stonebranch

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Opswise Controller 6.1.x

Troubleshooting and Tutorials

Troubleshooting

Troubleshooting

Troubleshooting information is categorized into two areas:

- Problem Resolution
- Error Messages

Problem Resolution

Problem Resolution

This page provides links to problems, and their solutions, that you might encounter with Opswise Controller.

Database

- Error in your SQL syntax
- Maximum open cursors have been exceeded
- Out-of-Range Value during Database Initialization
- JDBC Connections Time Out
- DB2 JDBC License Error

Installation

- Processes Will Not Start Automatically (Debian Linux)
- Windows install fails with 'Service marked for deletion'
- Error when Starting Controller
- Tomcat Post Limit: STATUS_MAX_POST_SIZE_EXCEEDED

Operations

- Cannot launch a task
- VBScript stuck in "Running" state
- My Opswise Controller License has Expired
- Packet for query is too large
- Invalid login credentials for refreshing target agents
- Invalid Call Error: Invalid call to setDataSource()

Error in your SQL syntax

Problem

When you execute an SQL task that includes multiple SQL commands, the following error message (for example) may display:

```
INSERT INTO opswise_demo (name, value) values ('A', 'F');
INSERT INTO opswise_demo (name, value) values ('B', 'S');
INSERT INTO opswise_demo (name, value) values ('C', 'F');
```

Solution

Multiple queries, by default, are disabled for MySQL. To enable multiple queries, append the following string to the Connection URL field in the Database Connections resource definition:

```
?allowMultiQueries=true
```

The following example is a URL connection string for a MySQL Database Connection resource definition:

```
jdbc:mysql://localhost:3306/opswise?allowMultiQueries=true
```

Maximum open cursors have been exceeded

Problem

During large imports on Oracle, you could receive following error message:

```
ORA-01000: maximum open cursors exceeded
```

(The cursors are used only during the import; they then are closed.)

Issue the following **sql*plus** utility command to check the current value for maximum open cursors:

```
show parameter open_cursors
```

A listing similar to the following will display:

```
SQL> show parameter open_cursors;

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
open_cursors                         integer     1000
```

Solution

An **`open_cursors`** value of 1000 should be sufficient for all large imports.

You can temporarily set the **`open_cursors`** value with the following SQL:

```
alter system set open_cursors=1000
```

To make a permanent change, you must set the **`open_cursors`** value in the initialization parameters file.

Out-of-Range Value during Database Initialization

Problem

During the database initialization performed on initial start-up, you could receive the following message:

```
The conversion of a varchar data type to a datetime data type of the value is out of range.
```

The problem likely is that the database was created in SQL SERVER Management Studio with a user that has other than English as the default language.

Solution

Verify the installed default language and set the language to U.S. English.

To check what default language a server has installed, use the following SQL command:

```
sp_configure 'default language'
```

If the resulting value is not 0, the default language is not U.S. English. Run the following SQL command to find the installed default language setting and date format used:

```
select name ,alias, dateformat
from syslanguages
   where langid =
   (select value from master..sysconfigures
      where comment = 'default language')
```

To set the default language to U.S. English, use the following SQL statements:

```
sp_configure 'default language', 0
reconfigure with override
```

For further details, refer to this Microsoft Support page.

JDBC Connections Time Out

Problem

JDBC connections from Linux to MS SQL Server 2008 R2/Windows 2008 R2 time out after 40 seconds causing SQL/Stored Procedure Tasks that take longer than 40 seconds to fail with the following exception:

```
2014-09-22-14:51:37:034 -0400  ERROR
[Ops.General.15.EP.SqlHandler.ecd8ab62183f4b9dbf32d3ea4ad0a126.74b824ad1ca84142a40d3ec1f84d4d2b.0]
SQLServerException - Connection reset
com.microsoft.sqlserver.jdbc.SQLServerException: Connection reset
          at com.microsoft.sqlserver.jdbc.SQLServerConnection.terminate(SQLServerConnection.java:1667)
          at com.microsoft.sqlserver.jdbc.SQLServerConnection.terminate(SQLServerConnection.java:1654)
          at com.microsoft.sqlserver.jdbc.TDSChannel.read(IOBuffer.java:1789)
          at com.microsoft.sqlserver.jdbc.TDSReader.readPacket(IOBuffer.java:4838)
          at com.microsoft.sqlserver.jdbc.TDSCommand.startResponse(IOBuffer.java:6150)
          at
com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement.doExecutePreparedStatement(SQLServerPreparedState
at
com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement$PrepStmtExecCmd.doExecute(SQLServerPreparedStatem
at com.microsoft.sqlserver.jdbc.TDSCommand.execute(IOBuffer.java:5696)
          at
com.microsoft.sqlserver.jdbc.SQLServerConnection.executeCommand(SQLServerConnection.java:1715)
          at
com.microsoft.sqlserver.jdbc.SQLServerStatement.executeCommand(SQLServerStatement.java:180)
          at
com.microsoft.sqlserver.jdbc.SQLServerStatement.executeStatement(SQLServerStatement.java:155)
          at
com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement.execute(SQLServerPreparedStatement.java:332)
          at
com.stonebranch.opswise.server.events.SqlEventHandler.storedProc(SqlEventHandler.java:266)
```

