creating a Set Variable Action within a Task or Workflow.</td> </tr> <tr> <td>SNMP Notification</td> <td>Send an email if certain events occur. For details, see SNMP Notification Actions.</td> </tr> <tr> <td>System Operation</td> <td>Run an Universal Controller system operation based on specified conditions. For details, see System Operation Actions.</td> </tr> </table>	Abort Action	Abort the task if certain events occur. For details, see Abort Actions .	Email Notification	Send an email if certain events occur. For details, see Email Notification Actions .	Set Variable	Used in tasks and workflows to set a variable based on the occurrence of certain events. For details, see Creating a Set Variable Action within a Task or Workflow .	SNMP Notification	Send an email if certain events occur. For details, see SNMP Notification Actions .	System Operation	Run an Universal Controller system operation based on specified conditions. For details, see System Operation Actions .
Abort Action	Abort the task if certain events occur. For details, see Abort Actions .										
Email Notification	Send an email if certain events occur. For details, see Email Notification Actions .										
Set Variable	Used in tasks and workflows to set a variable based on the occurrence of certain events. For details, see Creating a Set Variable Action within a Task or Workflow .										
SNMP Notification	Send an email if certain events occur. For details, see SNMP Notification Actions .										
System Operation	Run an Universal Controller system operation based on specified conditions. For details, see System Operation Actions .										
Virtual Resources	<p>Lists all Virtual Resources to which this task is assigned.</p> <p>If you want to create a Task Virtual Resource for this task, you can select an existing Virtual Resource (or, optionally, first create a new Virtual Resource and then select it as the Task Virtual Resource) or enter a Virtual Resource variable. The variable must be a supported type as described in Variables and Functions.</p>										
Mutually Exclusive	Lists all tasks that have been set to be mutually exclusive of this task.										
Instances	Lists all instances of the task.										
Triggers	List of all triggers that reference this task in the Task(s) field of the trigger Details; that is, a list of all triggers that have been defined to launch this task. Also allows you to add new triggers. If you add a new trigger from this location, the Controller automatically constructs a default trigger name as follows: <current task name>#TRIGGER#. You can change the default name if desired. For instructions on creating triggers, see Triggers .										
Notes	Lists all notes associated with this record.										
Versions	Stores copies of all previous versions of the current record. See Record Versioning .										

7.4.3 Options Fields

Five PeopleSoft Task fields allow you to populate their drop-down lists with options retrieved from the PeopleSoft system:

- Process Type
- Process/Job Name
- Server Name
- Output Destination Type
- Output Destination Format

To select the options for a field, click the refresh picker icon next to its drop-down list to display a Refresh Options... dialog. There is a different Refresh Options... dialog for each options field (see below).

Most of the fields on a Refresh Options... dialog are fields from the PeopleSoft Task Details, and the values for those fields in the dialog are, by default, the same as the values for the fields in the Details. You can keep the current values or change them from their drop-down lists.


When you click the Submit button on the Refresh Options... dialog for an options field, the drop-down list for that field is populated with values that are determined by the values that you submitted on the Refresh Options... dialog.


7.4.3.1 Process Type


The screenshot shows a dialog box titled "Refresh Process Type Options...". It contains four dropdown menus, each with a refresh icon (a grid with a circular arrow) to its right. The fields are: "Utility Agent *", "Utility Credentials", "PeopleSoft Connection", and "PeopleSoft Credentials *". At the bottom, there are three buttons: "Clear", "Submit", and "Cancel".


7.4.3.2 Process/Job Name


Refresh Process/Job Name Options... ✕

Utility Agent * 

Utility Credentials 


PeopleSoft Connection 


PeopleSoft Credentials * 


Process Type * 


7.4.3.3 Server Name

Refresh Server Name Options... ✕

Utility Agent * 

Utility Credentials 

PeopleSoft Connection 

PeopleSoft Credentials * 

7.4.3.4 Output Destination Type

Refresh Output Destination Type Options...

Utility Agent *

Utility Credentials

PeopleSoft Connection

PeopleSoft Credentials *

Generic Process Type *

Clear Submit Cancel

7.4.3.5 Output Destination Format

Refresh Output Destination Format Options...

Utility Agent *

Utility Credentials

PeopleSoft Connection

PeopleSoft Credentials *

Generic Process Type *

Output Destination Type *

Clear Submit Cancel

7.5 Viewing a PeopleSoft Task Instance

When a PeopleSoft task is launched, the Controller creates a task instance record of that task.

A task instance contains detailed information about a single execution of that task.

You can access a task instance from:

- **Instances tab** on the [PeopleSoft Task Details](#) for that task
- [Activity Monitor](#)
- [Task Instances list](#)

7.5.1 PeopleSoft Task Instance Details

The following PeopleSoft Task Instance Details contains information on the execution of the task shown in the [PeopleSoft Task Details](#).

Re-run Retrieve Output...

PeopleSoft Task Instance
● RunTime Parameters
● Actions
● Virtual Resources
● Exclusive Requests
Or ◀ ▶

General

Instance Name	Instance Number
<input style="width: 95%;" type="text" value="stonebranch-PeopleSoftTask-01"/>	<input style="width: 95%;" type="text" value="1"/>
Description	
<input style="width: 98%; height: 20px;" type="text"/>	
Member of Business Services	
<input style="width: 98%; height: 20px;" type="text"/>	
Task	Source Version
<input style="width: 95%;" type="text" value="stonebranch-PeopleSoftTask-01"/>	<input style="width: 95%;" type="text" value="1"/>
Launch Source	
<input style="width: 95%;" type="text" value="Launch Task / User Interface"/>	
Invoked By	Execution User
<input style="width: 95%;" type="text" value="Manually Launched"/>	<input style="width: 95%;" type="text" value="Admin"/>
Calendar	Time Zone Preference
<input style="width: 95%;" type="text" value="System Default"/>	<input style="width: 95%;" type="text" value="-- System Default --"/>
Virtual Resource Priority	Hold Resources on Failure
<input style="width: 95%;" type="text" value="10"/>	<input type="checkbox"/>
Mutually Exclusive With Self	Simulate
<input type="checkbox"/>	<input type="checkbox"/>
Previous Instance Wait Resolved	
<input style="width: 95%;" type="text" value="-- None --"/>	

Status

Status	Exit Code
<input style="width: 95%;" type="text" value="Finished"/>	<input style="width: 95%;" type="text" value="0"/>
Status Description	
<input style="width: 98%; height: 20px;" type="text" value="Agent is not Active -> State was forced from UNDELIVERABLE to FINISHED"/>	
Operational Memo	
<input style="width: 98%; height: 20px;" type="text"/>	
Trigger Time	Launch Time
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text" value="2023-09-28 13:54:52 -0400"/>
Wait Until Time	
<input style="width: 95%;" type="text"/>	
Start Time	End Time
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text" value="2023-09-28 13:55:08 -0400"/>
Duration	
<input style="width: 95%;" type="text"/>	
Run Status	Distribution Status
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>
Process Instance	
<input style="width: 95%;" type="text"/>	

Agent Details

Cluster	
<input type="checkbox"/>	
Utility Agent *	Utility Agent Variable
<input style="width: 95%;" type="text" value="B09418"/>	<input type="checkbox"/>
Utility Credentials	Utility Credentials Variable
<input style="width: 95%;" type="text"/>	<input type="checkbox"/>

PeopleSoft Details

PeopleSoft Connection	PeopleSoft Credentials
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text" value="1"/>
PeopleSoft Connection Variable	PeopleSoft Credentials Variable
<input type="checkbox"/>	<input type="checkbox"/>

7.5.2 PeopleSoft Task Instance Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in PeopleSoft Task Instance Details.

Field Name	Description
General	This section contains general information about the task instance.
Instance Name	Name of this task instance.
Instance Number	System-supplied; Sequentially assigned number, maintained per task, representing the creation order of the instance.
Description	Description of this record. (Maximum = 255 characters.)
Member of Business Services	<p>User-defined; Allows you to select one or more Business Services that this record belongs to. (You also can Check All or Uncheck All Business Services for this record.)</p> <p>You can select up to 62 Business Services for any record type, and enter a maximum of 2048 characters for each Business Service.</p> <p>If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles, Business Services available for selection may be restricted.</p>
Task	Name of the task that was run to create this task instance. Click the icon to display Task Details for the task.
Source Version	Version of the task that was run to create this task instance.

<p>Launch Source</p>	<p>System-supplied; Source from which this task was launched.</p> <p>Options:</p> <ul style="list-style-type: none"> • Scheduled Trigger If the instance was directly launched by a scheduled trigger, the Trigger (trigger_id) column is assigned the UUID of the scheduled trigger. • Trigger Monitor If the instance is a monitor associated with monitor trigger, the Trigger (trigger_id) column is assigned the UUID of the monitor trigger. • Trigger Now / User Interface If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger. • Trigger Now / System Operation If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger and the Source Instance (source_instance) column will be assigned the UUID of the instance invoking the System Operation. • Trigger Now / Web Service If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger. • Trigger Now / Command Line If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger. • Workflow If the instance was launched by a workflow, the Workflow (workflow_id) column is assigned the UUID of the workflow instance. Likewise, the Source Instance (source_instance) column will also be assigned the UUID of the workflow instance. • Launch Task / User Interface If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be null. • Launch Task / System Operation If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be assigned the UUID of the instance invoking the System Operation. • Launch Task / Web Service If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be null. • Launch Task / Command Line If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be null. • Recurring If the instance was directly launched by a Recurring Task Instance, the Source Instance (source_instance) column will be assigned the UUID of the Recurring Task Instance.
<p>Source Instance</p>	<p>System-supplied; UUID of the source instance.</p> <ul style="list-style-type: none"> • If the instance was directly launched by a Trigger Now command; the UUID of the instance invoking the System Operation. • If the instance was launched by a workflow; the UUID of the workflow instance. • If the instance was directly launched by the Launch Task command; the UUID of the instance invoking the System Operation. • If the instance was directly launched by a Recurring Task Instance; the UUID of the Recurring Task Instance.
<p>Invoked by</p>	<p>System-supplied; how the task instance was launched.</p> <p>Options:</p> <ul style="list-style-type: none"> • Trigger: (Trigger Name) Instance was launched by the named trigger. • Workflow: (Workflow Name) Instance was launched by the named workflow. • Manually Launched Instance was launched by a user. To identify the user, check the Execution User column for that task instance on the Task Instances screen or, on most task instance screens, the Execution User field.

Execution User	System-supplied; If the task was launched manually; ID of the user who launched it.
Calendar	Calendar associated with the task instance.
Time Zone Preference	User-defined; Allows you to specify the time zone that will be applied to the task. Options: <ul style="list-style-type: none"> • – System Default – Time zone is based on the value of the Task Time Zone Preference Universal Controller system property: Server or Inherited. • Server (xxx) Where (xxx) is the time zone ID of the server; time zone is evaluated in the time zone of the server. • Inherited Time zone is evaluated in the time zone of the Parent Workflow or Trigger / Launch specification in the case there is no Parent Workflow.
Virtual Resource Priority	Priority for acquiring a resource when two or more tasks are waiting for the resource. This priority applies to all resources required by the task. Options: 1 (high) - 100 (low). Default is 10.
Hold Resources on Failure	If enabled, the task instance will continue to hold Renewable resources if the task instance fails. Renewable resources will be returned only if the task instance status is either Complete, Finished, or Skipped.
Mutually Exclusive With Self	If enabled, the task will not be allowed to run concurrently with itself. Task will not start until the instance that is running finishes. An instance will transition to Exclusive Wait status if it cannot start due to another instance already running.
Simulate	Specifies if the instance should execute under simulation mode .
Status	This section contains information about the current status of the task instance.
Status	System-supplied; see Task Instance Statuses .
Exit Code	System-supplied; the exit code captured by the Agent when executing the task (for example, a command or script).
Status Description	System-supplied; additional information, if any, about the status of the task instance.
Operational Memo	User-defined operational memo.
Evaluation Time	If time zone of user is different than time zone of task instance; Time at which Execution Restrictions and Run Criteria were evaluated based upon the requested time zone. (Time zone of task instance displays in parentheses.)
Critical	Indicates that this task is in the Critical Path of a workflow.
Critical Endpoint	Indicates that this task was defined as a Critical Endpoint of a Critical Path in a workflow.
Wait Until Time	Amount of time calculated to wait before the task was started, based on Wait To Start and Delay On Start times.
Queued Time	System-supplied; Date and time the task was queued for processing.
Trigger Time	System-supplied; Date and time the task instance was triggered.
Launch Time	System-supplied; Date and time the task instance was launched.
Start Time	System-supplied; Date and time the task instance started.

End Time	System-supplied; Date and time the task instance completed.
Duration	System-supplied; amount of time the task instance took to run.
Run Status	Status of the PeopleSoft process being monitored on the PeopleSoft Process Scheduler
Distribution Status	Displays the distribution status for reports associated with the main (parent) process being monitored on the PeopleSoft system.
Process Instance	The Instance ID (generated by the PeopleSoft system) associated with the process being monitored on the PeopleSoft system.
Agent Details	This section contains assorted detailed information about the Agent / Agent Cluster selected for this task.
Cluster	Indication that selecting a Utility Agent Cluster is required. If Cluster is selected, selecting a Utility Agent is not required unless Utility Agent Variable is selected.
Utility Agent	Name of the Agent resource that identifies the machine where the operation will run. If you do not specify a Utility Agent, you must specify a Utility Agent Cluster or Utility Cluster Broadcast .
Utility Agent Variable	<p>If enabled, the Utility Agent field converts from a reference field (where you browse and select a record) into a text field that allows you to enter a variable. Use the format:</p> <pre> <code>#{variable name}.</code> </pre> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Utility Agent reference to using a Utility Agent variable, you must change the Utility Agent Variable field to Yes and specify the Utility Agent variable in the Utility Agent Unresolved field. Conversely, to change from using a Utility Agent variable to using a Utility Agent reference, you must change the Utility Agent Variable field to No and specify the Utility Agent reference in the Utility Agent field.</p> </div>
Utility Agent Cluster	If Cluster is selected; Group of Agents, one of which the Controller will choose to run this task. You can specify a Utility Agent Cluster in addition to or in place of a specific Utility Agent. If you specify a Utility Agent and a Utility Agent Cluster, the Controller first tries to run the task on the specific Utility Agent. If the Utility Agent is not available, the Controller reverts to the Utility Agent Cluster. See Agent Clusters for more information.

<p>Utility Agent Cluster Variable</p>	<p>Indication of whether the Utility Agent Cluster field is a reference field for selecting a specific Agent Cluster (unchecked) or a text field for specifying the Utility Agent Cluster as a variable (checked). Use the format:</p> <p><code>\${variable name}</code>.</p> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Utility Agent Cluster reference to using a Utility Agent Cluster variable, you must change the Utility Agent Cluster Variable field to Yes and specify the Utility Agent Cluster variable in the Utility Agent Cluster Unresolved field. Conversely, to change from using a Utility Agent Cluster variable to using a Utility Agent Cluster reference, you must change the Utility Agent Cluster Variable field to No and specify the Utility Agent Cluster reference in the Utility Agent Cluster field.</p> </div>
<p>Utility Credentials</p>	<p>Login credentials that the Agent will use to access the Universal Command server machine. Required if the Agent Credentials Required Universal Controller system property is true.</p>
<p>Utility Credentials Variable</p>	<p>Indication of whether the Utility Credentials field is a reference field for selecting a specific Credential (unchecked) or a text field for specifying the Utility Credentials as a variable (checked). Use the format: <code>\${variable name}</code>. The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Utility Credentials reference to using a Utility Credentials variable, you must change the Utility Credentials Variable field to Yes and specify the Utility Credentials variable in the Utility Credentials Unresolved field. Conversely, to change from using a Utility Credentials variable to using a Utility Credentials reference, you must change the Utility Credentials Variable field to No and specify the Utility Credentials reference in the Utility Credentials field.</p> </div>
<p>PeopleSoft Details</p>	<p>This section contains assorted detailed information about the task.</p>
<p>PeopleSoft Connection</p>	<p>Name of the PeopleSoft connection. The PeopleSoft connection specifies information about the PeopleSoft server. Select an existing PeopleSoft Connection from the drop-down list or click the icon to create a new PeopleSoft Connection.</p>

<p>PeopleSoft Connection Variable</p>	<p>Indication of whether the PeopleSoft Connection field is a reference field for selecting a specific PeopleSoft Connection (unchecked) or a text field for specifying the PeopleSoft Connection as a variable (checked). Use the format: <code>\${variable name}</code>.</p> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a PeopleSoft Connection reference to using a PeopleSoft Connection variable, you must change the PeopleSoft Connection Variable field to Yes and specify the PeopleSoft Connection variable in the PeopleSoft Connection Unresolved field. Conversely, to change from using a PeopleSoft Connection variable to using a PeopleSoft Connection reference, you must change the PeopleSoft Connection Variable field to No and specify the PeopleSoft Connection reference in the PeopleSoft Connection field.</p> </div>
<p>PeopleSoft Credentials</p>	<p>Login credentials that the Controller will use to access the PeopleSoft system. The credentials are stored in the Universal Controller credentials table; see Credentials.</p> <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>Either the PeopleSoft Connection or the PeopleSoft task using that connection must specify PeopleSoft Credentials. If a PeopleSoft task using the PeopleSoft Connection specifies PeopleSoft Credentials, those PeopleSoft task credentials override the PeopleSoft Connection credentials.</p> </div>
<p>PeopleSoft Credentials Variable</p>	<p>Indication of whether the Credentials field is a reference field for selecting a specific Credential (unchecked) or a text field for specifying the Credential as a variable (checked). Use the format: <code>\${variable name}</code>.</p> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Credentials reference to using a Credentials variable, you must change the Credentials Variable field to Yes and specify the Credentials variable in the Credentials Unresolved field. Conversely, to change from using a Credentials variable to using a Credentials reference, you must change the Credentials Variable field to No and specify the Credentials reference in the Credentials field.</p> </div>
<p>Command</p>	<p>PeopleSoft command to execute.</p> <p>Options:</p> <ul style="list-style-type: none"> • Schedule Process Schedule a process. • Schedule Job Schedule a job. • Run Jobset Run a job. <p>Default is Schedule Process.</p>

Run Control ID	If Command = Schedule Process or Schedule Job; Run control ID to be used for the process submission.
Process Type	If Command = Schedule Process or Schedule Job; Specific type of PeopleSoft process. (If Command = Schedule Job, Process Type defaults to PSJob and is read-only.)
Process/Job Name	If Command = Schedule Process or Schedule Job; Name of the PeopleSoft process/job.
Server Name	If Command = Schedule Process or Schedule Job; Specific server name. If Command = Schedule Process or Schedule Job; Specific server name.
Output Destination Type	If Command = Schedule Process or Schedule Job; Type of output for the submitted process.
Output Destination Format	If Command = Schedule Process or Schedule Job; Override of the default output format for the submitted process.
Output Destination String	If Command = Schedule Process or Schedule Job; File path or printer destination for the output.
Process File Name	If Command = Schedule Process or Schedule Job; Dependent file name.
Main Schedule Name	If Command = Run Jobset; Name of the jobset schedule.
Main Job Name	If Command = Run Jobset; Name of the job within the jobset schedule.
Print Distribution List	Specification for whether or not the report-recipient distribution list is included in the Job Report.
Print Parameter List	Specification for whether or not the parameter list job items are included in the Job Report.
Print Application Message	Specification for whether or not the application messages for the monitored processes are included in the Job Report.
Print System Message	Specification for whether or not the application messages for the monitored processes are included in the Job Report.
Print Job Tree	Specification for whether or not the job tree is included in the Job Report.
Report	Specification for whether or not reports associated with a process are returned.
Content Filter	Comma-delimited list of report file suffixes that will not be returned. For example: pdf,xls
PeopleSoft Distribution Details	If Command = Schedule Process or Schedule Job; This section contains assorted distribution details about the task.
Report Folder Name	If Command = Schedule Process or Schedule Job; Folder in which the report will be viewed in Report Manager.
Retention Days	If Command = Schedule Process or Schedule Job; Number of days that reports generated by the submitted process should be retained by the system.
Email Address List	If Command = Schedule Process; List of email addresses, separated by semicolons.
Email Subject	If Command = Schedule Process; Subject line of the email. If not specified, the default subject line is used.
Email Text	If Command = Schedule Process; Body of the email. If not specified, the default body message is used.
Email With Log	If Command = Schedule Process; Indication (checked or unchecked) for whether or not to attach log files resulting from the Structured Query Report. Only applicable if Process Type = SQR Report.