Resolution

To disable TCP Chimney Offload, follow these steps:

Step 1	Use administrative credentials to open a command prompt.
Step 2	At the command prompt, enter the following command: `netsh int tcp set global chimney=disabled`
Step 3	Press ENTER:.

For additional information, see:

http://support.microsoft.com/kb/951037

DB2 JDBC License Error

Problem

A SQL or Stored Procedure task using a DB2 Database Connection may fail with the following error message:

```
The IBM Data Server for JDBC and SQLJ license was invalid or was not activated for the DB2 for z/OS
subsystem. If you are connecting
directly to the data server and using DB2 Connect Unlimited Edition for System z, perform the
activation step by running the activation
program in the license activation kit. If you are using any other edition of DB2 Connect, obtain the
license file, db2jcc_license_cisuz.jar,
from the license activation kit, and follow the installation directions to include the license file in
the class path.
```

Solution

The **`db2jcc_license_cisuz.jar`** file needs to be included in the classpath for Universal Controller.

Step 1	Copy the **`db2jcc_license_cisuz.jar`** file to the following directory: **Windows** **`[tomcat-install]\webapps\opswise\WEB-INF\lib`** **UNIX** **`[tomcat-install]/webapps/opswise/WEB-INF/lib`**
Step 2	Restart Universal Controller.

Processes Will Not Start Automatically (Debian Linux)

Problem

For Debian Linux environment: Outboard 5.1.0 processes will not start automatically at boot time.

Debian Linux does not provide the **chkconfig** command and therefore cannot work with the runlevels specified in the opsagent, opstransport, opsmsghub scripts provided in `/etc/init.d`.

This is a known problem; we are working on a solution.

Windows install fails with 'Service marked for deletion'

Problem

In a Windows environment, for an upgrade installation of the Outboard 5.1.0 components, the install fails with the following message:

```
'This Service is marked for deletion'
```

Solution

Before running the install or upgrade process, make sure you first exit the Windows Services Console. If you do not, you likely will get this error.

If this occurs, exit the Windows Services application and re-run the install.

Error when Starting Controller

Problem

Upon starting the Opswise Controller, the `opswise.log` shows ERR:

```
SQLSTATE: HY000, SQLERR: 1040, ERRMSG: [unixODBC][MySQL][ODBC 5.1 Driver]Too many connections
```

Solution

You must set additional connections in your database server:

```
MySQL - /etc/my.conf - max_connections=500 (default is either 100 or 150)
```

Tomcat Post Limit

Problem

The following error message displays:

```
The server did not receive the data that was sent to it.  Please see the documentation for
isc.RPCResponse.STATUS_MAX_POST_SIZE_EXCEEDED
```

Resolution

Remove the post limit by specifying the following attribute on the **<Connector>** element in **`conf/server.xml`**:

`maxPostSize="-1"`

Cannot launch a task

Problem

You cannot launch a task.

The problem may be with your credentials. Check the stderr for the following message:

```
ops_suexec: Not enough privileges. Check SUID bit and binary owner.
```

Solution

If the error message is present, issue the following commands as **root** in the `$WMS_HOME/bin` directory:

```
chown root ops_suexec
chmod 4755 ops_suexec
```

VBScript stuck in "Running" state

Problem

By default, Windows uses a GUI-based VBScript interpreter (`wscript.exe`). With this interpreter, if your script tries to display an error message that requires a user-response (for example, **Click OK**), you will never see the dialog box. The script therefore gets stuck in the "Running" state.

Solution

To avoid this, we recommend you use the console version of the VBScript interpreter (`cscript.exe`). To do so, specify `cscript.exe` before the script name in a task definition, as shown in the following example:

```
"cscript.exe C:\Work\script.vbs".
```

My Opswise Controller License has Expired

Problem

If your Opswise Controller license has expired, you will not be able to run any tasks. If you attempt to run a task under an expired license, the Controller will place the task in the Defined state.

When you log in to the Controller, the Universal Automation Center Console will displays a license expiration informational message if your license will expire within a week, and an error message if your license already has expired.

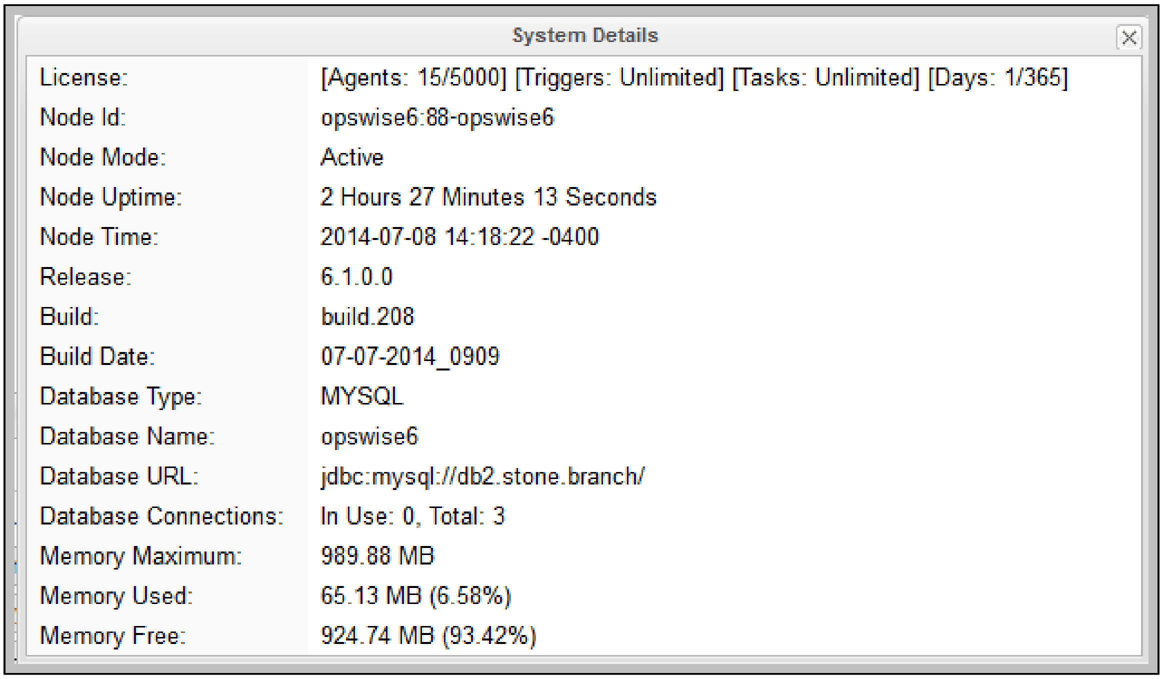
Additionally, if you have configured the Controller for System Notifications, system notifications are sent when the Controller license will expire in seven days and if the license already has expired.

There are two other methods you can use to check on license expiration.

Method 1

Check the System Details widget (view the system-defined Home Dashboard or, on the Reporting navigation pane, click **Widgets**) to see how many days are left on your license.

The **Days: #/#** entry in the **License** field indicates the current day of your current license and the total number of days in the license. If the numbers are identical, your license has expired.



System Details

License:	[Agents: 15/5000] [Triggers: Unlimited] [Tasks: Unlimited] [Days: 1/365]
Node Id:	opswise6:88-opswise6
Node Mode:	Active
Node Uptime:	2 Hours 27 Minutes 13 Seconds
Node Time:	2014-07-08 14:18:22 -0400
Release:	6.1.0.0
Build:	build.208
Build Date:	07-07-2014_0909
Database Type:	MYSQL
Database Name:	opswise6
Database URL:	jdbc:mysql://db2.stone.branch/
Database Connections:	In Use: 0, Total: 3
Memory Maximum:	989.88 MB
Memory Used:	65.13 MB (6.58%)
Memory Free:	924.74 MB (93.42%)

Method 2

Check the Controller log file.

If your license has expired, the following two messages should appear in the log at the midnight roll-over:

```
2015-01-07-00:00:00:006   WARN [Ops.Timer.Forecast_Refresh.0] License Violation: Number of Days has
exceeded # suspending system
2015-01-07-00:00:00:006   INFO [Ops.Timer.Forecast_Refresh.0] Pausing the server.
```

Additionally, this message should appear in the log if you try to run a task under an expired license:

```
2015-01-07-09:32:27:728   INFO [Ops.Available.2367.0] System paused, waiting for resume
```

Solution

Contact Stonebranch Customer Support.

Packet for query is too large

Problem

During operations, the following message may appear in the Opswise Controller log:

```
Packet for query is too large (1084852 > 1048576).
```

Solution

Change this value on the database server by setting the MySQL **max_allowed_packet** configuration variable.

For detailed information about this variable, refer to the MySQL reference manual.

Error when refreshing target agents

Problem

An error occurs when you click **Refresh Target Agents** on a Promotion Target record and you are using invalid login credentials for the target Opswise Controller instance.