Email Web Report	If Command = Schedule Process; Indication (checked or unchecked) for whether or not to include a link to the completed report output. Only applicable if Output Destination Type = WEB.
Distribution Options	If Command = Schedule Process; Recipients of the process output To add an option, click the + icon and enter: <ul style="list-style-type: none"> • Distribution Id Type: User or Role • Distribution Id To delete an option, select in the list of variables and click the - icon.
Result Processing Details	This section contains assorted detailed information about result processing for this task.
Exit Code Processing	Specifies how the Controller should determine whether the executed command failed or completed successfully. Options: <ul style="list-style-type: none"> • Success Exitcode Range Command is considered completed successfully if its exit code falls within the range specified in the Exit Codes field. • Failure Exitcode Range Command is considered failed if its exit code falls within the range specified in the Exit Codes field. • Success Output Contains Command is considered completed successfully if its output contains the text specified in the Scan Output For field. • Failure Output Contains Command is considered failed if its output contains the text specified in the Scan Output For field. • Step Conditions (z/OS only) Command is considered completed successfully/failed if any of its specified condition codes falls within the range specified under the Step Conditions tab (see Creating Step Conditions).
Output Type	Required if Exit Code Processing = Success Output Contains or Failure Output Contains; type of output. Options: <ul style="list-style-type: none"> • Standard Output (STDOUT) • Standard Error (STDERR) • File • Extension
Scan Output For	Required if Exit Code Processing = Success Output Contains or Failure Output Contains; text for which the Controller should scan the output file. The Controller will process this field as a regular expression.
Output File (for Exit Code Processing)	Required if Output Type = File; path and file name of the output file that should be scanned for the text in the Scan Output For field.
Exit Codes	Required if Exit Code Processing = Success Exitcode Range or Failure Exitcode Range; range of exit codes. Format: Numeric. Use commas to list a series of exit codes; use hyphens to specify a range. Example: 1,5, 22-30. Variables are supported.

Automatic Output Retrieval	<p>Specifies whether you want the Controller to automatically retrieve any output from the job and attach it to the task instance record.</p> <p>Options:</p> <ul style="list-style-type: none"> • None Do not attach any output to the task instance record. • Standard Output Attach all standard output. • Standard Error Attach standard error output. • File Attach the file specified in the Output File field. • Standard Output/Error Attach all standard output and standard error output. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>Tasks specifying Automatic Output Retrieval will fail with Start Failure if the Agent Output Prohibited field is true in the Details of the specified Agent.</p> </div>
Wait For Output	<p>If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error, and Failure Only is not enabled (checked); Specification that the task should wait for the requested output before completing.</p>
Failure Only	<p>If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error, and Wait For Output is not enabled (checked); Indication for whether output should be retrieved on task failure only.</p>
Start Line	<p>If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Instructs the Controller to retrieve data beginning at the line indicated.</p> <ul style="list-style-type: none"> • If a Start Line value is not specified, the default is 1. • If the Start Line value is -1, data will be retrieved starting at the end of the file.
Number of Lines	<p>If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Allows you to limit the retrieved data to the number of lines specified. If a Number of Lines value is not specified, the default is the value of the Retrieve Output Default Number Of Lines Universal Controller system property.</p>
Scan Text	<p>If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Regex pattern that the Controller will search for a match for in STDOUT/STDERR or a specified file. The Controller will include the Number of Lines above and below the first line matched.</p> <p>if the Regex pattern is not found, the following message is returned: OPSWISE WARNING - Scan text string not found.</p>
Output File (for Automatic Output Retrieval)	<p>Required if Automatic Output Retrieval = File; path and file name containing the output that you want automatically retrieved and attached to the task instance.</p>
Retry Options	<p>This section contains specifications for retrying the task.</p>
Maximum Retries	<p>User-defined; maximum number of times that the Controller should retry this task after it has started and gone to a failed state.</p>
Retry Indefinitely	<p>User-defined; indicates whether the Controller should continue trying indefinitely to run this task. If you enable this field, it overrides any value placed in the Maximum Retries field.</p>
Retry Interval (Seconds)	<p>User-defined; number of seconds between each retry.</p>
Current Retry Count	<p>System-supplied; current number of times that the Controller has retried the task after it first went to failure status.</p>

<p>Suppress Intermediate Failures</p>	<p>User-defined; If the task instance is in the Failed status, indicates whether or not the following will be suppressed until all scheduled retry attempts (a Maximum Retries value has been entered or Retry Indefinitely has been enabled) have been made:</p> <ul style="list-style-type: none"> • All Actions (Abort, Email Notification, Set Variable, SNMP Notification, and System Operation) defined for the task instance on a Failed status. • Workflow conditional path processing; any Successors waiting on a failure path will not be released. • Task Monitors will not be notified of the Failed status. Also, any Task Monitor task that has a Time Scope in the past will disqualify any matching task instance in the past with a Failed status if the task instance is scheduled for automatic retry and for which Suppress Intermediate Failures has been enabled. • Any Workflow containing the Failed task instance will not transition to the Running/Problems status.
<p>Next Retry Time</p>	<p>System-supplied for a task instance in the Failed status that is scheduled for automatic retry; Next time that a retry will be made. If a task instance is not scheduled for automatic retry, Next Retry Time does not display in the task instance Details.</p>
<p>Wait / Delay Options</p>	<p>This section contains specifications for waiting to start and/or delaying on start the task.</p>
<p>Wait To Start</p>	<p>Amount of time to wait before starting a task from the time that it was launched.</p> <p>Options are:</p> <ul style="list-style-type: none"> • – None – • Time • Relative Time • Duration • Seconds
<p>Wait Time</p>	<p>If Wait To Start = Time or Relative Time; Number of hours and minutes to wait before starting the task.</p>

<p>Wait Day Constraint</p>	<p>If Wait Time = Time or Relative Time; Specification for whether or not to advance the wait time to another day.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • -- None -- <ul style="list-style-type: none"> • If Wait To Start = Time; Advance to the next day if the specified wait time is before the time that the task instance is eligible to start; that is, all dependencies have been met. For example: it is not being held, and it is not waiting on any predecessors. • If Wait To Start = Relative Time; Advance to the next day if the specified wait time is before the task instance Trigger Time or, if there is no Trigger Time, before the task instance Launch Time. In the latter case, when a task instance is within a workflow, it will inherit the Launch Time of the top-level parent workflow task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. <p>Default is -- None --.</p>
<p>Wait Duration</p>	<p>If Wait To Start = Duration; Number of days, hours, minutes, and seconds to wait before starting the task.</p>
<p>Wait Duration In Seconds</p>	<p>If Wait To Start = Seconds; Number of seconds to wait before starting the task.</p>
<p>Delay On Start</p>	<p>Amount of time to delay the start of a task, after it has been launched, from the time that it is eligible to start; that is, all dependencies have been met. For example: it is not being held, it is not waiting on any predecessors, or there is no wait time specified.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- None -- • Duration • Seconds
<p>Delay Duration</p>	<p>If Delay On Start = Duration; Number of days, hours, minutes, and seconds to delay after starting the task.</p>
<p>Delay Duration In Seconds</p>	<p>If Delay On Start = Seconds; Number of seconds to delay after starting the task.</p>
<p>Time Options</p>	<p>This section contains time-related specifications for the task instance.</p>
<p>Late Start</p>	<p>If enabled, and if the task instance starts after the time or period specified, the task instance is flagged as late. You can specify a time or duration to determine a late start (see Late Start Type). To determine whether a task instance started late, open the task instance and locate the Started Late field; the field is checked if the instance started after the specified time. The Started Late field displays in the task instance Details only if the user specified a Late Start in the task Details.</p>

Started Late	System-supplied; this field is flagged if the task started later than the time specified in the Late Start fields.
Late Start Type	Required if Late Start is enabled. Options: <ul style="list-style-type: none"> • Time - Flag the task if it starts after the specified time. • Duration - Flag the task if it starts a certain amount of time after the programmed start time. The task must have a specific start time.
Late Start Time	If Late Start Type = Time; Time after which the task start time is considered late. Use HH:MM, 24-hour time.
Late Start Day Constraint	If Late Start Type = Time; Specification for whether or not to advance the late start time to another day. Valid values: <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified late start time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. Default is -- None --.
Late Start Nth Amount	If Late Start Day Constraint = Nth Day; Number of days to advance.
Late Start Duration	If Late Start Type = Duration; Duration (amount of relative time) after which the task is considered to have started late. For a task within a workflow, the duration is the period between the time the workflow starts and the time the task itself starts. For example, a task might have a Late Start Duration of 60 minutes. If the workflow starts at 9:00 a.m. but the task itself does not start until 10:30, the task has started late. For a task that is not within a workflow, Late Start Duration has meaning only if the task has been held upon starting. For example, if a task has a Late Start Duration of 60 minutes and the Hold on Start field is enabled, if the task is not released from hold within the amount of time specified in the Late Start Duration field, the task has started late.
Computed Late Start Time	If Late Start is enabled, the computed Date/Time for when the task instance will be Late Started.
Late Finish	If enabled, and if the task instance finishes after the time or period specified, the task instance is flagged as late. You can specify a time or duration to determine a late finish (see Late Finish Type). To determine whether a task instance finished late, open the task instance and locate the Finished Late field; the field is checked if the instance finished after the specified time or lasted longer than expected. This field only appears on the task instance if the user specified a Late Finish in the task definition.

Finished Late	System-supplied; this field is flagged if the task finished later than the time or duration specified in the Late Finish fields.
Late Finish Type	Required if Late Finish is enabled. Options: <ul style="list-style-type: none"> • Time - Flag the task if it finishes after the specified time (see Late Finish Time). • Duration - Flag the task if it finishes a certain amount of time after the programmed finish time (see Late Finish Duration). The task must have a specific finish time. • Average Duration - Flag the task if it finishes before the average duration (see Average Instance Time) for the task, less an offset (see Late Finish Offset Type), if specified.
Late Finish Offset Type	If Late Finish Type = Average Duration; Options: <ul style="list-style-type: none"> • Percentage • Duration
Late Finish Percentage Offset (+)	Required if Late Finish Offset Type = <i>Percentage</i> ; Percentage of Average Duration to use as an offset. The late finish time is calculated by adding the offset to the Average Duration .
Late Finish Duration Offset (+)	Required if Late Finish Offset Type = <i>Duration</i> ; Duration to use as an offset. The late finish time is calculated by adding the offset to the Average Duration .
Late Finish Duration Offset Unit	If Late Finish Offset Type = Duration; Options: <ul style="list-style-type: none"> • Seconds • Minutes • Hours
Late Finish Time	If Late Finish Type = Time; Time after which the task finish time is considered late. Use HH:MM, 24-hour time.
Late Finish Day Constraint	If Late Finish Type = Time; Specification for whether or not to advance the late finish time to another day. Valid values: <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified late finish time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. Default is -- None --.
Late Finish Nth Amount	If Late Finish Day Constraint = Nth Day; Number of days to advance.

Late Finish Duration	If Late Finish Type = Duration; Longest amount of time this task instance should take to run.
Computed Late Finish Time	If Late Finish is enabled, the computed Date/Time for when the task instance will be Late Finished.
Early Finish	If enabled, and if the task instance finishes before the time or period specified, the task instance is flagged as early. You can specify a time or duration to determine an early finish (see Early Finish Type). To determine whether a task instance finished early, open the task instance and locate the Finished Early field; the field is checked if the instance finished before the specified time or did not last as long as expected. This field only appears on the task instance if the user added Early Finish specifications to the task definition.
Finished Early	System-supplied; this field is flagged if the task finished earlier than the time specified in the Early Finish fields.
Early Finish Type	Required if Early Finish is enabled. Options: <ul style="list-style-type: none"> • Time - Flag the task if it finishes before the specified time (see Early Finish Time). • Duration - Flag the task if it finishes a certain amount of time before the programmed finish time (see Early Finish Duration). The task must have a specific finish time. • Average Duration - Flag the task if it finishes before the average duration (see Average Instance Time) for the task, less an offset (see Early Finish Offset Type), if specified.
Early Finish Offset Type	If Early Finish Type = Average Duration; Options: <ul style="list-style-type: none"> • Percentage • Duration
Early Finish Percentage Offset (-)	Required if Early Finish Offset Type = <i>Percentage</i> ; Percentage of Average Duration to use as an offset. The early finish time is calculated by subtracting the offset from the Average Duration .
Early Finish Duration Offset (-)	Required if Early Finish Offset Type = <i>Duration</i> ; Duration to use as an offset. The early finish time is calculated by subtracting the offset from the Average Duration .
Early Finish Duration Offset Unit	If Early Finish Offset Type = Duration; Options: <ul style="list-style-type: none"> • Seconds • Minutes • Hours
Early Finish Time	If Early Finish Type = Time; Time before which the task finish time is considered early. That is, enter a time at which the task should still be running. Use HH:MM, 24-hour time.

<p>Early Finish Day Constraint</p>	<p>If Early Finish Type = Time; Specification for whether or not to advance the early finish time to another day.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified early finish time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. <p>Default is -- None --.</p>
<p>Early Finish Nth Amount</p>	<p>If Early Finish Day Constraint = Nth Day; Number of days to advance.</p>
<p>Early Finish Duration</p>	<p>If Early Finish Type = Duration; Shortest amount of time this task instance should take to run.</p>
<p>Projected Late</p>	<p>System-provided if Late Start Time, Late Start Duration, or Late Finish Time is specified; This field is flagged if the task instance is projected to be late based on critical path projected end times (see Critical Path Projected Late Action Maximum and Critical Path Projected Late Threshold In Minutes Universal Controller system properties).</p> <p>.</p>
<p>Critical Path Options</p>	<p>This section contains Critical Path-related specifications for the task.</p>
<p>CP Duration</p>	<p>Optional; Allows you to override the estimated Critical Path Duration of the task when running in a Workflow; used in conjunction with the CP Duration Unit field. In most cases, this field should be left blank, which implies that the Controller will estimate the Critical Path Duration based on historical executions. Valid values are any integer equal to or greater than 0. Variables and Functions are supported.</p>
<p>CP Duration (Resolved)</p>	<p>Displays the current resolved value of the CP Duration field, which may contain variables or functions that will be displayed as unresolved until the task instance starts. The CP Duration (Resolved) field can continue to change value until the task instance starts, at which time CP Duration will display as resolved and CP Duration (Resolved) will no longer be visible unless there was an issue resolving the variables and/or functions contained within CP Duration. If the Controller is unable to resolve CP Duration or it resolves to an invalid value, CP Duration will be ignored and the Controller will estimate the Critical Path Duration based on historical executions.</p>

CP Duration Unit	<p>Type of CP Duration; used in conjunction with the CP Duration field. For example, for a CP Duration of two minutes, specify 2 in the CP Duration field and select Minutes in this field.</p> <p>Options:</p> <ul style="list-style-type: none"> • Seconds • Minutes • Hours <p>Default is Minutes.</p>
Workflow Execution Options	This section contains Execution Restriction specifications for the task if it is within a Workflow.
Execution Restriction	<p>Specification for whether or not there is a restriction for this task to be run, skipped, or held.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- None -- No restriction for this task. • Run Restriction for when this task will be run. • Skip Restriction for when this task will be skipped. • Hold Restriction for when this task will be held. <p>If Execution Restriction on a task is Run or Skip, then when it is part of a Workflow that is being launched, the Restriction Period is evaluated. The task instance will be skipped if Execution Restriction is Skip and the date is within the Restriction Period or Execution Restriction is Run and the date is not within the Restriction Period. Execution Restriction can be set to Skip with a Restriction Period of - None -, meaning the restriction is always active and the task will be skipped when it is part of a Workflow.</p>
Restriction Period	<p>If Execution Restriction = Run, Skip, or Hold; Period of time when the task is restricted.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- None -- No period of restriction for this task. • Before Restriction is valid if the date is before the Before Date value. • After Restriction is valid if the date is after the After Date value. • Span Restriction is valid if the date is before the Before Date value and after After Date value. • On Restriction is valid if the date is one of the Date List values.
Before Date	If Restriction Period = Before or Span; Date before which the restriction is valid.
Before Time	If Restriction Period = Before or Span; Time on the selected date before which the restriction is valid.
After Date	If Restriction Period = After or Span; Date after which the restriction is valid.
After Time	If Restriction Period = After or Span; Time on the selected date after which the restriction is valid.
Date List	If Restriction Period = On; Date(s) on which the restriction is valid.
Statistics	This section contains time-related statistics for the task instance.
User Estimated End Time	System-supplied; If the user entered information into the User Estimated Duration field in the task Details, the Controller uses this information to calculate an end time for the task instance, based on the date/time the task instance started.
Lowest Estimated End Time	System-supplied; Lowest estimated end time of the task instance, calculated by the Controller based on the date/time the task instance started.
Average Estimated End Time	System-supplied; Average estimated end time of the task instance, calculated by the Controller based on the date/time the task instance started.

Highest Estimated End Time	System-supplied; Highest estimated end time of the task instance, calculated by the Controller based on the date/time the task instance started.
Projected Start Time	System-supplied; projected start time of the task instance, calculated by the Controller based on Projected End Time minus Projected Duration.
Projected End Time	System-supplied; projected end time of the task instance, calculated by the Controller based on the projected end time of its predecessor (or the maximum projected end time of all its predecessors, if more than one path exists to that task instance) plus its estimated critical path duration .
Metadata	This section contains Metadata information about this record.
UUID	Universally Unique Identifier of this record.
Updated By	Name of the user that last updated this record.
Updated	Date and time that this record was last updated.
Created By	Name of the user that created this record.
Created	Date and time that this record was created.
Status History	History of all statuses that the task instance has gone through.
Buttons	This section identifies the buttons displayed above and below the Task Instance Details that let you perform various actions.
Update	Saves updates to the record.
Force Finish	See Force Finishing a Task .
Hold	Places the task instance on Hold (see Putting a Task on Hold).
Skip	For tasks loaded into the schedule that have not yet run; allows you to tell the Controller to skip this task. See Skipping a Task .
Re-run	See Re-running a Task Instance . <div style="border: 1px solid orange; padding: 10px; margin: 10px 0;"> <p>Note</p> <p>If the Re-run (Suppress Intermediate Failures) Permitted Universal Controller system property is set to true, the Re-run button is a drop-down list containing the following options:</p> <ul style="list-style-type: none"> • Re-run • Re-run (Suppress Intermediate Failures) </div> <p>The Re-run button does not display if the task instance does not qualify for Re-run. If the task instance qualifies for Re-run, but already has Retry Options enabled, Re-run (Suppress Intermediate Failures) displays as disabled in the drop-down list.</p>
View Parent	Displays the task instance Details for the parent Workflow of this task instance.
Retrieve Output	See Retrieving Output .

Delete	Deletes the current record.
Refresh	Refreshes any dynamic data displayed in the Details.
Close	For pop-up view only; closes the pop-up view of this task instance.
Tabs	This section identifies the tabs across the top of the Task Instance Details that provide access to additional information about the task instance.
RunTime Parameters	See Adding RunTime Parameters , below.
Virtual Resources	Lists all Virtual Resources to which this task is assigned. If you want to create a Task Virtual Resource for this task, you can select an existing Virtual Resource (or, optionally, first create a new Virtual Resource and then select it as the Task Virtual Resource) or enter a Virtual Resource variable. The variable must be a supported type as described in Variables and Functions .
Exclusive Requests	Lists all records in the Exclusive Requests table (ops_exclusive_order) for this task instance.
Output	Displays output generated from the process, if any, based on specifications provided by the user in the Automatic Output Retrieval fields in the task Details. If automatic output retrieval was not available or was not selected, output can be obtained by clicking the Retrieve Output button.
Notes	Lists all notes associated with this record.