The user interface on source machine will show the following error:

```
GET http://NN.NNN.NN.N:8080/opswise/resources/agents/list returned a response status of 401
Unauthorized
```

The the Controller log on the source machine will show the following error:

```
ERROR [http-8080-10] com.sun.jersey.api.client.UniformInterfaceException:
GET http:///opswise/resources/agents/list returned a response status of 401 Unauthorized"
```

The target machine will return the following error:

```
ERROR [http--#] *** ERROR *** Login using Basic Authentication failed for:
```

Solution

Update the Promotion Target record with valid login credentials and try the promotion again.

Invalid Call Error

Problem

The following error message displays:

```
onUncaughtException: Exception caught: Invalid call to setDataSource() passing null.
```

Resolution

You may need to update the **LimitRequestLine** property in the Apache `httpd.conf` file to its default value, **8190**.

Error Messages

Error Messages

This page identifies error messages (in alphabetical order) that you may receive for Opswise Controller.

For each error, there is a link to the cause problem, and its solution, in Problem Resolution.

```
GET http://NN.NNN.NN.N:8080/opswise/resources/agents/list returned a response status of 401
Unauthorized
```

(in user interface on source machine)

```
ERROR [http-8080-10] com.sun.jersey.api.client.UniformInterfaceException:
GET http:///opswise/resources/agents/list returned a response status of 401 Unauthorized"
```

(in Opswise log on source machine)

```
ERROR [http--#] *** ERROR *** Login using Basic Authentication failed for:
```

(on Target machine)

See Error when refreshing target agents.

```
INSERT INTO opswise_demo (name, value) values ('A', 'F');
```

See Error in your SQL syntax.

```
onUncaughtException: Exception caught: Invalid call to setDataSource() passing null.
```

See Invalid Call Error.

```
ops_suexec___Not enough privileges. Check SUID bit and binary owner
```

See Cannot launch a task.

```
ORA-01000: maximum open cursors exceeded
```

See Maximum open cursors have been exceeded.

```
Packet for query is too large (1084852 > 1048576
```

See Packet for query is too large.

```
SQLSTATE: HY000, SQLERR. 1040, ERRMSG. unixODBC MySQL ODBC 5.1 Driver Too many connections
```

See Error when Starting Controller.

```
The conversion of a varchar data type to a datetime data type resulted in an out-of-range value.
```

See Out-of-Range Value during Database Initialization.

```
The IBM Data Server for JDBC and SQLJ license was invalid or was not activated for the DB2 for z/OS
subsystem. If you are connecting directly to the data server and using DB2 Connect Unlimited Edition
for System z, perform the activation step by running the activation program in the license activation
kit. If you are using any other edition of DB2 Connect, obtain the license file,
db2jcc_license_cisuz.jar, from the license activation kit, and follow the installation directions to
include the license file in the class path.
```

See DB2 JDBC License Error.

```
The server did not receive the data that was sent to it. Please see the documentation for
isc.RPCResponse.STATUS_MAX_POST_SIZE_EXCEEDED
```

See Tomcat Post Limit.

```
'This Service is marked for deletion'
```

See Windows install fails with 'Service marked for deletion'.

Tutorials

Introduction

The tutorials guide you through features of Opswise Controller. They also provide links to more detailed information about each aspect of the Controller.

Once you have completed the tutorials, you should have a basic understanding of how the features work together to automate your environment.

Before you begin, we recommend that you read the Setting up Opswise Controller and User Interface sections of this documentation to familiarize yourself with user interface navigation and terminology.

> **Note**
> During the course of performing these tutorials, you will build up a small database of demonstration records that you will re-use in subsequent exercises. To avoid having to reenter data, do not delete the records.

The navigation pane on the left lists the tutorials in the sequence they should be read; many of them refer to information created in one or more previous tutorials.

The following table lists the tutorials by topic, rather than sequence.

Tasks
Creating and Manually Launching a Simple Task
Running a Windows Task
Launching a Task Automatically Using a Simple Time Trigger
Launching a Task Every Monday Except Holidays
Launching a Task Every Two Hours During Workday
Launching Tasks at a Future Time
Launching an Email Task Based on a File Monitor
Launching an Email Task Based on a Task Monitor
Launching Tasks Using a Cron Trigger
Aborting a Process Launched by a Task
Force Finishing, Force Finish-Cancelling, and Cancelling a Task
Accessing Task Instance Details
Monitoring Task Activity
Workflows
Creating a Simple Workflow
Running a Workflow with a Conditional Path
Running a Workflow with Multiple Conditional Paths
Running a Workflow with Skipped Criteria