7.6 Adding RunTime Parameters

You can add one or more RunTime Parameters for each PeopleSoft task, and define the values for those parameters, as described below.


7.6.1 Adding a Parameter

Step 1	Open the Peoplesoft task to which you want to add the parameter.
Step 2	Click the Runtime Parameters tab. The Runtime Parameters list displays a list of all Runtime Parameters for which values have been defined for this task.

PeopleSoftTask | **RunTime Parameters** | Variables | Actions | Virtual Resources | Mutually Exclusive | Instances | Triggers

3 RunTime Parameters

Parameter Name	Parameter Value	Updated By	Updated
RTP1	1	Admin	2022-10-20 11:48:58 -0400
RTP2	2	Admin	2022-10-20 11:49:05 -0400
RTP3	3	Admin	2022-10-20 11:49:13 -0400

<p>Step 3</p>	<p>Click the  button to display RunTime Parameter Details.</p> <div data-bbox="406 297 1544 663" style="border: 1px solid #ccc; padding: 5px;"> <p>RunTime Parameter Details</p> <p>RunTime Parameter</p> <p>Details</p> <p>Parameter Name *</p> <p>Parameter Value *</p> </div> <div data-bbox="406 728 1544 913" style="border: 2px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>If the Command field in the PeopleSoft Details specifies Schedule Job, the RunTime Parameter Details also requires you to select a Process Name and Process Type.</p> </div>
<p>Step 4</p>	<p>Click the refresh picker icon next to the Parameter Name field to select options for the RunTime Parameter.</p> <div data-bbox="406 1014 1544 1653" style="border: 1px solid #ccc; padding: 5px;"> <p>Refresh Parameter Name Options...</p> <p>Utility Agent *</p> <p>Utility Credentials</p> <p>PeopleSoft Connection</p> <p>PeopleSoft Credentials *</p> <p>Process Type</p> <p>Process/Job Name *</p> <p>Clear Submit Cancel</p> </div>
<p>Step 5</p>	<p>For each field on the Refresh Parameter Name Options... dialog, you can select from a list of values that may have changed since the last time that a value was selected.</p> <p>Most of the fields on a Refresh Options... dialog are fields from the PeopleSoft Task Details, and the values for those fields in the dialog are, by default, the same as the values for the fields in the Details. You can keep the current values or change them from their drop-down lists.</p> <p>When you click the Submit button on the Refresh Parameter Name Options... dialog, the drop-down list for the Parameter Name field in the RunTime Parameter Details is populated with values that are determined by the values that you submitted on the Refresh Parameter Name Options... dialog.</p>
<p>Step 6</p>	<p>Select a parameter from the drop-down list and enter a Parameter Value.</p>

Step 7

Click the  button.

7.6.2 Deleting a RunTime Parameter

To delete a single RunTime Parameter for a task, either:

- Right-click the parameter on the RunTime Parameters list and click **Delete** on the [Action menu](#) .
- Open the RunTime Parameter record and click the **Delete** button.

7.7 Running a PeopleSoft Task

You can run a PeopleSoft task:

- Manually, by clicking the [Launch](#) or [Launch with Variables](#) button in the PeopleSoft tasks list or PeopleSoft Task Details [Action menu](#) .
- As part of a [workflow](#) .
- [Specify triggers](#) that run the task automatically based on times or events.

7.8 Monitoring Task Execution

You can monitor all system activity from the [Activity Monitor](#) and can view activity history from the [History list](#).

8 SAP Task

8.1 Overview

Note

These instructions assume the user has a working knowledge of SAP.

The SAP task allows you to send commands to an SAP system and gather status information and output back from SAP. The SAP task uses Stonebranch's proprietary Universal Connector for SAP (USAP) to communicate with SAP. Universal Connector for SAP allows Universal Controller to connect to an SAP system and manage SAP background processing tasks.

8.2 Before You Begin

To run an SAP task, you must first complete the following:

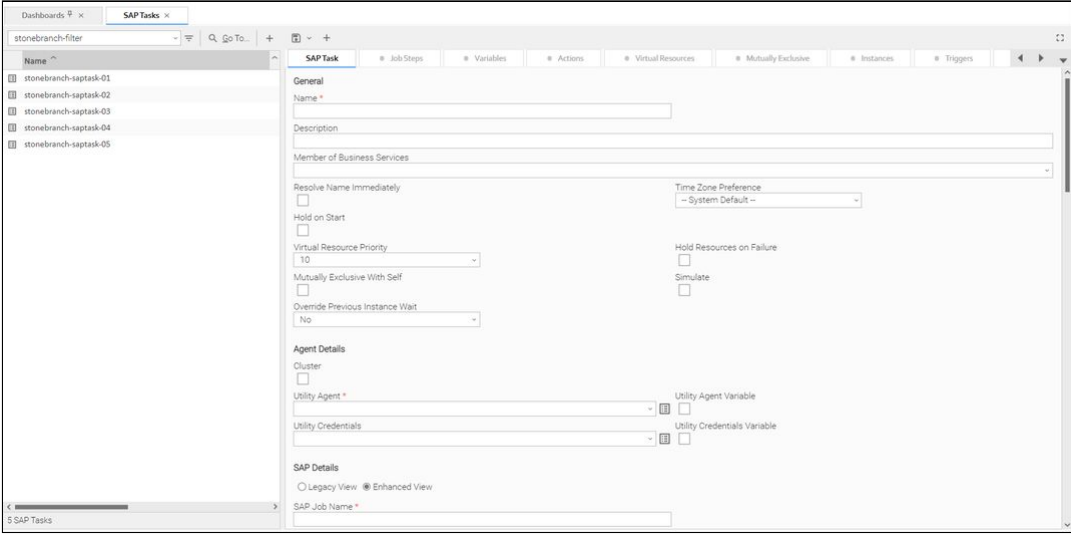


- Identify the Utility Agent that has Universal Connector for SAP installed and licensed; either a [Universal Agent for Linux/Unix](#) or a [Universal Agent for Windows](#) that will interface with the SAP system.
- Define an [SAP connection](#) in the Controller database.

8.3 Built-In Variables

The following [built-in variables](#) can be used in an SAP task to pass data where appropriate:

- [Task Instance variables](#)
- [Agent-Based Task Instance variables](#)
- [SAP Task variables](#)

8.4 Creating an SAP Task

<p>Step 1</p>	<p>From the Automation Center navigation pane, select Tasks > SAP Tasks. The SAP Tasks list displays a list of all currently defined SAP tasks.</p> <p>To the right of the list, SAP Task Details for a new SAP task displays.</p> 
<p>Step 2</p>	<p>Enter/select Details for a new SAP task, using the field descriptions below as a guide.</p> <ul style="list-style-type: none"> • Required fields display an asterisk (*) after the field name. • Default values for fields, if available, display automatically. <p>To display more of the Details fields on the screen, you can either:</p> <ul style="list-style-type: none"> • Use the scroll bar. • Temporarily hide the list above the Details. • Click the  button above the list to display a pop-up version of the Details.
<p>Step 3</p>	<p>Click the  button. The task is added to the database, and all buttons and tabs in the Task Details are enabled.</p>

Note

To [open](#) an existing record on the list, either:

- Click a record in the list to display its record Details below the list. (To clear record Details below the list, click the **New** button that displays above and below the Details.)
- Clicking the [Details icon](#) next to a record name in the list, or right-click a record in the list and then click **Open** in the [Action menu](#) that displays, to display a pop-up version of the record Details.
- Right-click a record in the a list, or open a record and right-click in the record Details, and then click **Open In Tab** in the [Action menu](#) that displays, to display the record Details under a new tab on the record list page (see [Record Details as Tabs](#)).

8.4.1 SAP Task Details

The following SAP Task Details is for an existing SAP task.

Depending on the values that you enter / select for these fields, whether or not the SAP task has ever been launched, and whether you have [Enhanced View](#) or [Legacy View](#) selected, more (or less) fields may display. See the [field descriptions](#), below, for a description of all fields that may display in the SAP Task Details.

Launch View Parents

SAP Task
● Job Steps
● Variables
● Actions
● Virtual Resources
● Mutually Exclusive

General

Name * Version

Description

Member of Business Services

Resolve Name Immediately

Time Zone Preference

Hold on Start

Virtual Resource Priority

Hold Resources on Failure

Mutually Exclusive With Self

Simulate

Override Previous Instance Wait

Agent Details

Cluster

Utility Agent * Utility Agent Variable

Utility Credentials Utility Credentials Variable

SAP Details

Legacy View Enhanced View

SAP Job Name *

SAP Job Class Email Notification...

SAP Target Server Spool List Recipient...

SAP Connection SAP Credentials *

Job Log Child

Spool List Child

Purge Child

Result Processing Details

Exit Code Processing

Exit Codes *

Automatic Output Retrieval

Wait For Output

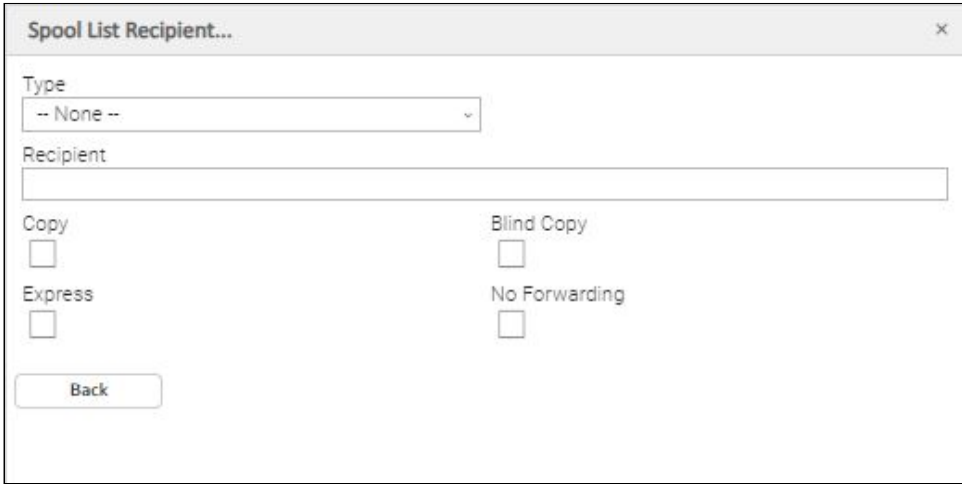
8.4.2 SAP Task Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in the SAP Task Details.

Field Name	Description
General	This section contains general information about the task.
Name	User-defined name of this task (Maximum = 255 alphanumeric characters); variables supported. It is the responsibility of the user to develop a workable naming scheme for tasks.
Version	System-supplied; version number of the current record, which is incremented by the Controller every time a user updates a record. Click the Versions tab to view previous versions. For details, see Record Versioning .
Description	Description of this record. (Maximum = 255 characters.)
Member of Business Services	User-defined; Allows you to select one or more Business Services that this record belongs to. (You also can Check All or Uncheck All Business Services for this record.) You can select up to 62 Business Services for any record type, and enter a maximum of 2048 characters for each Business Service. If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles , Business Services available for selection may be restricted.
Resolve Name Immediately	If enabled, the Instance Name of the task instance will be resolved immediately at trigger/launch time.
Time Zone Preference	User-defined; Allows you to specify the time zone that will be applied to the task. Options: <ul style="list-style-type: none"> • – System Default – Time zone is based on the value of the Task Time Zone Preference Universal Controller system property: Server or Inherited. • Server (xxx) Where (xxx) is the time zone ID of the server; time zone is evaluated in the time zone of the server. • Inherited Time zone is evaluated in the time zone of the Parent Workflow or Trigger / Launch specification in the case there is no Parent Workflow.
Hold on Start	If enabled, when the task is launched it appears in the Activity Monitor with a status of Held . The task runs when the user releases it.
Hold Reason	Information about why the task will be put on hold when it starts.
Virtual Resource Priority	Priority for acquiring a resource when two or more tasks are waiting for the resource. This priority applies to all resources required by the task. Options: 1 (high) - 100 (low). Default is 10.
Hold Resources on Failure	If enabled, the task instance will continue to hold Renewable resources if the task instance fails. Renewable resources will be returned only if the task instance status is either Complete, Finished, or Skipped.
Mutually Exclusive With Self	If enabled, the task will not be allowed to run concurrently with itself. Task will not start until the instance that is running finishes. An instance will transition to Exclusive Wait status if it cannot start due to another instance already running.
Simulate	Specifies if the instance should execute under simulation mode .

Agent Details	This section contains assorted detailed information about the Agent / Agent Cluster selected for this task.
Cluster	Indication that selecting a Utility Agent Cluster is required. If Cluster is selected, selecting a Utility Agent is not required unless Utility Agent Variable is selected.
Utility Agent	Name of the Agent resource that identifies the machine where the operation will run. If you do not specify a Utility Agent, you must specify a Utility Agent Cluster or Utility Cluster Broadcast .
Utility Agent Variable	<p>If enabled, the Utility Agent field converts from a reference field (where you browse and select a record) into a text field that allows you to enter a variable. Use the format:</p> <pre> \${variable name}. </pre> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Utility Agent reference to using a Utility Agent variable, you must change the Utility Agent Variable field to Yes and specify the Utility Agent variable in the Utility Agent Unresolved field. Conversely, to change from using a Utility Agent variable to using a Utility Agent reference, you must change the Utility Agent Variable field to No and specify the Utility Agent reference in the Utility Agent field.</p> </div>
Utility Agent Cluster	If Cluster is selected; Group of Agents, one of which the Controller will choose to run this task. You can specify a Utility Agent Cluster in addition to or in place of a specific Utility Agent. If you specify a Utility Agent and a Utility Agent Cluster, the Controller first tries to run the task on the specific Utility Agent. If the Utility Agent is not available, the Controller reverts to the Utility Agent Cluster. See Agent Clusters for more information.
Utility Agent Cluster Variable	<p>Indication of whether the Utility Agent Cluster field is a reference field for selecting a specific Agent Cluster (unchecked) or a text field for specifying the Utility Agent Cluster as a variable (checked). Use the format:</p> <pre> \${variable name}. </pre> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Utility Agent Cluster reference to using a Utility Agent Cluster variable, you must change the Utility Agent Cluster Variable field to Yes and specify the Utility Agent Cluster variable in the Utility Agent Cluster Unresolved field. Conversely, to change from using a Utility Agent Cluster variable to using a Utility Agent Cluster reference, you must change the Utility Agent Cluster Variable field to No and specify the Utility Agent Cluster reference in the Utility Agent Cluster field.</p> </div>
Utility Credentials	Login credentials that the Agent will use to access the Universal Command server machine. Required if the Agent Credentials Required Universal Controller system property is true.

<p>Utility Credentials Variable</p>	<p>Indication of whether the Utility Credentials field is a reference field for selecting a specific Credential (unchecked) or a text field for specifying the Utility Credentials as a variable (checked). Use the format: <code>#{variable name}</code>. The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Utility Credentials reference to using a Utility Credentials variable, you must change the Utility Credentials Variable field to Yes and specify the Utility Credentials variable in the Utility Credentials Unresolved field. Conversely, to change from using a Utility Credentials variable to using a Utility Credentials reference, you must change the Utility Credentials Variable field to No and specify the Utility Credentials reference in the Utility Credentials field.</p> </div>
<p>SAP Details (Enhanced View)</p>	<p>This section contains assorted detailed information about an SAP Task in Enhanced View.</p>
<ul style="list-style-type: none"> • Legacy View • Enhanced View 	<p>Specifies whether to display the SAP task in Legacy View or Enhanced View.</p> <p>Enhanced View runs as Command Group Submit with both Start and Wait options enabled automatically.</p>
<p>SAP Job Name</p>	<p>User defined name of the SAP Job.</p>
<p>SAP Job Class</p>	<p>Job class for the SAP Job. Options are:</p> <ul style="list-style-type: none"> • High Priority • Middle Priority • Low Priority
<p>SAP Target Server</p>	<p>SAP server on which the job should run.</p>
<p>Email Notification...</p>	<p>The Email Notification... button opens a dialog that allows you to set up email notifications.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p style="text-align: right; margin: 0;">✕</p> <p>Email Notification...</p> <p>Send Email <input type="text" value="Status Cancelled"/></p> <p>Email Language <input type="text" value=""/></p> <p>Email Recipient <input type="text" value=""/></p> <p style="text-align: center; margin-top: 10px;"><input type="button" value="Back"/></p> </div>
<p>Send Email</p>	<p>Specifies the circumstances in which to send the email notification. Options are:</p> <ul style="list-style-type: none"> • Status Cancelled • Status Completed and Cancelled • Never

<p>Email Language</p>	<p>Specifies the language of the email.</p> <p>Populate the drop-down list with options retrieved from the SAP system by clicking the refresh picker icon next to its drop-down list to display a Refresh Email Language Options... dialog.</p> <p>The fields on the Refresh Email Language Options... dialog are fields from the SAP Task Details, and the values for those fields in the dialog are, by default, the same as the values for the fields in the Details. You can keep the current values or change them from their drop-down lists.</p>
<p>Email Recipient</p>	<p>Specifies one or more email addresses.</p> <p>The addresses must be separated by a semicolon.</p>
<p>Spool List Recipient...</p>	<p>The Spool List Recipient... button opens a dialog that allows you to set up a spool list recipient.</p> 
<p>Type</p>	<p>Recipient type. Options are:</p> <ul style="list-style-type: none"> • -- None -- • SAP Username • External Addresses • Shared Distribution List • Private Distribution List • Fax Number • Internet Address • X.400 Address • Remote Mail Address
<p>Recipient</p>	<p>Recipient address.</p>
<p>Report Status by Email</p>	<p>For Type = External Addresses only, options are:</p> <ul style="list-style-type: none"> • --System Default-- • Always • Error • Never
<p>Report Send Status</p>	<p>For Type = External Addresses only, options are:</p> <ul style="list-style-type: none"> • --System Default-- • Always • Error • Never
<p>Copy</p>	<p>If selected, recipient will receive the document as a copy.</p>
<p>Blind Copy</p>	<p>If selected, recipient will receive the document as a blind copy.</p>
<p>Express</p>	<p>If selected, document will be sent to the recipient as an express message.</p>
<p>No Forwarding</p>	<p>If selected, recipient cannot forward the document to other users.</p>

SAP Connection	Name of the SAP connection . The SAP connection specifies information about the SAP server. Select an existing SAP Connection from the drop-down list or click the icon to create a new SAP Connection.
SAP Connection Variable	<p>Indication of whether the SAP Connection field is a reference field for selecting a specific SAP Connection (unchecked) or a text field for specifying the SAP Connection as a variable (checked). Use the format: <code>\${variable name}</code>. The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using an SAP Connection reference to using an SAP Connection variable, you must change the SAP Connection Variable field to Yes and specify the SAP Connection variable in the SAP Connection Unresolved field. Conversely, to change from using an SAP Connection variable to using an SAP Connection reference, you must change the SAP Connection Variable field to No and specify the SAP Connection reference in the SAP Connection field.</p> </div>
SAP Credentials	Login credentials that the Controller will use to access the SAP system. The credentials are stored in the Universal Controller credentials table; see Credentials .
SAP Credentials Variable	<p>Indication of whether the Credentials field is a reference field for selecting a specific Credential (unchecked) or a text field for specifying the Credential as a variable (checked). Use the format: <code>\${variable name}</code>.</p> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Credentials reference to using a Credentials variable, you must change the Credentials Variable field to Yes and specify the Credentials variable in the Credentials Unresolved field. Conversely, to change from using a Credentials variable to using a Credentials reference, you must change the Credentials Variable field to No and specify the Credentials reference in the Credentials field.</p> </div>
Start Immediately	Specification for whether or not to start the job immediately.
Use Application RC	Specification for whether or not to use application RC.
Delete SAP Job on Completion	Specification for whether or not to delete the SAP Job on completion.
SAP Command Options	Use this field to specify any additional command options supported by Universal Connector (USAP) .
Runtime Directory	Directory from which the application should be executed. Variables supported.
Environment Variables	<p>Allows you to enter environment variables needed by the program to run.</p> <p>To add a variable, click the + icon and enter a Name and Value. To delete a variable, select in the list of variables and click the - icon.</p> <p>You can add a maximum of 4,000 characters for the combined Names and Values of all variables. The variable is listed in the space underneath.</p>
SAP Print Parameters	This section contains assorted information about print parameters of an SAP Task in Enhanced View.

Print Job Log	Specification for whether or not to print the job log.
Print Spooled Output	Specification for whether or not to print the spooled output.
Print Application Log	Specification for whether or not to print the application log.
Print Application RC	Specification for whether or not to print the application RC.
SAP Wait Child Parameters	This section contains assorted information about wait child parameters of an SAP Task in Enhanced View.
Wait Child	Specification for whether or not to monitor child jobs.
Max Child Depth	Specifies the maximum depth of child processes that Universal Connector will monitor.
Job Log Child	Specifies whether or not to return job logs for child jobs. Options are: <ul style="list-style-type: none"> • Yes • No • Error
Spool List Child	Specification for whether or not to print the spool list for child jobs.
Purge Child	Specification for whether or not to purge all child jobs from the SAP system.
SAP Details (Legacy View)	This section contains assorted detailed information about an SAP Task in legacy view.
<ul style="list-style-type: none"> • Legacy View • Enhanced View 	Specifies whether to display the SAP task in Legacy View or Enhanced View. Enhanced View runs as Command Group Submit with both Start and Wait options enabled automatically.
SAP Connection	Name of the SAP connection . The SAP connection specifies information about the SAP server. Select an existing SAP Connection from the drop-down list or click the icon to create a new SAP Connection.
SAP Connection Variable	Indication of whether the SAP Connection field is a reference field for selecting a specific SAP Connection (unchecked) or a text field for specifying the SAP Connection as a variable (checked). Use the format: <code>\${variable name}</code> . The variable must be a supported type as described in Variables and Functions . <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using an SAP Connection reference to using an SAP Connection variable, you must change the SAP Connection Variable field to Yes and specify the SAP Connection variable in the SAP Connection Unresolved field. Conversely, to change from using an SAP Connection variable to using an SAP Connection reference, you must change the SAP Connection Variable field to No and specify the SAP Connection reference in the SAP Connection field.</p> </div>
SAP Language	SAP logon language used when executing the SAP task. Valid values are: <ul style="list-style-type: none"> • Any valid 1-character SAP language identifier. • Any valid 2-character ISO language identifier. • (no value). SAP will use the default language set up for the user. If there is no such default, the default is EN (English).
SAP Credentials	Login credentials that the Controller will use to access the SAP system. The credentials are stored in the Universal Controller credentials table; see Credentials .

SAP Credentials Variable	<p>Indication of whether the Credentials field is a reference field for selecting a specific Credential (unchecked) or a text field for specifying the Credential as a variable (checked). Use the format: <code>{variable name}</code> .</p> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Credentials reference to using a Credentials variable, you must change the Credentials Variable field to Yes and specify the Credentials variable in the Credentials Unresolved field. Conversely, to change from using a Credentials variable to using a Credentials reference, you must change the Credentials Variable field to No and specify the Credentials reference in the Credentials field.</p> </div>
SAP Job Name	Job name of the SAP job. Variables supported.
SAP Job ID	Job ID of the SAP job. Variables supported. Required for the Wait, Abort, Purge Job, and Display commands. See Universal Connector Commands , below, for SAP Job ID usage with the Run, Submit, Start, and Generate Job Definition commands.
SAP Process Chain Log ID	Log ID for process chain instance to be monitored to completion.
SAP InfoPackage Request ID	Request ID of the InfoPackage that is to be monitored.
Command Group	See Universal Connector Commands , below, for a description of all supported commands and their contingent fields (options).
SAP Command Options	Use this field to specify any additional command options supported by Universal Connector (USAP) .
Runtime Directory	Directory from which the application should be executed. Variables supported.
Environment Variables	Allows you to enter environment variables needed by the program to run. To add a variable, click the + icon and enter a Name and Value . To delete a variable, select in the list of variables and click the - icon. You can add a maximum of 4,000 characters for the combined Names and Values of all variables. The variable is listed in the space underneath.
Result Processing Details	This section contains assorted detailed information about result processing for this task.

Exit Code Processing	<p>Specifies how the Controller should determine whether the executed command failed or completed successfully.</p> <p>Options:</p> <ul style="list-style-type: none"> • Success Exitcode Range Command is considered completed successfully if its exit code falls within the range specified in the Exit Codes field. • Failure Exitcode Range Command is considered failed if its exit code falls within the range specified in the Exit Codes field. • Success Output Contains Command is considered completed successfully if its output contains the text specified in the Scan Output For field. • Failure Output Contains Command is considered failed if its output contains the text specified in the Scan Output For field. • Step Conditions (z/OS only) Command is considered completed successfully/failed if any of its specified condition codes falls within the range specified under the Step Conditions tab (see Creating Step Conditions).
Output Type	<p>Required if Exit Code Processing = Success Output Contains or Failure Output Contains; type of output.</p> <p>Options:</p> <ul style="list-style-type: none"> • Standard Output (STDOUT) • Standard Error (STDERR) • File • Extension
Scan Output For	<p>Required if Exit Code Processing = Success Output Contains or Failure Output Contains; text for which the Controller should scan the output file. The Controller will process this field as a regular expression.</p>
Output File (for Exit Code Processing)	<p>Required if Output Type = File; path and file name of the output file that should be scanned for the text in the Scan Output For field.</p>
Exit Codes	<p>Required if Exit Code Processing = Success Exitcode Range or Failure Exitcode Range; range of exit codes. Format: Numeric. Use commas to list a series of exit codes; use hyphens to specify a range. Example: 1,5, 22-30.</p> <p>Variables are supported.</p>
Automatic Output Retrieval	<p>Specifies whether you want the Controller to automatically retrieve any output from the job and attach it to the task instance record.</p> <p>Options:</p> <ul style="list-style-type: none"> • None Do not attach any output to the task instance record. • Standard Output Attach all standard output. • Standard Error Attach standard error output. • File Attach the file specified in the Output File field. • Standard Output/Error Attach all standard output and standard error output. <div style="border: 2px solid orange; padding: 10px; margin-top: 20px;"> <p>Note</p> <p>Tasks specifying Automatic Output Retrieval will fail with Start Failure if the Agent Output Prohibited field is true in the Details of the specified Agent.</p> </div>

Wait For Output	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error, and Failure Only is not enabled (checked); Specification that the task should wait for the requested output before completing.
Failure Only	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error, and Wait For Output is not enabled (checked); Indication for whether output should be retrieved on task failure only.
Start Line	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Instructs the Controller to retrieve data beginning at the line indicated. <ul style="list-style-type: none"> • If a Start Line value is not specified, the default is 1. • If the Start Line value is -1, data will be retrieved starting at the end of the file.
Number of Lines	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Allows you to limit the retrieved data to the number of lines specified. If a Number of Lines value is not specified, the default is the value of the Retrieve Output Default Number Of Lines Universal Controller system property.
Scan Text	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Regex pattern that the Controller will search for a match for in STDOUT/STDERR or a specified file. The Controller will include the Number of Lines above and below the first line matched. if the Regex pattern is not found, the following message is returned: OPSWISE WARNING - Scan text string not found.
Output File (for Automatic Output Retrieval)	Required if Automatic Output Retrieval = File; path and file name containing the output that you want automatically retrieved and attached to the task instance.
Retry Options	This section contains specifications for retrying the task.
Maximum Retries	User-defined; maximum number of times that the Controller should retry this task after it has started and gone to a failed state.
Retry Indefinitely	User-defined; indicates whether the Controller should continue trying indefinitely to run this task. If you enable this field, it overrides any value placed in the Maximum Retries field.
Retry Interval (Seconds)	User-defined; number of seconds between each retry.
Suppress Intermediate Failures	User-defined; If the task instance is in the Failed status , indicates whether or not the following will be suppressed until all scheduled retry attempts (a Maximum Retries value has been entered or Retry Indefinitely has been enabled) have been made: <ul style="list-style-type: none"> • All Actions (Abort, Email Notification, Set Variable, SNMP Notification, and System Operation) defined for the task instance on a Failed status. • Workflow conditional path processing; any Successors waiting on a failure path will not be released. • Task Monitors will not be notified of the Failed status. Also, any Task Monitor task that has a Time Scope in the past will disqualify any matching task instance in the past with a Failed status if the task instance is scheduled for automatic retry and for which Suppress Intermediate Failures has been enabled. • Any Workflow containing the Failed task instance will not transition to the Running/Problems status.
Wait / Delay Options	This section contains specifications for waiting to start and/or delaying on start the task.
Wait To Start	Amount of time to wait before starting a task from the time that it was launched. Options are: <ul style="list-style-type: none"> • – None – • Time • Relative Time • Duration • Seconds

Wait Time	If Wait To Start = Time or Relative Time; Number of hours and minutes to wait before starting the task.
Wait Day Constraint	<p>If Wait Time = Time or Relative Time; Specification for whether or not to advance the wait time to another day.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • -- None -- <ul style="list-style-type: none"> • If Wait To Start = Time; Advance to the next day if the specified wait time is before the time that the task instance is eligible to start; that is, all dependencies have been met. For example: it is not being held, and it is not waiting on any predecessors. • If Wait To Start = Relative Time; Advance to the next day if the specified wait time is before the task instance Trigger Time or, if there is no Trigger Time, before the task instance Launch Time. In the latter case, when a task instance is within a workflow, it will inherit the Launch Time of the top-level parent workflow task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. <p>Default is -- None --.</p>
Wait Duration	If Wait To Start = Duration; Number of days, hours, minutes, and seconds to wait before starting the task.
Wait Duration In Seconds	If Wait To Start = Seconds; Number of seconds to wait before starting the task.
Delay On Start	<p>Amount of time to delay the start of a task, after it has been launched, from the time that it is eligible to start; that is, all dependencies have been met. For example: it is not being held, it is not waiting on any predecessors, or there is no wait time specified.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- None -- • Duration • Seconds
Delay Duration	If Delay On Start = Duration; Number of days, hours, minutes, and seconds to delay after starting the task.
Delay Duration In Seconds	If Delay On Start = Seconds; Number of seconds to delay after starting the task.

Workflow Only	<p>Specification for whether or not to apply the Wait To Start and Delay On Start specifications only if the task is in a Workflow.</p> <p>Options are:</p> <ul style="list-style-type: none"> • -- System Default -- Apply the Wait To Start and Delay On Start specifications as defined by the System Default Wait/Delay Workflow Only system property. (Default is yes.) • Yes Apply the Wait To Start and Delay On Start specifications only if the task is in a Workflow. • No Apply the Wait To Start and Delay On Start specifications whether or not the task is in a Workflow.
Time Options	This section contains time-related specifications for the task.
Late Start	If enabled, and if the task instance starts after the time or period specified, the task instance is flagged as late. You can specify a time or duration to determine a late start (see Late Start Type). To determine whether a task instance started late, open the task instance and locate the Started Late field; the field is checked if the instance started after the specified time. The Started Late field displays in the task instance Details only if the user specified a Late Start in the task Details.
Late Start Type	<p>Required if Late Start is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • Time - Flag the task if it starts after the specified time. • Duration - Flag the task if it starts a certain amount of time after the programmed start time. The task must have a specific start time.
Late Start Time	If Late Start Type = Time; Time after which the task start time is considered late. Use HH:MM, 24-hour time.
Late Start Day Constraint	<p>If Late Start Type = Time; Specification for whether or not to advance the late start time to another day.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified late start time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. <p>Default is -- None --.</p>
Late Start Nth Amount	If Late Start Day Constraint = Nth Day; Number of days to advance.

Late Start Duration	<p>If Late Start Type = Duration; Duration (amount of relative time) after which the task is considered to have started late.</p> <p>For a task within a workflow, the duration is the period between the time the workflow starts and the time the task itself starts. For example, a task might have a Late Start Duration of 60 minutes. If the workflow starts at 9:00 a.m. but the task itself does not start until 10:30, the task has started late.</p> <p>For a task that is not within a workflow, Late Start Duration has meaning only if the task has been held upon starting. For example, if a task has a Late Start Duration of 60 minutes and the Hold on Start field is enabled, if the task is not released from hold within the amount of time specified in the Late Start Duration field, the task has started late.</p>
Late Finish	<p>If enabled, and if the task instance finishes after the time or period specified, the task instance is flagged as late. You can specify a time or duration to determine a late finish (see Late Finish Type). To determine whether a task instance finished late, open the task instance and locate the Finished Late field; the field is checked if the instance finished after the specified time or lasted longer than expected. This field only appears on the task instance if the user specified a Late Finish in the task definition.</p>
Late Finish Type	<p>Required if Late Finish is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • Time - Flag the task if it finishes after the specified time (see Late Finish Time). • Duration - Flag the task if it finishes a certain amount of time after the programmed finish time (see Late Finish Duration). The task must have a specific finish time. • Average Duration - Flag the task if it finishes before the average duration (see Average Instance Time) for the task, less an offset (see Late Finish Offset Type), if specified.
Late Finish Offset Type	<p>If Late Finish Type = Average Duration;</p> <p>Options:</p> <ul style="list-style-type: none"> • Percentage • Duration
Late Finish Percentage Offset (+)	<p>Required if Late Finish Offset Type = <i>Percentage</i>; Percentage of Average Duration to use as an offset. The late finish time is calculated by adding the offset to the Average Duration.</p>
Late Finish Duration Offset (+)	<p>Required if Late Finish Offset Type = <i>Duration</i>; Duration to use as an offset. The late finish time is calculated by adding the offset to the Average Duration.</p>
Late Finish Duration Offset Unit	<p>If Late Finish Offset Type = Duration;</p> <p>Options:</p> <ul style="list-style-type: none"> • Seconds • Minutes • Hours
Late Finish Time	<p>If Late Finish Type = Time; Time after which the task finish time is considered late. Use HH:MM, 24-hour time.</p>

Late Finish Day Constraint	If Late Finish Type = Time; Specification for whether or not to advance the late finish time to another day. Valid values: <ul style="list-style-type: none"> • – None – Advance to the next day if the specified late finish time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. Default is – None –.
Late Finish Nth Amount	If Late Finish Day Constraint = Nth Day; Number of days to advance.
Late Finish Duration	If Late Finish Type = Duration; Longest amount of time this task instance should take to run.
Early Finish	If enabled, and if the task instance finishes before the time or period specified, the task instance is flagged as early. You can specify a time or duration to determine an early finish (see Early Finish Type). To determine whether a task instance finished early, open the task instance and locate the Finished Early field; the field is checked if the instance finished before the specified time or did not last as long as expected. This field only appears on the task instance if the user added Early Finish specifications to the task definition.
Early Finish Type	Required if Early Finish is enabled. Options: <ul style="list-style-type: none"> • Time - Flag the task if it finishes before the specified time (see Early Finish Time). • Duration - Flag the task if it finishes a certain amount of time before the programmed finish time (see Early Finish Duration). The task must have a specific finish time. • Average Duration - Flag the task if it finishes before the average duration (see Average Instance Time) for the task, less an offset (see Early Finish Offset Type), if specified.
Early Finish Offset Type	If Early Finish Type = Average Duration; Options: <ul style="list-style-type: none"> • Percentage • Duration
Early Finish Percentage Offset (-)	Required if Early Finish Offset Type = <i>Percentage</i> ; Percentage of Average Duration to use as an offset. The early finish time is calculated by subtracting the offset from the Average Duration .
Early Finish Duration Offset (-)	Required if Early Finish Offset Type = <i>Duration</i> ; Duration to use as an offset. The early finish time is calculated by subtracting the offset from the Average Duration .

Early Finish Duration Offset Unit	If Early Finish Offset Type = Duration; Options: <ul style="list-style-type: none"> • Seconds • Minutes • Hours
Early Finish Time	If Early Finish Type = Time; Time before which the task finish time is considered early. That is, enter a time at which the task should still be running. Use HH:MM, 24-hour time.
Early Finish Day Constraint	If Early Finish Type = Time; Specification for whether or not to advance the early finish time to another day. Valid values: <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified early finish time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. Default is -- None --.
Early Finish Nth Amount	If Early Finish Day Constraint = Nth Day; Number of days to advance.
Early Finish Duration	If Early Finish Type = Duration; Shortest amount of time this task instance should take to run.
User Estimated Duration	Required if Early Finish Type or Late Finish Type = Average Duration; Estimated amount of time it should normally take to run this task. The Controller uses this information to calculate the User Estimated End Time on a task instance record. User Estimated Duration is used when the Average Duration is not available; for example, on the first launch of a task.
Critical Path Options	This section contains Critical Path-related specifications for the task.
CP Duration	Optional; Allows you to override the estimated Critical Path Duration of the task when running in a Workflow; used in conjunction with the CP Duration Unit field. In most cases, this field should be left blank, which implies that the Controller will estimate the Critical Path Duration based on historical executions. Valid values are any integer equal to or greater than 0. Variables and Functions are supported.
CP Duration (Resolved)	Displays the current resolved value of the CP Duration field, which may contain variables or functions that will be displayed as unresolved until the task instance starts. The CP Duration (Resolved) field can continue to change value until the task instance starts, at which time CP Duration will display as resolved and CP Duration (Resolved) will no longer be visible unless there was an issue resolving the variables and/or functions contained within CP Duration . If the Controller is unable to resolve CP Duration or it resolves to an invalid value, CP Duration will be ignored and the Controller will estimate the Critical Path Duration based on historical executions.

CP Duration Unit	<p>Type of CP Duration; used in conjunction with the CP Duration field. For example, for a CP Duration of two minutes, specify 2 in the CP Duration field and select Minutes in this field.</p> <p>Options:</p> <ul style="list-style-type: none"> • Seconds • Minutes • Hours <p>Default is Minutes.</p>
Workflow Execution Options	This section contains Execution Restriction specifications for the task if it is within a Workflow.
Execution Restriction	<p>Specification for whether or not there is a restriction for this task to be run, skipped, or held.</p> <p>Options are:</p> <ul style="list-style-type: none"> • – None – No restriction for this task. • Run Restriction for when this task will be run. • Skip Restriction for when this task will be skipped. • Hold Restriction for when this task will be held. <p>If Execution Restriction on a task is Run or Skip, then when it is part of a Workflow that is being launched, the Restriction Period is evaluated. The task instance will be skipped if Execution Restriction is Skip and the date is within the Restriction Period or Execution Restriction is Run and the date is not within the Restriction Period. Execution Restriction can be set to Skip with a Restriction Period of - None -, meaning the restriction is always active and the task will be skipped when it is part of a Workflow.</p>
Restriction Period	<p>If Execution Restriction = Run, Skip, or Hold; Period of time when the task is restricted.</p> <p>Options are:</p> <ul style="list-style-type: none"> • – None – No period of restriction for this task. • Before Restriction is valid if the date is before the Before Date value. • After Restriction is valid if the date is after the After Date value. • Span Restriction is valid if the date is before the Before Date value and after After Date value. • On Restriction is valid if the date is one of the Date List values.
Before Date	If Restriction Period = Before or Span; Date before which the restriction is valid.
Before Time	If Restriction Period = Before or Span; Time on the selected date before which the restriction is valid.
After Date	If Restriction Period = After or Span; Date after which the restriction is valid.
After Time	If Restriction Period = After or Span; Time on the selected date after which the restriction is valid.
Date List	If Restriction Period = On; Date(s) on which the restriction is valid.
Self-Service Options	This section contains Self-Service specifications for the task.
Enforce Variables	Specifies whether or not to enforce Launch with Variables... when launching a task using the User Interface.
Lock Variables	Specifies whether or not to prevent editing variables when using Launch with Variables... from the User Interface.
Statistics	This section contains time-related statistics for task instances of the task.
First Execution	System-supplied; End Time of the first instance of this task to complete.