Variables

Custom Days

Forecasting

Virtual Resources

User Interface

Business Services

Reports

Security

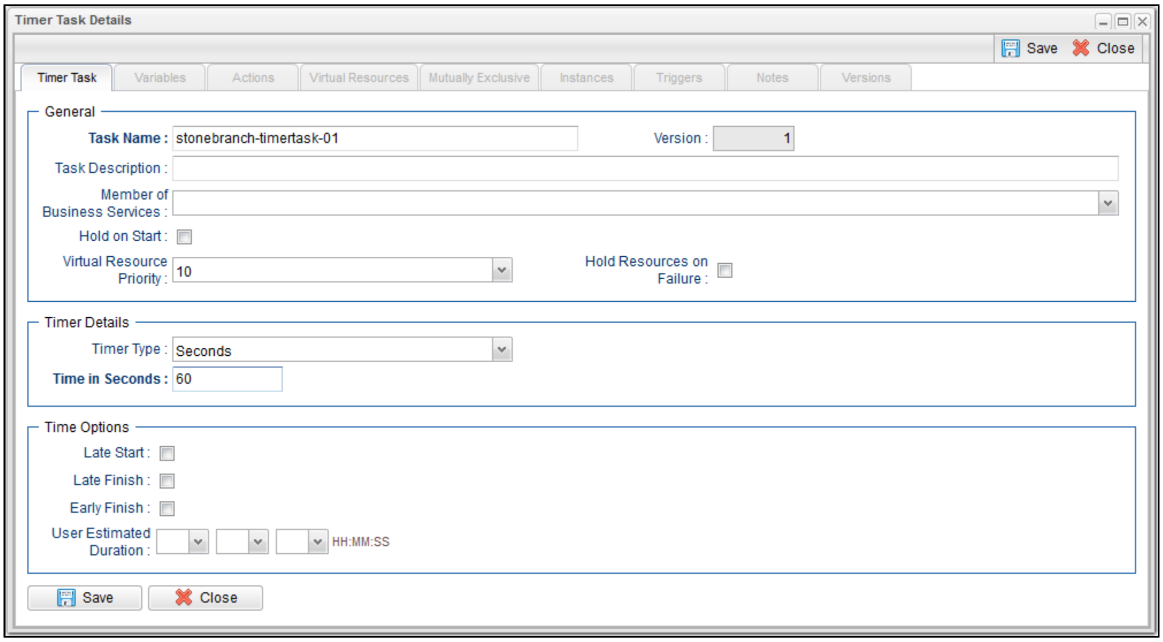
Tutorial - Creating and Manually Launching a Task

In this tutorial, you will:

- Create a Timer task.
- Manually launch the task.
- View task instance Details of the task.

<table>
<tr><td><b>Step 1</b></td><td>From the Automation Center navigation pane, select <b>Tasks &gt; Timer Task</b>. The Timer Tasks list displays.</td></tr>
<tr><td><b>Step 2</b></td><td>Click <b>New</b>. The Timer Task Details displays.

- In the Task Name field, enter **stonebranch-timertask-01**.
- In the Time in Seconds field, enter **60**.



General

Task Name : stonebranch-timertask-01

Version : 1

Task Description :

Member of Business Services :

Hold on Start : □

Virtual Resource Priority : 10

Hold Resources on Failure : □

Timer Details

Timer Type : Seconds

Time in Seconds : 60

Time Options

Late Start : □

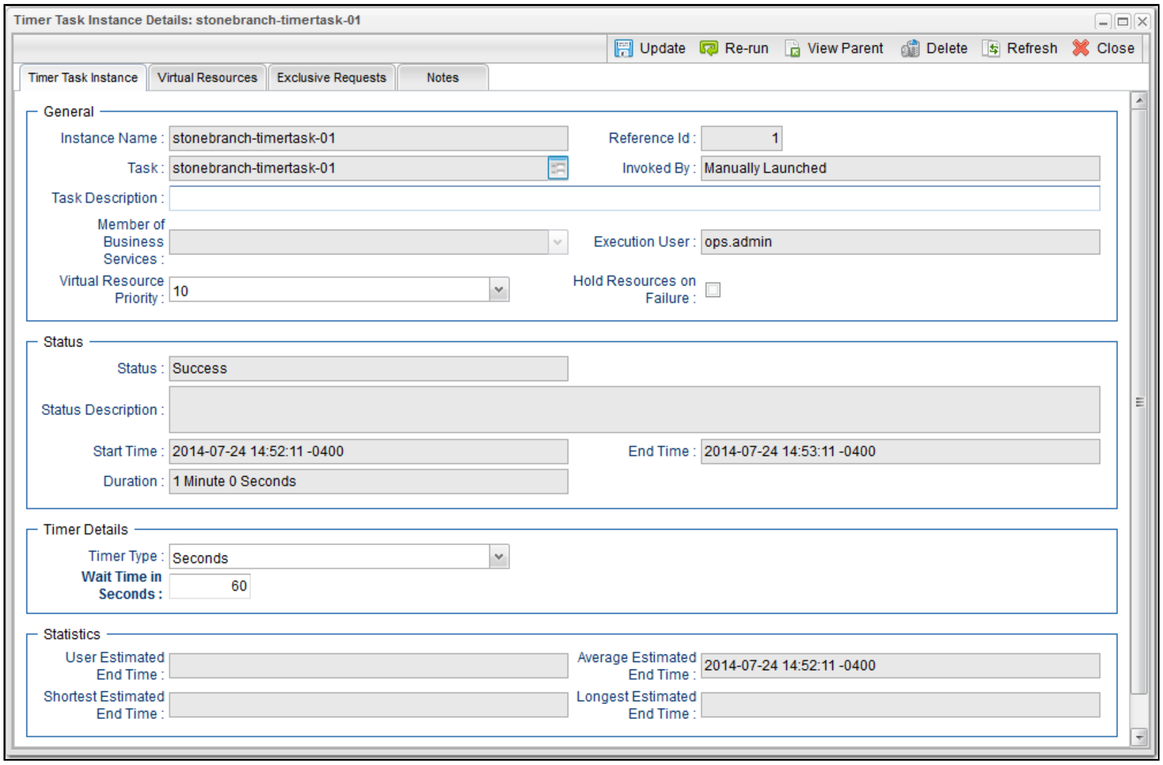
Late Finish : □

Early Finish : □

User Estimated Duration : HH:MM:SS

</td></tr>
<tr><td><b>Step 3</b></td><td>Click <b>Save</b>.</td></tr>
<tr><td><b>Step 4</b></td><td>On the Timer Tasks list, right-click <b>stonebranch-timertask-01</b> task to display an Action menu.</td></tr>
<tr><td><b>Step 5</b></td><td>Click <b>Launch Task</b>.</td></tr>
<tr><td><b>Step 6</b></td><td>From the <b>Automation Center</b> navigation pane, select <b>Task Instances > Activity</b>. The Activity Monitor displays.</td></tr>
<tr><td><b>Step 7</b></td><td>Locate the <b>stonebranch-timertask-01</b> task instance. When the task instance completes, the status changes from <b>Running</b> to <b>Success</b>.</td></tr>
</table>

Step 8 Click the Details icon next to the **Instance Name** of **stonebranch-timertask-01** to display Details of the task instance.



Timer Task Instance Details: stonebranch-timertask-01

General

Instance Name : stonebranch-timertask-01
Reference Id : 1
Task : stonebranch-timertask-01
Invoked By : Manually Launched
Task Description :
Member of Business Services :
Execution User : ops.admin
Virtual Resource Priority : 10
Hold Resources on Failure : □

Status

Status : Success
Status Description :
Start Time : 2014-07-24 14:52:11 -0400
End Time : 2014-07-24 14:53:11 -0400
Duration : 1 Minute 0 Seconds

Timer Details

Timer Type : Seconds
Wait Time in Seconds : 60

Statistics

User Estimated End Time :
Average Estimated End Time : 2014-07-24 14:52:11 -0400
Shortest Estimated End Time :
Longest Estimated End Time :

For additional information, see:

- Creating Tasks

Tutorial - Running a Windows Task

To perform this tutorial, you need a running Opswise Universal Agent for Windows.