Last Execution	System-supplied; End Time of the last instance of this task to complete.
Last Instance Duration	System-supplied; Amount of time the task took to run the last time it ran.
Lowest Instance Time	System-supplied; Lowest amount of time this task has taken to run.
Average Instance Time	System-supplied; Average amount of time this task takes to run.
Highest Instance Time	System-supplied; Highest amount of time this task has taken to run.
Number of Instances	System-supplied; Number of instances in the database for this task.
Metadata	This section contains Metadata information about this record.
UUID	Universally Unique Identifier of this record.
Updated By	Name of the user that last updated this record.
Updated	Date and time that this record was last updated.
Created By	Name of the user that created this record.
Created	Date and time that this record was created.
Buttons	This section identifies the buttons displayed above and below the Task Details that let you perform various actions.
Save	Saves a new task record in the Controller database.
Save & New	Saves a new record in the Controller database and redisplay empty Details so that you can create another new record.
Save & View	Saves a new record in the Controller database and continues to display that record.
New	Displays empty (except for default values) Details for creating a new task.
Update	Saves updates to the record.
Launch	Manually launches the task.
View Parents	Displays a list of any parent Workflow tasks for this task.
Copy	Creates a copy of this task, which you are prompted to rename.
Delete	<p>Deletes the current record.</p> <div style="border: 2px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>You cannot delete a task if it is either:</p> <ul style="list-style-type: none"> • Specified in an enabled Trigger. • The only task specified in a disabled Trigger. </div>
Refresh	Refreshes any dynamic data displayed in the Details.
Close	For pop-up view only; closes the pop-up view of this task.

Tabs	This section identifies the tabs across the top of the Task Details that provide access to additional information about the task instance.										
Job Steps	For Enhanced View only; Lists all Job Steps defined for this task.										
Variables	Lists all user-defined variables associated with this record; that is, variables that have been defined for this specific record.										
Actions	<p>Allows you to specify actions that the Controller will take automatically based on events that occur during the execution of this task.</p> <p>Events are:</p> <ul style="list-style-type: none"> • Task instance status • Exit codes • Late start • Late finish • Early finish <p>Actions are:</p> <table border="1"> <tr> <td>Abort Action</td> <td>Abort the task if certain events occur. For details, see Abort Actions.</td> </tr> <tr> <td>Email Notification</td> <td>Send an email if certain events occur. For details, see Email Notification Actions.</td> </tr> <tr> <td>Set Variable</td> <td>Used in tasks and workflows to set a variable based on the occurrence of certain events. For details, see Creating a Set Variable Action within a Task or Workflow.</td> </tr> <tr> <td>SNMP Notification</td> <td>Send an email if certain events occur. For details, see SNMP Notification Actions.</td> </tr> <tr> <td>System Operation</td> <td>Run an Universal Controller system operation based on specified conditions. For details, see System Operation Actions.</td> </tr> </table>	Abort Action	Abort the task if certain events occur. For details, see Abort Actions .	Email Notification	Send an email if certain events occur. For details, see Email Notification Actions .	Set Variable	Used in tasks and workflows to set a variable based on the occurrence of certain events. For details, see Creating a Set Variable Action within a Task or Workflow .	SNMP Notification	Send an email if certain events occur. For details, see SNMP Notification Actions .	System Operation	Run an Universal Controller system operation based on specified conditions. For details, see System Operation Actions .
Abort Action	Abort the task if certain events occur. For details, see Abort Actions .										
Email Notification	Send an email if certain events occur. For details, see Email Notification Actions .										
Set Variable	Used in tasks and workflows to set a variable based on the occurrence of certain events. For details, see Creating a Set Variable Action within a Task or Workflow .										
SNMP Notification	Send an email if certain events occur. For details, see SNMP Notification Actions .										
System Operation	Run an Universal Controller system operation based on specified conditions. For details, see System Operation Actions .										
Virtual Resources	<p>Lists all Virtual Resources to which this task is assigned.</p> <p>If you want to create a Task Virtual Resource for this task, you can select an existing Virtual Resource (or, optionally, first create a new Virtual Resource and then select it as the Task Virtual Resource) or enter a Virtual Resource variable. The variable must be a supported type as described in Variables and Functions.</p>										
Mutually Exclusive	Lists all tasks that have been set to be mutually exclusive of this task.										
Instances	Lists all instances of the task.										
Triggers	List of all triggers that reference this task in the Task(s) field of the trigger Details; that is, a list of all triggers that have been defined to launch this task. Also allows you to add new triggers. If you add a new trigger from this location, the Controller automatically constructs a default trigger name as follows: <current task name>#TRIGGER#. You can change the default name if desired. For instructions on creating triggers, see Triggers .										
Notes	Lists all notes associated with this record.										
Versions	Stores copies of all previous versions of the current record. See Record Versioning .										

8.5 Viewing an SAP Task Instance

When an SAP task is launched, the Controller creates a task instance record of that task.

A task instance contains detailed information about a single execution of that task.

You can access a task instance from:

- **Instances tab** on the [SAP Task Details](#) for that task
- [Activity Monitor](#)
- [Task Instances list](#)

8.5.1 SAP Task Instance Details

The following SAP Task Instance Details contains information on the execution of the task shown in the [SAP Task Details](#).

Re-run Retrieve Output... SAP

SAP Task Instance
Job Steps
Actions
Virtual Resources
Exclusive Requests
Output
Notes

General

Instance Name	Instance Number
<input style="width: 95%;" type="text" value="stonebranch-saptask-01"/>	<input style="width: 95%;" type="text" value="1"/>
Description	
<input style="width: 98%; height: 20px;" type="text"/>	
Member of Business Services	
<input style="width: 98%; height: 20px;" type="text"/>	
Task	Source Version
<input style="width: 95%;" type="text" value="stonebranch-saptask-01"/>	<input style="width: 95%;" type="text" value="2"/>
Launch Source	
<input style="width: 95%;" type="text" value="Launch Task / User Interface"/>	
Invoked By	Execution User
<input style="width: 95%;" type="text" value="Manually Launched"/>	<input style="width: 95%;" type="text" value="Admin"/>
Calendar	Time Zone Preference
<input style="width: 95%;" type="text" value="System Default"/>	<input style="width: 95%;" type="text" value="-- System Default --"/>
Virtual Resource Priority	Hold Resources on Failure
<input style="width: 95%;" type="text" value="10"/>	<input type="checkbox"/>
Mutually Exclusive With Self	Simulate
<input type="checkbox"/>	<input type="checkbox"/>
Previous Instance Wait Resolved	
<input style="width: 95%;" type="text" value="-- None --"/>	

Status

Status	Exit Code
<input style="width: 95%;" type="text" value="Finished"/>	<input style="width: 95%;" type="text" value="0"/>
Status Description	
<input style="width: 98%; height: 20px;" type="text" value="Agent is not Active -> State was forced from UNDELIVERABLE to FINISHED"/>	
Operational Memo	
<input style="width: 98%; height: 20px;" type="text"/>	
Trigger Time	Launch Time
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text" value="2023-09-28 13:57:40 -0400"/>
Wait Until Time	
<input style="width: 95%;" type="text"/>	
Start Time	End Time
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text" value="2023-09-28 13:57:48 -0400"/>
Duration	Process ID
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>

Agent Details

Cluster	
<input type="checkbox"/>	
Utility Agent *	Utility Agent Variable
<input style="width: 95%;" type="text" value="qa-agentsim1 - simagent1"/>	<input type="checkbox"/>
Utility Credentials	Utility Credentials Variable
<input style="width: 95%;" type="text"/>	<input type="checkbox"/>

SAP Details

Legacy View Enhanced View

SAP Job Name *	
<input style="width: 95%;" type="text" value="SAP Job_01"/>	
SAP Job Class	<input type="button" value="Email Notification..."/>
<input style="width: 95%;" type="text" value="Low Priority"/>	
SAP Target Server	<input type="button" value="Spool List Recipient..."/>
<input style="width: 95%;" type="text"/>	
SAP Connection	SAP Credentials *
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>

8.5.2 SAP Task Instance Details Field Descriptions

The following table describes the fields, buttons, and tabs that display in SAP Task Instance Details.

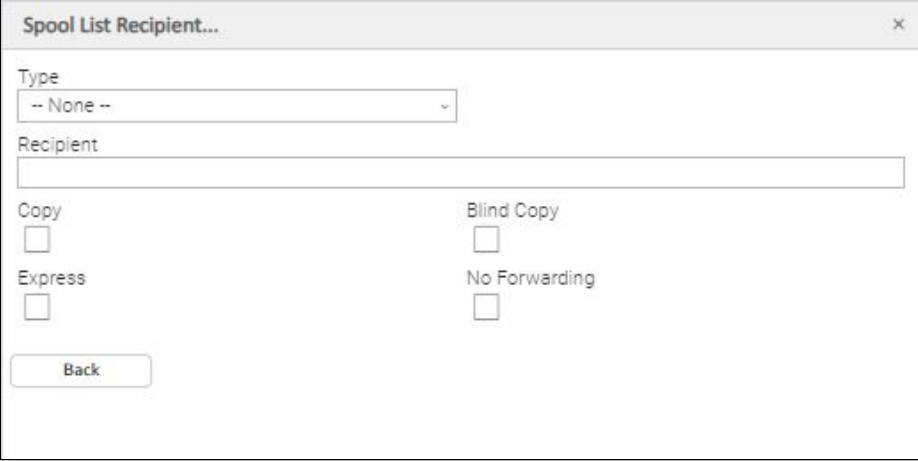
Field Name	Description
General	This section contains general information about the task instance.
Instance Name	Name of this task instance.
Instance Number	System-supplied; Sequentially assigned number, maintained per task, representing the creation order of the instance.
Description	Description of this record. (Maximum = 255 characters.)
Member of Business Services	<p>User-defined; Allows you to select one or more Business Services that this record belongs to. (You also can Check All or Uncheck All Business Services for this record.)</p> <p>You can select up to 62 Business Services for any record type, and enter a maximum of 2048 characters for each Business Service.</p> <p>If the Business Service Visibility Restricted Universal Controller system property is set to true, depending on your assigned (or inherited) Permissions or Roles, Business Services available for selection may be restricted.</p>
Task	Name of the task that was run to create this task instance. Click the icon to display Task Details for the task.
Source Version	Version of the task that was run to create this task instance.

<p>Launch Source</p>	<p>System-supplied; Source from which this task was launched.</p> <p>Options:</p> <ul style="list-style-type: none"> • Scheduled Trigger If the instance was directly launched by a scheduled trigger, the Trigger (trigger_id) column is assigned the UUID of the scheduled trigger. • Trigger Monitor If the instance is a monitor associated with monitor trigger, the Trigger (trigger_id) column is assigned the UUID of the monitor trigger. • Trigger Now / User Interface If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger. • Trigger Now / System Operation If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger and the Source Instance (source_instance) column will be assigned the UUID of the instance invoking the System Operation. • Trigger Now / Web Service If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger. • Trigger Now / Command Line If the instance was directly launched by a Trigger Now command, the Trigger (trigger_id) column is assigned the UUID of the trigger. • Workflow If the instance was launched by a workflow, the Workflow (workflow_id) column is assigned the UUID of the workflow instance. Likewise, the Source Instance (source_instance) column will also be assigned the UUID of the workflow instance. • Launch Task / User Interface If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be null. • Launch Task / System Operation If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be assigned the UUID of the instance invoking the System Operation. • Launch Task / Web Service If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be null. • Launch Task / Command Line If the instance was directly launched by the Launch Task command, the Source Instance (source_instance) column will be null. • Recurring If the instance was directly launched by a Recurring Task Instance, the Source Instance (source_instance) column will be assigned the UUID of the Recurring Task Instance.
<p>Source Instance</p>	<p>System-supplied; UUID of the source instance.</p> <ul style="list-style-type: none"> • If the instance was directly launched by a Trigger Now command; the UUID of the instance invoking the System Operation. • If the instance was launched by a workflow; the UUID of the workflow instance. • If the instance was directly launched by the Launch Task command; the UUID of the instance invoking the System Operation. • If the instance was directly launched by a Recurring Task Instance; the UUID of the Recurring Task Instance.
<p>Invoked by</p>	<p>System-supplied; how the task instance was launched.</p> <p>Options:</p> <ul style="list-style-type: none"> • Trigger: (Trigger Name) Instance was launched by the named trigger. • Workflow: (Workflow Name) Instance was launched by the named workflow. • Manually Launched Instance was launched by a user. To identify the user, check the Execution User column for that task instance on the Task Instances screen or, on most task instance screens, the Execution User field.

Execution User	System-supplied; If the task was launched manually; ID of the user who launched it.
Calendar	Calendar associated with the task instance.
Time Zone Preference	User-defined; Allows you to specify the time zone that will be applied to the task. Options: <ul style="list-style-type: none"> • – System Default – Time zone is based on the value of the Task Time Zone Preference Universal Controller system property: Server or Inherited. • Server (xxx) Where (xxx) is the time zone ID of the server; time zone is evaluated in the time zone of the server. • Inherited Time zone is evaluated in the time zone of the Parent Workflow or Trigger / Launch specification in the case there is no Parent Workflow.
Virtual Resource Priority	Priority for acquiring a resource when two or more tasks are waiting for the resource. This priority applies to all resources required by the task. Options: 1 (high) - 100 (low). Default is 10.
Hold Resources on Failure	If enabled, the task instance will continue to hold Renewable resources if the task instance fails. Renewable resources will be returned only if the task instance status is either Complete, Finished, or Skipped.
Mutually Exclusive With Self	If enabled, the task will not be allowed to run concurrently with itself. Task will not start until the instance that is running finishes. An instance will transition to Exclusive Wait status if it cannot start due to another instance already running.
Simulate	Specifies if the instance should execute under simulation mode .
Status	This section contains information about the current status of the task instance.
Status	System-supplied; see Task Instance Statuses .
Exit Code	System-supplied; the exit code captured by the Agent when executing the task (for example, a command or script).
Status Description	System-supplied; additional information, if any, about the status of the task instance.
Operational Memo	User-defined operational memo.
Evaluation Time	If time zone of user is different than time zone of task instance; Time at which Execution Restrictions and Run Criteria were evaluated based upon the requested time zone. (Time zone of task instance displays in parentheses.)
Critical	Indicates that this task is in the Critical Path of a workflow.
Critical Endpoint	Indicates that this task was defined as a Critical Endpoint of a Critical Path in a workflow.
Wait Until Time	Amount of time calculated to wait before the task was started, based on Wait To Start and Delay On Start times.
Queued Time	System-supplied; Date and time the task was queued for processing.
Trigger Time	System-supplied; Date and time the task instance was triggered.
Launch Time	System-supplied; Date and time the task instance was launched.
Start Time	System-supplied; Date and time the task instance started.

End Time	System-supplied; Date and time the task instance completed.
Duration	System-supplied; amount of time the task instance took to run.
Process ID	System-supplied; ID of the process that was launched.
Agent Details	This section contains assorted detailed information about the Agent / Agent Cluster selected for this task.
Cluster	Indication that selecting a Utility Agent Cluster is required. If Cluster is selected, selecting a Utility Agent is not required unless Utility Agent Variable is selected.
Utility Agent	Name of the Agent resource that identifies the machine where the operation will run. If you do not specify a Utility Agent, you must specify a Utility Agent Cluster or Utility Cluster Broadcast .
Utility Agent Variable	<p>If enabled, the Utility Agent field converts from a reference field (where you browse and select a record) into a text field that allows you to enter a variable. Use the format:</p> <pre> \${variable name}. </pre> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Utility Agent reference to using a Utility Agent variable, you must change the Utility Agent Variable field to Yes and specify the Utility Agent variable in the Utility Agent Unresolved field. Conversely, to change from using a Utility Agent variable to using a Utility Agent reference, you must change the Utility Agent Variable field to No and specify the Utility Agent reference in the Utility Agent field.</p> </div>
Utility Agent Cluster	If Cluster is selected; Group of Agents, one of which the Controller will choose to run this task. You can specify a Utility Agent Cluster in addition to or in place of a specific Utility Agent. If you specify a Utility Agent and a Utility Agent Cluster, the Controller first tries to run the task on the specific Utility Agent. If the Utility Agent is not available, the Controller reverts to the Utility Agent Cluster. See Agent Clusters for more information.
Utility Agent Cluster Variable	<p>Indication of whether the Utility Agent Cluster field is a reference field for selecting a specific Agent Cluster (unchecked) or a text field for specifying the Utility Agent Cluster as a variable (checked). Use the format:</p> <pre> \${variable name}. </pre> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Utility Agent Cluster reference to using a Utility Agent Cluster variable, you must change the Utility Agent Cluster Variable field to Yes and specify the Utility Agent Cluster variable in the Utility Agent Cluster Unresolved field. Conversely, to change from using a Utility Agent Cluster variable to using a Utility Agent Cluster reference, you must change the Utility Agent Cluster Variable field to No and specify the Utility Agent Cluster reference in the Utility Agent Cluster field.</p> </div>
Utility Credentials	Login credentials that the Agent will use to access the Universal Command server machine. Required if the Agent Credentials Required Universal Controller system property is true.

<p>Utility Credentials Variable</p>	<p>Indication of whether the Utility Credentials field is a reference field for selecting a specific Credential (unchecked) or a text field for specifying the Utility Credentials as a variable (checked). Use the format: <code>\${variable name}</code>. The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Utility Credentials reference to using a Utility Credentials variable, you must change the Utility Credentials Variable field to Yes and specify the Utility Credentials variable in the Utility Credentials Unresolved field. Conversely, to change from using a Utility Credentials variable to using a Utility Credentials reference, you must change the Utility Credentials Variable field to No and specify the Utility Credentials reference in the Utility Credentials field.</p> </div>
<p>SAP Details (Enhanced View)</p>	<p>This section contains assorted detailed information about an SAP Task in Enhanced View.</p>
<ul style="list-style-type: none"> • Legacy View • Enhanced View 	<p>Specifies whether to display the SAP task in Legacy View or Enhanced View. Enhanced View runs as Command Group Submit with both Start and Wait options enabled automatically.</p>
<p>SAP Job Name</p>	<p>User defined name of the SAP Job.</p>
<p>SAP Job Class</p>	<p>Job class for the SAP Job. Options are:</p> <ul style="list-style-type: none"> • High Priority • Middle Priority • Low Priority
<p>SAP Target Server</p>	<p>SAP server on which the job should run.</p>
<p>Email Notification...</p>	<p>The Email Notification... button opens a dialog that allows you to set up email notifications.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p style="text-align: center; margin: 0;">Email Notification... ✕</p> <p>Send Email <input type="text" value="Status Cancelled"/></p> <p>Email Language <input type="text" value=""/>🔄</p> <p>Email Recipient <input type="text"/></p> <p style="text-align: center; margin-top: 10px;"><input type="button" value="Back"/></p> </div>
<p>Send Email</p>	<p>Specifies the circumstances in which to send the email notification. Options are:</p> <ul style="list-style-type: none"> • Status Cancelled • Status Completed and Cancelled • Never
<p>Email Language</p>	<p>Specifies the language of the email.</p> <p>Populate the drop-down list with options retrieved from the SAP system by clicking the refresh picker icon next to its drop-down list to display a Refresh Email Language Options... dialog.</p> <p>The fields on the Refresh Email Language Options... dialog are fields from the SAP Task Details, and the values for those fields in the dialog are, by default, the same as the values for the fields in the Details. You can keep the current values or change them from their drop-down lists.</p>

Email Recipient	Specifies one or more email addresses. The addresses must be separated by a semicolon.
Spool List Recipient...	<p>The Spool List Recipient... button opens a dialog that allows you to set up a spool list recipient.</p> 
Type	<p>Recipient type. Options are:</p> <ul style="list-style-type: none"> • -- None -- • SAP Username • External Addresses • Shared Distribution List • Private Distribution List • Fax Number • Internet Address • X.400 Address • Remote Mail Address
Recipient	Recipient address.
Report Status by Email	<p>For Type = External Addresses only, options are:</p> <ul style="list-style-type: none"> • --System Default-- • Always • Error • Never
Report Send Status	<p>For Type = External Addresses only, options are:</p> <ul style="list-style-type: none"> • --System Default-- • Always • Error • Never
Copy	If selected, recipient will receive the document as a copy.
Blind Copy	If selected, recipient will receive the document as a blind copy.
Express	If selected, document will be sent to the recipient as an express message.
No Forwarding	If selected, recipient cannot forward the document to other users.
SAP Connection	Name of the SAP connection . The SAP connection specifies information about the SAP server. Select an existing SAP Connection from the drop-down list or click the icon to create a new SAP Connection.