Creating a Simple Windows Task

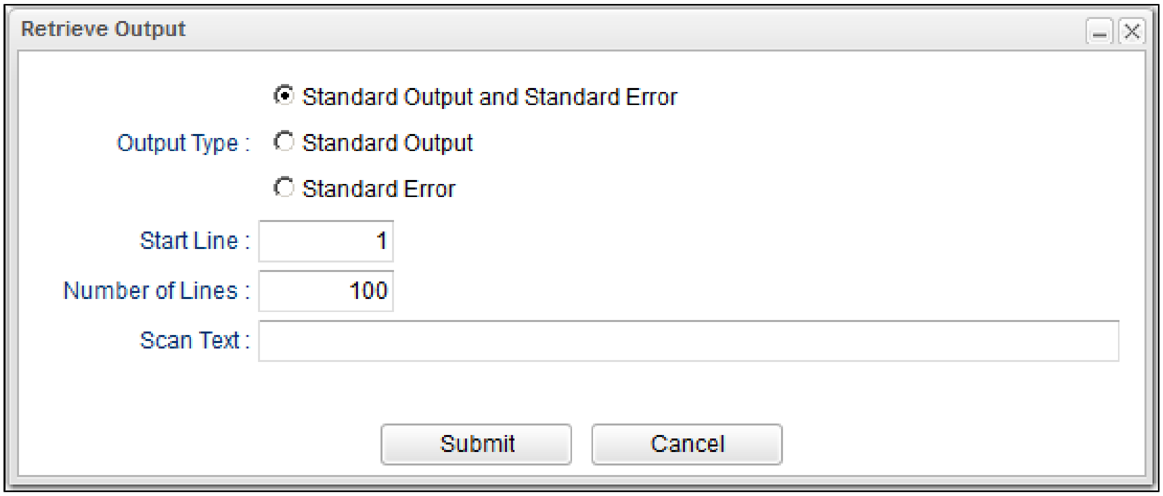
Step 1	From the Automation Center navigation pane, select **Tasks > Windows Tasks**. The Windows Tasks list displays.
Step 2	In the empty Windows task Details below the list: • In the Task Name field, enter **stonebranch-windowstask-01**. • In the Agent field, select your Windows agent. • In the Command field, enter **md c:\tutorial**.
Step 3	Click **Save**.
Step 4	On the Windows Tasks list, right-click **stonebranch-windowstask-01** to display an Action menu.
Step 5	Click **Launch Task**.
Step 7	Check the Activity Monitor for the task instance.

Manually Retrieving Output from a Windows Task

In this Windows task, we will run a DIR command. Normally, you would use the Automatic Output Retrieval field to specify that any output generated by the command be attached to the task instance after the task completes. However, if you did not specify that output be attached, you can manually retrieve it after the task instance has run. In this exercise, we will manually retrieve and display the output.

Step 1	Use the same steps to create another Windows task called **stonebranch-windowstask-02**. Do not specify Automatic Output Retrieval, and use the following command: `dir c:\windows`
Step 2	Save and launch the task.
Step 3	Locate and open the task instance on the Activity Monitor.

Step 4 Note that the Output tab is empty. Click **Retrieve Output**. The Retrieve Output window appears:



Output Type : ● Standard Output and Standard Error ○ Standard Output ○ Standard Error