SAP Connection Variable	<p>Indication of whether the SAP Connection field is a reference field for selecting a specific SAP Connection (unchecked) or a text field for specifying the SAP Connection as a variable (checked). Use the format: <code>\${variable name}</code>. The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using an SAP Connection reference to using an SAP Connection variable, you must change the SAP Connection Variable field to Yes and specify the SAP Connection variable in the SAP Connection Unresolved field. Conversely, to change from using an SAP Connection variable to using an SAP Connection reference, you must change the SAP Connection Variable field to No and specify the SAP Connection reference in the SAP Connection field.</p> </div>
SAP Credentials	<p>Login credentials that the Controller will use to access the SAP system. The credentials are stored in the Universal Controller credentials table; see Credentials.</p>
SAP Credentials Variable	<p>Indication of whether the Credentials field is a reference field for selecting a specific Credential (unchecked) or a text field for specifying the Credential as a variable (checked). Use the format: <code>\${variable name}</code>.</p> <p>The variable must be a supported type as described in Variables and Functions.</p> <div style="border: 1px solid orange; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Credentials reference to using a Credentials variable, you must change the Credentials Variable field to Yes and specify the Credentials variable in the Credentials Unresolved field. Conversely, to change from using a Credentials variable to using a Credentials reference, you must change the Credentials Variable field to No and specify the Credentials reference in the Credentials field.</p> </div>
Start Immediately	<p>Specification for whether or not to start the job immediately.</p>
Use Application RC	<p>Specification for whether or not to use application RC.</p>
Delete SAP Job on Completion	<p>Specification for whether or not to delete the SAP Job on completion.</p>
SAP Command Options	<p>Use this field to specify any additional command options supported by Universal Connector (USAP).</p>
Runtime Directory	<p>Directory from which the application should be executed. Variables supported.</p>
Environment Variables	<p>Allows you to enter environment variables needed by the program to run.</p> <p>To add a variable, click the + icon and enter a Name and Value. To delete a variable, select in the list of variables and click the - icon.</p> <p>You can add a maximum of 4,000 characters for the combined Names and Values of all variables. The variable is listed in the space underneath.</p>
SAP Print Parameters	<p>This section contains assorted information about print parameters of an SAP Task in Enhanced View.</p>

Print Job Log	Specification for whether or not to print the job log.
Print Spooled Output	Specification for whether or not to print the spooled output.
Print Application Log	Specification for whether or not to print the application log.
Print Application RC	Specification for whether or not to print the application RC.
SAP Wait Child Parameters	This section contains assorted information about wait child parameters of an SAP Task in Enhanced View.
Wait Child	Specification for whether or not to monitor child jobs.
Max Child Depth	Specifies the maximum depth of child processes that Universal Connector will monitor.
Job Log Child	Specifies whether or not to return job logs for child jobs. Options are: <ul style="list-style-type: none"> • Yes • No • Error
Spool List Child	Specification for whether or not to print the spool list for child jobs.
Purge Child	Specification for whether or not to purge all child jobs from the SAP system.
SAP Details (Legacy View)	This section contains assorted detailed information about the task instance in legacy view.
<ul style="list-style-type: none"> • Legacy View • Enhanced View 	Specifies whether to display the SAP task in Legacy View or Enhanced View. Enhanced View runs as Command Group Submit with both Start and Wait options enabled automatically.
SAP Connection	Name of the SAP connection . The SAP connection specifies information about the SAP server. Select an existing SAP Connection from the drop-down list or click the icon to create a new SAP Connection.
SAP Connection Variable	Indication of whether the SAP Connection field is a reference field for selecting a specific SAP Connection (unchecked) or a text field for specifying the SAP Connection as a variable (checked). Use the format: <code>\${variable name}</code> . The variable must be a supported type as described in Variables and Functions . <div style="border: 2px solid yellow; padding: 10px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using an SAP Connection reference to using an SAP Connection variable, you must change the SAP Connection Variable field to Yes and specify the SAP Connection variable in the SAP Connection Unresolved field. Conversely, to change from using an SAP Connection variable to using an SAP Connection reference, you must change the SAP Connection Variable field to No and specify the SAP Connection reference in the SAP Connection field.</p> </div>
SAP Language	SAP logon language used when executing the SAP task. Valid values are: <ul style="list-style-type: none"> • Any valid 1-character SAP language identifier. • Any valid 2-character ISO language identifier. • (no value). SAP will use the default language set up for the user. If there is no such default, the default is EN (English).
SAP Credentials	Login credentials that the Controller will use to access the SAP system. The credentials are stored in the Universal Controller credentials table; see Credentials .

SAP Credentials Variable	Indication of whether the Credentials field is a reference field for selecting a specific Credential (unchecked) or a text field for specifying the Credential as a variable (checked). Use the format: <code>\${variable name}</code> . The variable must be a supported type as described in Variables and Functions . <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Note</p> <p>When updating multiple Tasks, to change from using a Credentials reference to using a Credentials variable, you must change the Credentials Variable field to Yes and specify the Credentials variable in the Credentials Unresolved field. Conversely, to change from using a Credentials variable to using a Credentials reference, you must change the Credentials Variable field to No and specify the Credentials reference in the Credentials field.</p> </div>
SAP Job Name	Job name of the SAP job. Variables supported.
SAP Job ID	Job ID of the SAP job. Variables supported. Required for the Wait, Abort, Purge Job, and Display commands. See Universal Connector Commands , below, for SAP Job ID usage with the Run, Submit, Start, and Generate Job Definition commands.
SAP Process Chain Log ID	Log ID for process chain instance to be monitored to completion.
SAP InfoPackage Request ID	Request ID of the InfoPackage that is to be monitored.
Command Group	See Universal Connector Commands , below, for a description of all supported commands and their contingent fields (options).
SAP Command Options	Use this field to specify any additional command options supported by Universal Connector (USAP) .
Runtime Directory	Directory from which the application should be executed. Variables supported.
Environment Variables	Allows you to enter environment variables needed by the program to run. To add a variable, click the + icon and enter a Name and Value . To delete a variable, select in the list of variables and click the - icon. You can add a maximum of 4,000 characters for the combined Names and Values of all variables. The variable is listed in the space underneath.
Result Processing Details	This section contains assorted detailed information about result processing for this task.

<p>Exit Code Processing</p>	<p>Specifies how the Controller should determine whether the executed command failed or completed successfully.</p> <p>Options:</p> <ul style="list-style-type: none"> • Success Exitcode Range Command is considered completed successfully if its exit code falls within the range specified in the Exit Codes field. • Failure Exitcode Range Command is considered failed if its exit code falls within the range specified in the Exit Codes field. • Success Output Contains Command is considered completed successfully if its output contains the text specified in the Scan Output For field. • Failure Output Contains Command is considered failed if its output contains the text specified in the Scan Output For field. • Step Conditions (z/OS only) Command is considered completed successfully/failed if any of its specified condition codes falls within the range specified under the Step Conditions tab (see Creating Step Conditions).
<p>Output Type</p>	<p>Required if Exit Code Processing = Success Output Contains or Failure Output Contains; type of output.</p> <p>Options:</p> <ul style="list-style-type: none"> • Standard Output (STDOUT) • Standard Error (STDERR) • File • Extension
<p>Scan Output For</p>	<p>Required if Exit Code Processing = Success Output Contains or Failure Output Contains; text for which the Controller should scan the output file. The Controller will process this field as a regular expression.</p>
<p>Output File (for Exit Code Processing)</p>	<p>Required if Output Type = File; path and file name of the output file that should be scanned for the text in the Scan Output For field.</p>
<p>Exit Codes</p>	<p>Required if Exit Code Processing = Success Exitcode Range or Failure Exitcode Range; range of exit codes. Format: Numeric. Use commas to list a series of exit codes; use hyphens to specify a range. Example: 1,5, 22-30.</p> <p>Variables are supported.</p>
<p>Automatic Output Retrieval</p>	<p>Specifies whether you want the Controller to automatically retrieve any output from the job and attach it to the task instance record.</p> <p>Options:</p> <ul style="list-style-type: none"> • None Do not attach any output to the task instance record. • Standard Output Attach all standard output. • Standard Error Attach standard error output. • File Attach the file specified in the Output File field. • Standard Output/Error Attach all standard output and standard error output. <div style="border: 2px solid orange; padding: 10px; margin-top: 20px;"> <p>Note</p> <p>Tasks specifying Automatic Output Retrieval will fail with Start Failure if the Agent Output Prohibited field is true in the Details of the specified Agent.</p> </div>

Wait For Output	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error, and Failure Only is not enabled (checked); Specification that the task should wait for the requested output before completing.
Failure Only	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error, and Wait For Output is not enabled (checked); Indication for whether output should be retrieved on task failure only.
Start Line	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Instructs the Controller to retrieve data beginning at the line indicated. <ul style="list-style-type: none"> • If a Start Line value is not specified, the default is 1. • If the Start Line value is -1, data will be retrieved starting at the end of the file.
Number of Lines	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Allows you to limit the retrieved data to the number of lines specified. If a Number of Lines value is not specified, the default is the value of the Retrieve Output Default Number Of Lines Universal Controller system property.
Scan Text	If Automatic Output Retrieval = Standard Output, Standard Error, File, or Standard Output/Error; Regex pattern that the Controller will search for a match for in STDOUT/STDERR or a specified file. The Controller will include the Number of Lines above and below the first line matched. if the Regex pattern is not found, the following message is returned: OPSWISE WARNING - Scan text string not found.
Output File (for Automatic Output Retrieval)	Required if Automatic Output Retrieval = File; path and file name containing the output that you want automatically retrieved and attached to the task instance.
Retry Options	This section contains specifications for retrying the task.
Maximum Retries	User-defined; maximum number of times that the Controller should retry this task after it has started and gone to a failed state.
Retry Indefinitely	User-defined; indicates whether the Controller should continue trying indefinitely to run this task. If you enable this field, it overrides any value placed in the Maximum Retries field.
Retry Interval (Seconds)	User-defined; number of seconds between each retry.
Current Retry Count	System-supplied; current number of times that the Controller has retried the task after it first went to failure status.
Suppress Intermediate Failures	User-defined; If the task instance is in the Failed status , indicates whether or not the following will be suppressed until all scheduled retry attempts (a Maximum Retries value has been entered or Retry Indefinitely has been enabled) have been made: <ul style="list-style-type: none"> • All Actions (Abort, Email Notification, Set Variable, SNMP Notification, and System Operation) defined for the task instance on a Failed status. • Workflow conditional path processing; any Successors waiting on a failure path will not be released. • Task Monitors will not be notified of the Failed status. Also, any Task Monitor task that has a Time Scope in the past will disqualify any matching task instance in the past with a Failed status if the task instance is scheduled for automatic retry and for which Suppress Intermediate Failures has been enabled. • Any Workflow containing the Failed task instance will not transition to the Running/Problems status.
Next Retry Time	System-supplied for a task instance in the Failed status that is scheduled for automatic retry; Next time that a retry will be made. If a task instance is not scheduled for automatic retry, Next Retry Time does not display in the task instance Details.
Wait / Delay Options	This section contains specifications for waiting to start and/or delaying on start the task.

Wait To Start	Amount of time to wait before starting a task from the time that it was launched. Options are: <ul style="list-style-type: none"> • – None – • Time • Relative Time • Duration • Seconds
Wait Time	If Wait To Start = Time or Relative Time; Number of hours and minutes to wait before starting the task.
Wait Day Constraint	If Wait Time = Time or Relative Time; Specification for whether or not to advance the wait time to another day. Valid values: <ul style="list-style-type: none"> • -- None -- <ul style="list-style-type: none"> • If Wait To Start = Time; Advance to the next day if the specified wait time is before the time that the task instance is eligible to start; that is, all dependencies have been met. For example: it is not being held, and it is not waiting on any predecessors. • If Wait To Start = Relative Time; Advance to the next day if the specified wait time is before the task instance Trigger Time or, if there is no Trigger Time, before the task instance Launch Time. In the latter case, when a task instance is within a workflow, it will inherit the Launch Time of the top-level parent workflow task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. Default is – None –.
Wait Duration	If Wait To Start = Duration; Number of days, hours, minutes, and seconds to wait before starting the task.
Wait Duration In Seconds	If Wait To Start = Seconds; Number of seconds to wait before starting the task.
Delay On Start	Amount of time to delay the start of a task, after it has been launched, from the time that it is eligible to start; that is, all dependencies have been met. For example: it is not being held, it is not waiting on any predecessors, or there is no wait time specified. Options are: <ul style="list-style-type: none"> • – None – • Duration • Seconds

Delay Duration	If Delay On Start = Duration; Number of days, hours, minutes, and seconds to delay after starting the task.
Delay Duration In Seconds	If Delay On Start = Seconds; Number of seconds to delay after starting the task.
Time Options	This section contains time-related specifications for the task instance.
Late Start	If enabled, and if the task instance starts after the time or period specified, the task instance is flagged as late. You can specify a time or duration to determine a late start (see Late Start Type). To determine whether a task instance started late, open the task instance and locate the Started Late field; the field is checked if the instance started after the specified time. The Started Late field displays in the task instance Details only if the user specified a Late Start in the task Details.
Started Late	System-supplied; this field is flagged if the task started later than the time specified in the Late Start fields.
Late Start Type	Required if Late Start is enabled. Options: <ul style="list-style-type: none"> • Time - Flag the task if it starts after the specified time. • Duration - Flag the task if it starts a certain amount of time after the programmed start time. The task must have a specific start time.
Late Start Time	If Late Start Type = Time; Time after which the task start time is considered late. Use HH:MM, 24-hour time.
Late Start Day Constraint	If Late Start Type = Time; Specification for whether or not to advance the late start time to another day. Valid values: <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified late start time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. Default is -- None --.
Late Start Nth Amount	If Late Start Day Constraint = Nth Day; Number of days to advance.

Late Start Duration	<p>If Late Start Type = Duration; Duration (amount of relative time) after which the task is considered to have started late.</p> <p>For a task within a workflow, the duration is the period between the time the workflow starts and the time the task itself starts. For example, a task might have a Late Start Duration of 60 minutes. If the workflow starts at 9:00 a.m. but the task itself does not start until 10:30, the task has started late.</p> <p>For a task that is not within a workflow, Late Start Duration has meaning only if the task has been held upon starting. For example, if a task has a Late Start Duration of 60 minutes and the Hold on Start field is enabled, if the task is not released from hold within the amount of time specified in the Late Start Duration field, the task has started late.</p>
Computed Late Start Time	If Late Start is enabled, the computed Date/Time for when the task instance will be Late Started.
Late Finish	If enabled, and if the task instance finishes after the time or period specified, the task instance is flagged as late. You can specify a time or duration to determine a late finish (see Late Finish Type). To determine whether a task instance finished late, open the task instance and locate the Finished Late field; the field is checked if the instance finished after the specified time or lasted longer than expected. This field only appears on the task instance if the user specified a Late Finish in the task definition.
Finished Late	System-supplied; this field is flagged if the task finished later than the time or duration specified in the Late Finish fields.
Late Finish Type	<p>Required if Late Finish is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • Time - Flag the task if it finishes after the specified time (see Late Finish Time). • Duration - Flag the task if it finishes a certain amount of time after the programmed finish time (see Late Finish Duration). The task must have a specific finish time. • Average Duration - Flag the task if it finishes before the average duration (see Average Instance Time) for the task, less an offset (see Late Finish Offset Type), if specified.
Late Finish Offset Type	<p>If Late Finish Type = Average Duration;</p> <p>Options:</p> <ul style="list-style-type: none"> • Percentage • Duration
Late Finish Percentage Offset (+)	Required if Late Finish Offset Type = <i>Percentage</i> ; Percentage of Average Duration to use as an offset. The late finish time is calculated by adding the offset to the Average Duration .
Late Finish Duration Offset (+)	Required if Late Finish Offset Type = <i>Duration</i> ; Duration to use as an offset. The late finish time is calculated by adding the offset to the Average Duration .
Late Finish Duration Offset Unit	<p>If Late Finish Offset Type = Duration;</p> <p>Options:</p> <ul style="list-style-type: none"> • Seconds • Minutes • Hours
Late Finish Time	If Late Finish Type = Time; Time after which the task finish time is considered late. Use HH:MM, 24-hour time.

Late Finish Day Constraint	<p>If Late Finish Type = Time; Specification for whether or not to advance the late finish time to another day.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified late finish time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. <p>Default is -- None --.</p>
Late Finish Nth Amount	If Late Finish Day Constraint = Nth Day; Number of days to advance.
Late Finish Duration	If Late Finish Type = Duration; Longest amount of time this task instance should take to run.
Computed Late Finish Time	If Late Finish is enabled, the computed Date/Time for when the task instance will be Late Finished.
Early Finish	If enabled, and if the task instance finishes before the time or period specified, the task instance is flagged as early. You can specify a time or duration to determine an early finish (see Early Finish Type). To determine whether a task instance finished early, open the task instance and locate the Finished Early field; the field is checked if the instance finished before the specified time or did not last as long as expected. This field only appears on the task instance if the user added Early Finish specifications to the task definition.
Finished Early	System-supplied; this field is flagged if the task finished earlier than the time specified in the Early Finish fields.
Early Finish Type	<p>Required if Early Finish is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • Time - Flag the task if it finishes before the specified time (see Early Finish Time). • Duration - Flag the task if it finishes a certain amount of time before the programmed finish time (see Early Finish Duration). The task must have a specific finish time. • Average Duration - Flag the task if it finishes before the average duration (see Average Instance Time) for the task, less an offset (see Early Finish Offset Type), if specified.
Early Finish Offset Type	<p>If Early Finish Type = Average Duration;</p> <p>Options:</p> <ul style="list-style-type: none"> • Percentage • Duration
Early Finish Percentage Offset (-)	Required if Early Finish Offset Type = <i>Percentage</i> ; Percentage of Average Duration to use as an offset. The early finish time is calculated by subtracting the offset from the Average Duration .

Early Finish Duration Offset (-)	Required if Early Finish Offset Type = Duration ; Duration to use as an offset. The early finish time is calculated by subtracting the offset from the Average Duration .
Early Finish Duration Offset Unit	If Early Finish Offset Type = Duration ; Options: <ul style="list-style-type: none"> • Seconds • Minutes • Hours
Early Finish Time	If Early Finish Type = Time ; Time before which the task finish time is considered early. That is, enter a time at which the task should still be running. Use HH:MM, 24-hour time.
Early Finish Day Constraint	If Early Finish Type = Time ; Specification for whether or not to advance the early finish time to another day. Valid values: <ul style="list-style-type: none"> • -- None -- Advance to the next day if the specified early finish time is before the Created time of the task instance. • Same Day Do not advance day. • Next Day Advance to the next day. • Next Business Day Advance to the next business day. • Sunday If today is not Sunday, advance to next Sunday. • Monday If today is not Monday, advance to next Monday. • Tuesday If today is not Tuesday, advance to next Tuesday. • Wednesday If today is not Wednesday, advance to next Wednesday. • Thursday If today is not Thursday, advance to next Thursday. • Friday If today is not Friday, advance to next Friday. • Saturday If today is not Saturday, advance to next Saturday. • Nth Day Advance to a specific number of days in the future. Default is -- None --.
Early Finish Nth Amount	If Early Finish Day Constraint = Nth Day ; Number of days to advance.
Early Finish Duration	If Early Finish Type = Duration ; Shortest amount of time this task instance should take to run.
Projected Late	System-provided if Late Start Time , Late Start Duration , or Late Finish Time is specified; This field is flagged if the task instance is projected to be late based on critical path projected end times (see Critical Path Projected Late Action Maximum and Critical Path Projected Late Threshold In Minutes Universal Controller system properties). .
Critical Path Options	This section contains Critical Path-related specifications for the task.
CP Duration	Optional; Allows you to override the estimated Critical Path Duration of the task when running in a Workflow; used in conjunction with the CP Duration Unit field. In most cases, this field should be left blank, which implies that the Controller will estimate the Critical Path Duration based on historical executions. Valid values are any integer equal to or greater than 0. Variables and Functions are supported.

CP Duration (Resolved)	Displays the current resolved value of the CP Duration field, which may contain variables or functions that will be displayed as unresolved until the task instance starts. The CP Duration (Resolved) field can continue to change value until the task instance starts, at which time CP Duration will display as resolved and CP Duration (Resolved) will no longer be visible unless there was an issue resolving the variables and/or functions contained within CP Duration . If the Controller is unable to resolve CP Duration or it resolves to an invalid value, CP Duration will be ignored and the Controller will estimate the Critical Path Duration based on historical executions.
CP Duration Unit	Type of CP Duration; used in conjunction with the CP Duration field. For example, for a CP Duration of two minutes, specify 2 in the CP Duration field and select Minutes in this field. Options: <ul style="list-style-type: none"> • Seconds • Minutes • Hours Default is Minutes.
Workflow Execution Options	This section contains Execution Restriction specifications for the task if it is within a Workflow.
Execution Restriction	Specification for whether or not there is a restriction for this task to be run, skipped, or held. Options are: <ul style="list-style-type: none"> • -- None -- No restriction for this task. • Run Restriction for when this task will be run. • Skip Restriction for when this task will be skipped. • Hold Restriction for when this task will be held. If Execution Restriction on a task is Run or Skip, then when it is part of a Workflow that is being launched, the Restriction Period is evaluated. The task instance will be skipped if Execution Restriction is Skip and the date is within the Restriction Period or Execution Restriction is Run and the date is not within the Restriction Period . Execution Restriction can be set to Skip with a Restriction Period of - None -, meaning the restriction is always active and the task will be skipped when it is part of a Workflow.
Restriction Period	If Execution Restriction = Run, Skip, or Hold; Period of time when the task is restricted. Options are: <ul style="list-style-type: none"> • - None - No period of restriction for this task. • Before Restriction is valid if the date is before the Before Date value. • After Restriction is valid if the date is after the After Date value. • Span Restriction is valid if the date is before the Before Date value and after After Date value. • On Restriction is valid if the date is one of the Date List values.
Before Date	If Restriction Period = Before or Span; Date before which the restriction is valid.
Before Time	If Restriction Period = Before or Span; Time on the selected date before which the restriction is valid.
After Date	If Restriction Period = After or Span; Date after which the restriction is valid.
After Time	If Restriction Period = After or Span; Time on the selected date after which the restriction is valid.
Date List	If Restriction Period = On; Date(s) on which the restriction is valid.
Statistics	This section contains time-related statistics for the task instance.

User Estimated End Time	System-supplied; If the user entered information into the User Estimated Duration field in the task Details, the Controller uses this information to calculate an end time for the task instance, based on the date/time the task instance started.
Lowest Estimated End Time	System-supplied; Lowest estimated end time of the task instance, calculated by the Controller based on the date/time the task instance started.
Average Estimated End Time	System-supplied; Average estimated end time of the task instance, calculated by the Controller based on the date/time the task instance started.
Highest Estimated End Time	System-supplied; Highest estimated end time of the task instance, calculated by the Controller based on the date/time the task instance started.
Projected Start Time	System-supplied; projected start time of the task instance, calculated by the Controller based on Projected End Time minus Projected Duration.
Projected End Time	System-supplied; projected end time of the task instance, calculated by the Controller based on the projected end time of its predecessor (or the maximum projected end time of all its predecessors, if more than one path exists to that task instance) plus its estimated critical path duration .
Metadata	This section contains Metadata information about this record.
UUID	Universally Unique Identifier of this record.
Updated By	Name of the user that last updated this record.
Updated	Date and time that this record was last updated.
Created By	Name of the user that created this record.
Created	Date and time that this record was created.
Status History	History of all statuses that the task instance has gone through.
Buttons	This section identifies the buttons displayed above and below the Task Instance Details that let you perform various actions.
Update	Saves updates to the record.
Force Finish	See Force Finishing a Task .
Hold	Places the task instance on Hold (see Putting a Task on Hold).
Skip	For tasks loaded into the schedule that have not yet run; allows you to tell the Controller to skip this task. See Skipping a Task .

Re-run	<p>See Re-running a Task Instance.</p> <div style="border: 1px solid orange; padding: 10px; margin: 10px 0;"> <p>Note</p> <p>If the Re-run (Suppress Intermediate Failures) Permitted Universal Controller system property is set to true, the Re-run button is a drop-down list containing the following options:</p> <ul style="list-style-type: none"> • Re-run • Re-run (Suppress Intermediate Failures) </div> <p>The Re-run button does not display if the task instance does not qualify for Re-run.</p> <p>If the task instance qualifies for Re-run, but already has Retry Options enabled, Re-run (Suppress Intermediate Failures) displays as disabled in the drop-down list.</p>
View Parent	Displays the task instance Details for the parent Workflow of this task instance.
Retrieve Output	See Retrieving Output .
SAP	Displays an Action menu of SAP commands.
Delete	Deletes the current record.
Refresh	Refreshes any dynamic data displayed in the Details.
Close	For pop-up view only; closes the pop-up view of this task instance.
Tabs	This section identifies the tabs across the top of the Task Instance Details that provide access to additional information about the task instance.
Virtual Resources	<p>Lists all Virtual Resources to which this task is assigned.</p> <p>If you want to create a Task Virtual Resource for this task, you can select an existing Virtual Resource (or, optionally, first create a new Virtual Resource and then select it as the Task Virtual Resource) or enter a Virtual Resource variable. The variable must be a supported type as described in Variables and Functions.</p>
Exclusive Requests	Lists all records in the Exclusive Requests table (<code>ops_exclusive_order</code>) for this task instance.
Output	<p>Displays output generated from the process, if any, based on specifications provided by the user in the Automatic Output Retrieval fields in the task Details.</p> <p>If automatic output retrieval was not available or was not selected, output can be obtained by clicking the Retrieve Output button.</p>
Notes	Lists all notes associated with this record.

8.6 Output Redirection

An Agent processes SAP, Universal Command, and File Transfer/UDM task types differently than Windows and Linux/Unix task types. SAP, Universal Command, and File Transfer/UDM command lines are sent to the user process via standard input, so any redirection operators entered as task command input are not processed as expected.

If you want to direct output from an SAP task to your file system, the **-uagstdio** command option lets you specify the same output redirection commands that are available for Windows and Linux/Unix task types. UAG will apply the user-specified value for **-uagstdio** directly to the command image.

The I/O redirection commands that you can use with **-uagstdio** are dependent on the OS/command shell. You should be able to set up any redirection that the OS/command shell supports (just as with Windows and Unix/Linux task types).

The syntax of **-uagstdio** is similar to Universal Data Mover, Universal Command, and Universal Connector [command line options](#); option followed by value.

For the SAP task type, you can specify **uagstdio** in the following field:

- [SAP Command Options](#)

8.6.1 -uagstdio Examples

```
-uagstdio >C:\SAP0UT\sap.out
```

If the **-uagstdio** value contains spaces, it must be enclosed in double quotation marks ("):

```
-uagstdio ">C:\SAP0UT\sap.out 2>C:\SAP0UT\sap.err"
```

If the quoted value itself requires double quotation marks, they must be doubled (""):

```
-uagstdio ">C:\tmp\\""sap output""\sap.out 2>C:\tmp\\""sap output""\sap.err"
```

8.7 Universal Connector Commands

The following table identifies supported Universal Connector commands, describes the actions that each command performs, and lists each command's related options, which display in the SAP Task Details when that command is selected.

Command Name	Description	Options
Run	<p>Performs the following actions:</p> <ol style="list-style-type: none"> 1. Defines a new SAP, job based on either a USAP Definition file or an SAP Model Job. 2. Starts the defined job. 3. Waits for the job to complete. 4. Prints the job's joblog to standard error and the spoolists to standard output. 5. Purges the job from the SAP system. 	<ul style="list-style-type: none"> • Definition or Model Specifies how the new SAP job will be created, based either on a USAP Definition File or an SAP Model Job. • Script or File System Specifies whether the USAP definition file exists in the file system of the machine where the Agent is running or in Scripts. • Script Required if Script or File System = Script; Name of the script in the Controller database that will be executed by this task. <div style="border: 1px solid orange; padding: 10px; margin: 10px 0;"> <p>Note</p> <p>If you click the Details icon for a Script selected in this field, the Script Type field in the Details is read-only.</p> </div> <ul style="list-style-type: none"> • Definition File If you selected USAP Definition File above, use this field to provide the path and file name of the file. • SAP Job Name Job name of the SAP job. Variables supported. • SAP Job ID Job ID of the SAP job. Variables supported. <p>For Utility Agents older than Universal Agent 6.4.2.2, this is a required field.</p> <p>If you are using a newer Utility Agent, specifying a Job ID of the target SAP job will ensure that it always can be uniquely identified.</p> <p>If you do not specify a Job ID, one of the following applies:</p> <ul style="list-style-type: none"> • If the target SAP system has only one job with the specified name for the specified user in a status of scheduled, it is uniquely identified. • If the target SAP system has multiple jobs with the specified name for the specified user: <ul style="list-style-type: none"> • By default, we select the scheduled job if only one exists. • You can optionally add an SAP Command Option <code>-model_status <scheduled finished any></code> to control which SAP job status is used if only one job with the specified status exists. • You also can optionally add an SAP Command Option <code>-resolve_multi_model yes</code> to select the latest SAP job if more than one exists. <ul style="list-style-type: none"> • Target Job Name If you selected SAP Model Job above, use this field to provide the name of the new SAP job being created. If you leave this field blank, the Controller uses the same name as the SAP Model Job.

Command Name	Description	Options
		<ul style="list-style-type: none"> • Start Immediately Enabled or disabled. Enabling the Start Immediately flag will cause the job to fail if SAP resources are not available to start the job immediately (for example, a background work process). Otherwise, the job will wait for SAP resources to become available. • SAP Target Server Name of an SAP instance at which a background job should be run. The name has the following format: <div style="border: 1px solid black; padding: 10px; margin: 10px 0; text-align: center;"> <code>[host name]_[SAP System name]_[SAP System number]</code> </div> <p>Where host name is the name of the server computer on which the instance is running, as specified in the system profile parameter SAPLOCALHOST. Example:</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0; text-align: center;"> <code>hs0123_C11_55</code> </div> • Print Application Log Enabled or disabled. Specifies whether or not the job's application log, if one was generated, is returned. • Print Application RC Enabled or disabled. Specifies whether or not the job's application return codes, if they were set, are returned. • Use Application RC Specifies whether or not the SAP job's application return codes will be used to determine the return code for the Universal Controller task.
Run Process Chain	<p>Performs the following actions:</p> <ol style="list-style-type: none"> 1. Starts a process chain. 2. Waits for the process chain to complete. 3. Returns the process chain log. 4. Returns process logs. 5. Returns process spool lists. 	<ul style="list-style-type: none"> • Chain ID ID of the process chain to run.
Run InfoPackage	<p>Performs the following actions:</p> <ol style="list-style-type: none"> 1. Starts an InfoPackage. 2. Wait for the InfoPackage request to complete. 3. Returns status messages for the completed Infopackage request. 	<ul style="list-style-type: none"> • InfoPackage Name of the InfoPackage to run. • InfoPackage Job Name Name of the SAP batch job that processes the InfoPackage request.

Command Name	Description	Options
<p>Submit</p>	<p>Defines a new SAP job.</p>	<ul style="list-style-type: none"> • Definition or Model Specifies how the new SAP job will be created, based either on a USAP Definition File or an SAP Model Job. • Script or File System Specifies whether the USAP definition file exists in the file system of the machine where the Agent is running or in Scripts. • Script Required if Script or File System = Script; Name of the script in the Controller database that will be executed by this task. <div style="border: 1px solid orange; padding: 10px; margin: 10px 0;"> <p>Note</p> <p>If you click the Details icon for a Script selected in this field, the Script Type field in the Details is read-only.</p> </div> <ul style="list-style-type: none"> • Definition File If you selected USAP Definition File above, use this field to provide the path and file name of the file. • SAP Job Name Job name of the SAP job. Variables supported. • SAP Job ID Job ID of the SAP job. Variables supported. <p>For Utility Agents older than Universal Agent 6.4.2.2, this is a required field.</p> <p>If you are using a newer Utility Agent, specifying a Job ID of the target SAP job will ensure that it always can be uniquely identified.</p> <p>If you do not specify a Job ID, one of the following applies:</p> <ul style="list-style-type: none"> • If the target SAP system has only one job with the specified name for the specified user in a status of scheduled, it is uniquely identified. • If the target SAP system has multiple jobs with the specified name for the specified user: <ul style="list-style-type: none"> • By default, we select the scheduled job if only one exists. • You can optionally add an SAP Command Option <code>-model_status <scheduled finished any></code> to control which SAP job status is used if only one job with the specified status exists. • You also can optionally add an SAP Command Option <code>-resolve_multi_model yes</code> to select the latest SAP job if more than one exists. • Target Job Name If you selected SAP Model Job above, use this field to provide the name of the new SAP job being created. If you leave this field blank, the Controller uses the same name as the SAP Model Job.

Command Name	Description	Options
		<ul style="list-style-type: none"> • Start Enabled or disabled. Specifies whether or not the newly-defined SAP job should be started. • Start Immediately Enabled or disabled. Enabling the Start Immediately flag will cause the job to fail if SAP resources are not available to start the job immediately (for example, a background work process). Otherwise, the job will wait for SAP resources to become available. • SAP Target Server Name of an SAP instance at which a background job should be run. The name has the following format: <div style="border: 1px solid black; padding: 10px; margin: 10px 0; text-align: center;">[host name]_[SAP System name]_[SAP System number]</div>Where host name is the name of the server computer on which the instance is running, as specified in the system profile parameter SAPLOCALHOST. Example: <div style="border: 1px solid black; padding: 10px; margin: 10px 0; text-align: center;">hs0123_C11_55</div> • Wait Specifies whether the Controller should wait for the SAP process chain to complete processing. • Print Job Log Enabled or disabled. Specifies whether or not the job's joblog is returned. • Print Spooled Output Enabled or disabled. Specifies whether or not the spoollists of all job steps are returned. • Print Application Log Enabled or disabled. Specifies whether or not the job's application log, if one was generated, is returned. • Print Application RC Enabled or disabled. Specifies whether or not the job's application return codes, if they were set, are returned. • Use Application RC Specifies whether or not the SAP job's application return codes will be used to determine the return code for the Universal Controller task. • SAP ABAP Program Name Name of an ABAP program in an SAP system to which the model variant belongs. • SAP Variant Name Pre-existing SAP variant name to use as the model variant. • Target Variant Name One or more replacement variants for ABAP program job steps in an SAP job.

Command Name	Description	Options
Modify	<p>Modifies an SAP job that already exists in an SAP system. A USAP job definition file is used to specify the modifications.</p>	<ul style="list-style-type: none"> • Script Library or File System Specifies whether the USAP definition file exists in the file system of the machine where the Agent is running or in Scripts. • Script Required if Command or Script = Script; Name of the script in the Controller database that will be executed by this task. <div style="border: 1px solid orange; padding: 10px; margin: 10px 0;"> <p>Note</p> <p>If you click the Details icon for a Script selected in this field, the Script Type field in the Details is read-only.</p> </div> <ul style="list-style-type: none"> • Definition File If you selected USAP Definition File above, use this field to provide the path and file name of the file. • SAP Job ID Job ID of the SAP job. Variables supported.

Command Name	Description	Options
<p>Start</p>	<p>Starts a currently defined SAP job.</p>	<ul style="list-style-type: none"> • SAP Job Name Job name of the SAP job. Variables supported. • SAP Job ID Job ID of the SAP job. Variables supported. <p>For Utility Agents older than Universal Agent 6.4.2.2, this is a required field.</p> <p>If you are using a newer Utility Agent, specifying a Job ID of the target SAP job will ensure that it always can be uniquely identified.</p> <p>If you do not specify a Job ID, one of the following applies:</p> <ul style="list-style-type: none"> • If the target SAP system has only one job with the specified name for the specified user in a status of scheduled, it is uniquely identified. • If the target SAP system has multiple jobs with the specified name for the specified user: <ul style="list-style-type: none"> • By default, we select the scheduled job if only one exists. • You can optionally add an SAP Command Option <code>-model_status</code> <code><scheduled finished any></code> to control which SAP job status is used if only one job with the specified status exists. • You also can optionally add an SAP Command Option <code>-resolve_multi_model yes</code> to select the latest SAP job if more than one exists. <ul style="list-style-type: none"> • Start Immediately Enabled or disabled. Enabling the Start Immediately flag will cause the job to fail if SAP resources are not available to start the job immediately (for example, a background work process). Otherwise, the job will wait for SAP resources to become available. • SAP Target Server Name of an SAP instance at which a background job should be run. The name has the following format: <div style="border: 1px solid black; padding: 10px; margin: 10px 0; text-align: center;"> <pre>[host name]_[SAP System name]_[SAP System number]</pre> </div> <p>Where host name is the name of the server computer on which the instance is running, as specified in the system profile parameter <code>SAPLOCALHOST</code>.</p> <p>Example:</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0; text-align: center;"> <pre>hs0123_C11_55</pre> </div> • Wait Specifies whether the Controller should wait for the SAP process chain to complete processing. • Print Job Log Enabled or disabled. Specifies whether or not the job's joblog is returned.

Command Name	Description	Options
		<ul style="list-style-type: none"> • Print Spooled Output Enabled or disabled. Specifies whether or not the spoollists of all job steps are returned. • Print Application Log Enabled or disabled. Specifies whether or not the job's application log, if one was generated, is returned. • Print Application RC Enabled or disabled. Specifies whether or not the job's application return codes, if they were set, are returned. • Use Application RC Specifies whether or not the SAP job's application return codes will be used to determine the return code for the Universal Controller task.
Start Process Chain	Starts the specified process chain on the SAP system.	<ul style="list-style-type: none"> • Chain ID ID of process chain to start. • Restart Specification to restart failed and cancelled processes (R or X) in the specified process chain instance. • Log ID Log ID for process chain instance to be restarted. • Wait Specifies whether the Controller should wait for the SAP process chain to complete processing. • Print Job Log Enabled or disabled. Specifies whether or not the job's joblog is returned. • Print Spooled Output Enabled or disabled. Specifies whether or not the spoollists of all job steps are returned. • Print Application Log Enabled or disabled. Specifies whether or not the job's application log, if one was generated, is returned. • Print Application RC Enabled or disabled. Specifies whether or not the job's application return codes, if they were set, are returned. • Use Application RC Specifies whether or not the SAP job's application return codes will be used to determine the return code for the Universal Controller task.
Start InfoPackage	Starts the specified InfoPackage on the SAP system.	<ul style="list-style-type: none"> • InfoPackage Name of the InfoPackage to start. • InfoPackage Job Name Name of the SAP batch job that processes the InfoPackage request. • Wait Specifies whether the Controller should wait for the SAP InfoPackage to complete processing.
Wait	Reconnects to a started job and monitors it through completion.	<ul style="list-style-type: none"> • SAP Job Name Job name of the SAP job. Variables supported. • SAP Job ID Job ID of the SAP job. Variables supported. • Print Job Log Enabled or disabled. Specifies whether or not the job's joblog is returned. • Print Spooled Output Enabled or disabled. Specifies whether or not the spoollists of all job steps are returned. • Print Application Log Enabled or disabled. Specifies whether or not the job's application log, if one was generated, is returned. • Print Application RC Enabled or disabled. Specifies whether or not the job's application return codes, if they were set, are returned. • Use Application RC Specifies whether or not the SAP job's application return codes will be used to determine the return code for the Universal Controller task.

Command Name	Description	Options
Wait Process Chain	Waits for a Process Chain to complete.	<ul style="list-style-type: none"> • Chain ID ID of process chain to be monitored to completion. • Log ID Log ID for process chain instance to be monitored to completion.
Wait InfoPackage	Waits for an InfoPackage to complete.	<ul style="list-style-type: none"> • Request ID Request ID of the InfoPackage that is to be monitored.
Abort	Cancels a running SAP job.	<ul style="list-style-type: none"> • SAP Job Name Job name of the SAP job. Variables supported. • SAP Job ID Job ID of the SAP job. Variables supported.
Interrupt Process Chain	Removes the specified process chain from the schedule.	<ul style="list-style-type: none"> • Chain ID ID of process chain that is to be interrupted.
Purge Job	Deletes a defined SAP job, its joblog, and all of its spoolists. This command is not available on SAP 3.1 and SAP 4.0.	<ul style="list-style-type: none"> • SAP Job Name Job name of the SAP job. Variables supported. • SAP Job ID Job ID of the SAP job. Variables supported.
Purge Variant	Deletes a variant from an SAP system.	<ul style="list-style-type: none"> • SAP ABAP Program Name Name of the ABAP program for which the variant will be deleted. • SAP Variant Name Name of the variant to be deleted.
Raise Event	Raises the specified SAP background processing event.	<ul style="list-style-type: none"> • SAP Event Name of the event. • SAP Event Parameter Optional parameter value for the event.

Command Name	Description	Options																														
Display	Displays the data specified in the Display Command field. The data is written to standard output.	<ul style="list-style-type: none"> • Display Command One of the following: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Job Log</td> <td>Displays the job log for a specified SAP job.</td> </tr> <tr> <td>Spool List</td> <td>Displays the spoolist for a job step.</td> </tr> <tr> <td>Status</td> <td>Displays the current status for an SAP job.</td> </tr> <tr> <td>Variants</td> <td>Displays the variants available for the specified ABAP program.</td> </tr> <tr> <td>Variant</td> <td>Displays the contents of a specified variant. Note: Requires XBP interface 2.0 or greater.</td> </tr> <tr> <td>Job Definition</td> <td>Displays the definition of the specified SAP job.</td> </tr> <tr> <td>Select</td> <td>Displays a variety of attributes for a list of SAP jobs that match the specified criteria.</td> </tr> <tr> <td>System Log</td> <td>Displays a portion of an SAP syslog that meets the specified date/time constraints.</td> </tr> <tr> <td>Intercept Tabled</td> <td>Displays the contents of the job intercept criteria table for the connected SAP system.</td> </tr> <tr> <td>Intercepted Jobs</td> <td>Displays intercepted jobs for the connected SAP system.</td> </tr> <tr> <td>Reports</td> <td>Displays a list of ABAP reports that match the specified criteria.</td> </tr> <tr> <td>Commands</td> <td>Displays a list of SAP external commands that match the specified criteria.</td> </tr> <tr> <td>Output Devices</td> <td>Displays a list of SAP output devices that match the specified criteria.</td> </tr> <tr> <td>Print Formats</td> <td>Displays a list of print formats that are available for the specified printer.</td> </tr> <tr> <td>Selection Screen</td> <td>Displays information about the selection fields of an ABAP program.</td> </tr> </table>	Job Log	Displays the job log for a specified SAP job.	Spool List	Displays the spoolist for a job step.	Status	Displays the current status for an SAP job.	Variants	Displays the variants available for the specified ABAP program.	Variant	Displays the contents of a specified variant. Note: Requires XBP interface 2.0 or greater.	Job Definition	Displays the definition of the specified SAP job.	Select	Displays a variety of attributes for a list of SAP jobs that match the specified criteria.	System Log	Displays a portion of an SAP syslog that meets the specified date/time constraints.	Intercept Tabled	Displays the contents of the job intercept criteria table for the connected SAP system.	Intercepted Jobs	Displays intercepted jobs for the connected SAP system.	Reports	Displays a list of ABAP reports that match the specified criteria.	Commands	Displays a list of SAP external commands that match the specified criteria.	Output Devices	Displays a list of SAP output devices that match the specified criteria.	Print Formats	Displays a list of print formats that are available for the specified printer.	Selection Screen	Displays information about the selection fields of an ABAP program.
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Command Name	Description	Options																				
		<table border="1"> <tr> <td data-bbox="1008 282 1225 443">Event History</td> <td data-bbox="1225 282 1546 443">Displays a list of events that were logged in an SAP system's event history. The retrieved events can optionally be set to "Confirmed."</td> </tr> <tr> <td data-bbox="1008 443 1225 528">Criteria Manager Profiles</td> <td data-bbox="1225 443 1546 528">Displays a list of Criteria Manager profiles.</td> </tr> <tr> <td data-bbox="1008 528 1225 640">Criteria Manager Criteria</td> <td data-bbox="1225 528 1546 640">Displays the criteria hierarchy of a particular profile in XML format.</td> </tr> <tr> <td data-bbox="1008 640 1225 752">Process Chains</td> <td data-bbox="1225 640 1546 752">Displays a list of process chains from the SAP system that meet the specified criteria.</td> </tr> <tr> <td data-bbox="1008 752 1225 864">Process Chain</td> <td data-bbox="1225 752 1546 864">Displays the list of processes contained within the specified process chain.</td> </tr> <tr> <td data-bbox="1008 864 1225 976">Process Chain Log</td> <td data-bbox="1225 864 1546 976">Displays the SAP log associated with the process chain.</td> </tr> <tr> <td data-bbox="1008 976 1225 1088">Process Chain Start Condition</td> <td data-bbox="1225 976 1546 1088">Displays the SAP start condition for specified process chain.</td> </tr> <tr> <td data-bbox="1008 1088 1225 1173">Process Chain Status</td> <td data-bbox="1225 1088 1546 1173">Displays the current status of the process chain.</td> </tr> <tr> <td data-bbox="1008 1173 1225 1285">InfoPackages</td> <td data-bbox="1225 1173 1546 1285">Displays a list of InfoPackages on the SAP system that meet the specified criteria.</td> </tr> <tr> <td data-bbox="1008 1285 1225 1397">InfoPackage Status</td> <td data-bbox="1225 1285 1546 1397">Displays the current status for the InfoPackage instance identified by the request ID.</td> </tr> </table>	Event History	Displays a list of events that were logged in an SAP system's event history. The retrieved events can optionally be set to "Confirmed."	Criteria Manager Profiles	Displays a list of Criteria Manager profiles.	Criteria Manager Criteria	Displays the criteria hierarchy of a particular profile in XML format.	Process Chains	Displays a list of process chains from the SAP system that meet the specified criteria.	Process Chain	Displays the list of processes contained within the specified process chain.	Process Chain Log	Displays the SAP log associated with the process chain.	Process Chain Start Condition	Displays the SAP start condition for specified process chain.	Process Chain Status	Displays the current status of the process chain.	InfoPackages	Displays a list of InfoPackages on the SAP system that meet the specified criteria.	InfoPackage Status	Displays the current status for the InfoPackage instance identified by the request ID.
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Criteria Manager Profiles	Displays a list of Criteria Manager profiles.																					
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Process Chain Start Condition	Displays the SAP start condition for specified process chain.																					
Process Chain Status	Displays the current status of the process chain.																					
InfoPackages	Displays a list of InfoPackages on the SAP system that meet the specified criteria.																					
InfoPackage Status	Displays the current status for the InfoPackage instance identified by the request ID.																					
Generate Variant Definition	Generates a USAP variant definition file based on a model SAP variant. The generated definition file is written to standard output. Requires XBP interface 2.0 or greater.	<ul style="list-style-type: none"> • SAP ABAP Program Name Name of an ABAP program in an SAP system to which the model variant belongs. • SAP Variant Name Pre-existing SAP variant name to use as the model variant. 																				

Command Name	Description	Options
Generate Job Definition	<p>Generates a USAP job definition file based on a model SAP job. The generated definition file is written to standard output.</p>	<ul style="list-style-type: none"> • SAP Job Name Job name of the SAP job. Variables supported. • SAP Job ID Job ID of the SAP job. Variables supported. <p>For Utility Agents older than Universal Agent 6.4.2.2, this is a required field.</p> <p>If you are using a newer Utility Agent, specifying a Job ID of the target SAP job will ensure that it always can be uniquely identified.</p> <p>If you do not specify a Job ID, one of the following applies:</p> <ul style="list-style-type: none"> • If the target SAP system has only one job with the specified name for the specified user in a status of scheduled, it is uniquely identified. • If the target SAP system has multiple jobs with the specified name for the specified user: <ul style="list-style-type: none"> • By default, we select the scheduled job if only one exists. • You can optionally add an SAP Command Option <code>-model_status <scheduled finished any></code> to control which SAP job status is used if only one job with the specified status exists. • You also can optionally add an SAP Command Option <code>-resolve_multi_model yes</code> to select the latest SAP job if more than one exists.

Command Name	Description	Options
Create CM Profile	<p>Creates a new Criteria Manager profile.</p>	<ul style="list-style-type: none"> • Script or File System Specifies whether the USAP definition file exists in the file system of the machine where the Agent is running or in Scripts. • Script Required if Script or File System = Script; Name of the script in the Controller database that will be executed by this task. <div style="border: 1px solid orange; padding: 10px; margin: 10px 0;"> <p>Note</p> <p>If you click the Details icon for a Script selected in this field, the Script Type field in the Details is read-only.</p> </div> <ul style="list-style-type: none"> • SAP Criteria Manager XML File Name of the file that contains the Criteria Manager information. • Event Select State Event status of the events which should be read. • SAP Event Name of the event. • SAP Event Parameter Optional parameter value for the event. • Confirm Returned Events Specification for whether or not the status of returned events should be changed in the SAP system.

Command Name	Description	Options
Set CM Criteria	Sets the criteria for a profile.	<ul style="list-style-type: none"> • Script or File System Specifies whether the USAP definition file exists in the file system of the machine where the Agent is running or in Scripts. • Script Required if Script or File System = Script; Name of the script in the Controller database that will be executed by this task. <div style="border: 1px solid orange; padding: 10px; margin: 10px 0;"> <p>Note</p> <p>If you click the Details icon for a Script selected in this field, the Script Type field in the Details is read-only.</p> </div> <ul style="list-style-type: none"> • SAP Criteria Manager XML File Name of the file that contains the Criteria Manager information. • SAP Criteria Manager Profile ID ID of the profile. • SAP Criteria Manager Profile Type Type of profile. For the default criteria types provided by SAP, the values are: <ul style="list-style-type: none"> • EVTHIS - Identifies a criteria type for event history. • EVHIRO - Identifies a criteria type for the reorganization of raised events. • INTERC - Identifies a criteria type for job interception. • Event Select State Event status of the events which should be read. • SAP Event Name of the event. • SAP Event Parameter Optional parameter value for the event. • Confirm Returned Events Specification for whether or not the status of returned events should be changed in the SAP system.
Activate CM Profile	Activates a criteria profile of the specified type.	<ul style="list-style-type: none"> • SAP Criteria Manager Profile ID ID of the profile. • SAP Criteria Manager Profile Type Type of profile. For the default criteria types provided by SAP, the values are: <ul style="list-style-type: none"> • EVTHIS - Identifies a criteria type for event history. • EVHIRO - Identifies a criteria type for the reorganization of raised events. • INTERC - Identifies a criteria type for job interception. • Event Select State Event status of the events which should be read. • SAP Event Name of the event. • SAP Event Parameter Optional parameter value for the event. • Confirm Returned Events Specification for whether or not the status of returned events should be changed in the SAP system.




Command Name	Description	Options
Deactivate CM Profile	Deactivates a criteria profile of the specified type.	<ul style="list-style-type: none"> • SAP Criteria Manager Profile Type Type of profile. For the default criteria types provided by SAP, the values are: <ul style="list-style-type: none"> • EVTHIS - Identifies a criteria type for event history. • EVHIRO - Identifies a criteria type for the reorganization of raised events. • INTERC - Identifies a criteria type for job interception. • Event Select State Event status of the events which should be read. • SAP Event Name of the event. • SAP Event Parameter Optional parameter value for the event. • Confirm Returned Events Specification for whether or not the status of returned events should be changed in the SAP system.
Delete CM Profile	Deletes a criteria profile from an SAP system.	<ul style="list-style-type: none"> • SAP Criteria Manager Profile ID ID of the profile. • SAP Criteria Manager Profile Type Type of profile. For the default criteria types provided by SAP, the values are: <ul style="list-style-type: none"> • EVTHIS - Identifies a criteria type for event history. • EVHIRO - Identifies a criteria type for the reorganization of raised events. • INTERC - Identifies a criteria type for job interception. • Event Select State Event status of the events which should be read. • SAP Event Name of the event. • SAP Event Parameter Optional parameter value for the event. • Confirm Returned Events Specification for whether or not the status of returned events should be changed in the SAP system.

8.8 Adding Job Steps

For an SAP Task in [Enhanced View](#), you can add one or more Job Steps for each task, and define the values for those job steps, as described below.

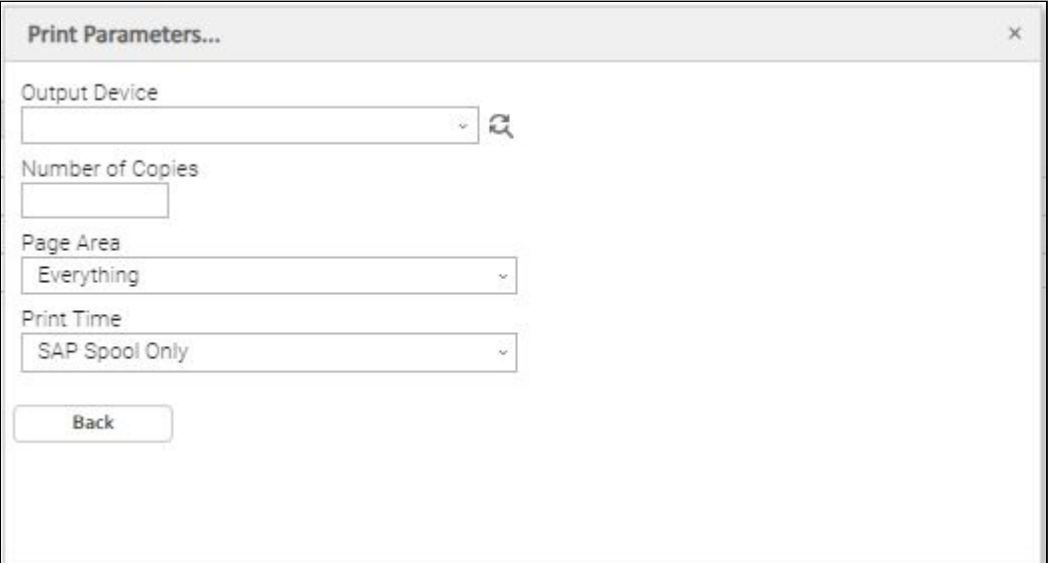
8.8.1 Adding a Step

The Controller searches Job Step definitions based on their order in the Job Steps list; the definition at the top of the list is searched first. To change the order of the definitions in the list, drag and drop them to any location.

Step 1	Open the SAP task to which you want to add the parameter.
Step 2	Click the Job Steps tab. The Job Steps list displays a list of all Job Steps for which values have been defined for this task.
Step 3	<p>Click the  button to display Job Step Details.</p> <div data-bbox="212 427 1544 1122" style="border: 1px solid black; padding: 5px;"> <p>Job Step Details</p> <p>Job Step</p> <p>Details</p> <p>Type ABAP Program</p> <p>Program Name * <input type="text"/> Variant Name <input type="text"/></p> <p>Execution Language <input type="text"/> SAP User Name <input type="text"/></p> <p><input type="button" value="Print Parameters..."/></p> <p>Use Temporary Variant <input type="checkbox"/></p> </div>
Step 4	<p>Enter/select Details for a new Job Step, using the field descriptions below as a guide.</p> <p>Fields with the  button are Options Fields that allow you to populate their drop-down lists with options retrieved from the SAP system.</p>
Step 6	Click the  button.

8.8.2 Job Step Details Field Descriptions

Field Name	Description
Type	Read only; Job step type.
Program Name	Name of the ABAP program to be processed in the background.
Variant Name	Variant to use to process the report.
Execution Language	Specifies the language in which the system executes and prints the output.
SAP User Name	User name in the SAP system.

Field Name	Description
Print Parameters...	<p>The Print Parameters... button opens a dialog that allows you to set up print parameters.</p> 
Output Device	Specifies the printer or fax machine.
Number of Copies	Number of printouts.
Page Area	Specifies if everything should be printed or select pages. Options are: <ul style="list-style-type: none"> • Everything • Page
Page From	If Page Area = Page, first page in the range of pages to be printed.
Page To	If Page Area = Page, last page in the range of pages to be printed.
Print Time	Specifies when the spool request will be sent to the output device. Options are: <ul style="list-style-type: none"> • SAP Spool Only • Immediately
Use Temporary Variant	Specification for whether or not to use Temporary Variant.
Temporary Variant	<p>If Use Temporary Variant is enabled,</p> <p>Allows you to enter temporary variants needed by the program to run.</p> <p>To add a temporary variant, click the + icon and enter a Technical Name, Type, Lower Limit/Single Value, Upper Limit, Option and Sign. To delete a variant, select in the list of variables and click the - icon.</p>

8.8.2.1 Options Fields

Four Job Step Details fields allow you to populate their drop-down lists with options retrieved from the SAP system:

- Program Name
- Variant Name
- Execution Language
- Output Device

To select the options for a field, click the refresh picker icon next to its drop-down list to display a Refresh Options... dialog. There is a different Refresh Options... dialog for each options field.

Most of the fields on a Refresh Options... dialog are fields from the SAP Task Details, and the values for those fields in the dialog are, by default, the same as the values for the fields in the Details. You can keep the current values or change them from their drop-down lists.

When you click the Submit button on the Refresh Options... dialog for an options field, the drop-down list for that field is populated with values that are determined by the values that you submitted on the Refresh Options... dialog.

8.8.2.1.1 Program Name

Refresh Program Name Options...

Utility Agent *
 qa-agentsim1 - simagent1

Utility Credentials

SAP Connection *

SAP Credentials *
 stonebranch-credential-01

ABAP Name Filter *

Clear Submit Cancel

8.8.2.1.2 Variant Name

Refresh Variant Name Options...

Utility Agent *
 qa-agentsim1 - simagent1

Utility Credentials

SAP Connection *

SAP Credentials *
 stonebranch-credential-01

ABAP Name *

Clear Submit Cancel

8.8.2.1.3 Execution Language

Refresh Execution Language Options...

Utility Agent *
qa-agentsim1 - simagent1

Utility Credentials

SAP Connection *

SAP Credentials *
stonebranch-credential-01

Clear Submit Cancel

8.8.2.1.4 Output Device

Refresh Output Device Options...

Utility Agent *
qa-agentsim1 - simagent1

Utility Credentials

SAP Connection *

SAP Credentials *
stonebranch-credential-01

Clear Submit Cancel

8.8.3 Deleting a Job Step

To delete a single Job Step for a task, either:

- Right-click the step on the Job Step list and click **Delete** on the [Action menu](#).
- Open the Job Step record and click the **Delete** button.

8.9 Running an SAP Task

You can run an SAP task:

- Manually, by clicking the [Launch](#) or [Launch with Variables](#) button in the SAP tasks list or SAP Task Details [Action menu](#).
- As part of a [workflow](#).
- [Specify triggers](#) that run the task automatically based on times or events.

8.10 Monitoring Task Execution

You can monitor all system activity from the [Activity Monitor](#) and can view activity history from the [History list](#).