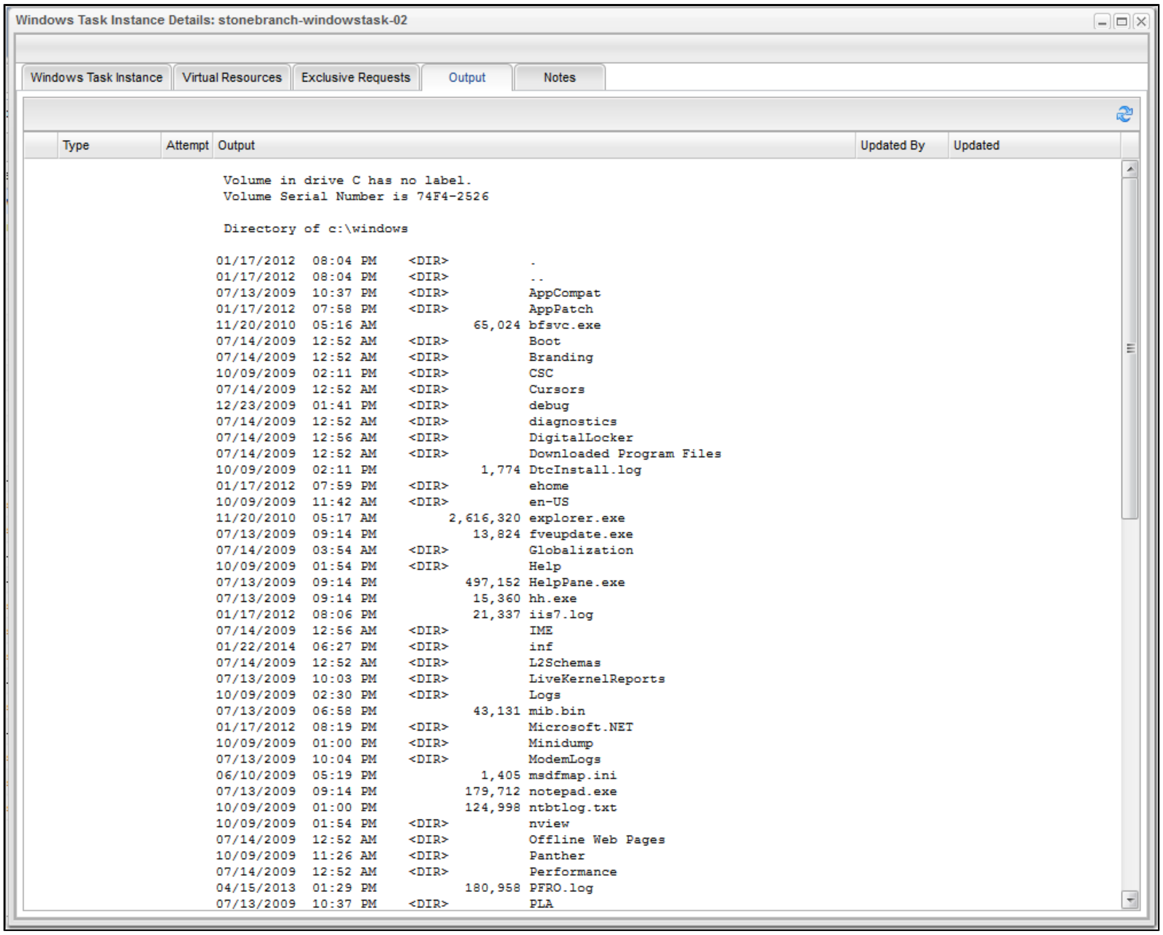
Start Line : 1

Number of Lines : 100

Scan Text :

Step 5 Change the number of lines to 300 and click **Submit**.

Step 6 Click the Output tab. The STDOUT (standard output) displays on the output list, as shown in the following example:

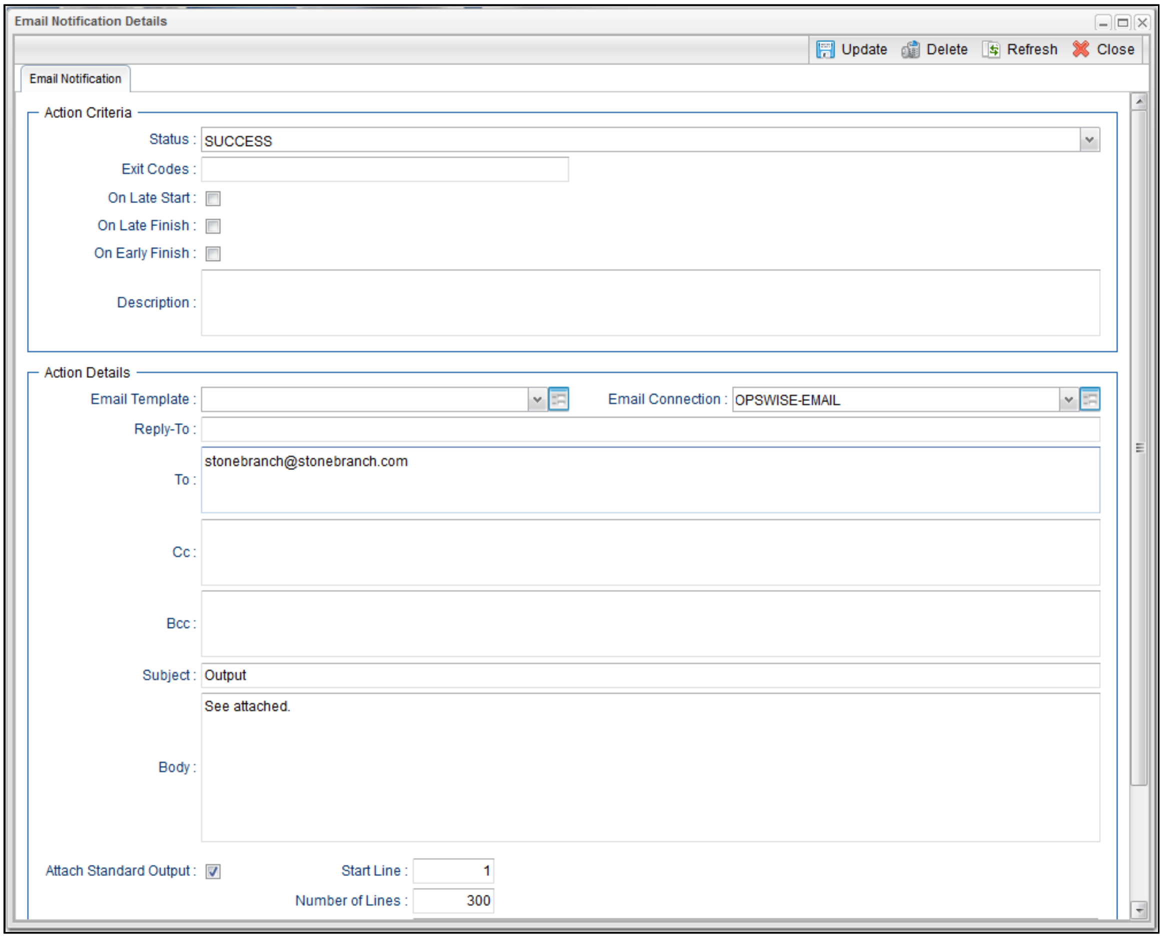


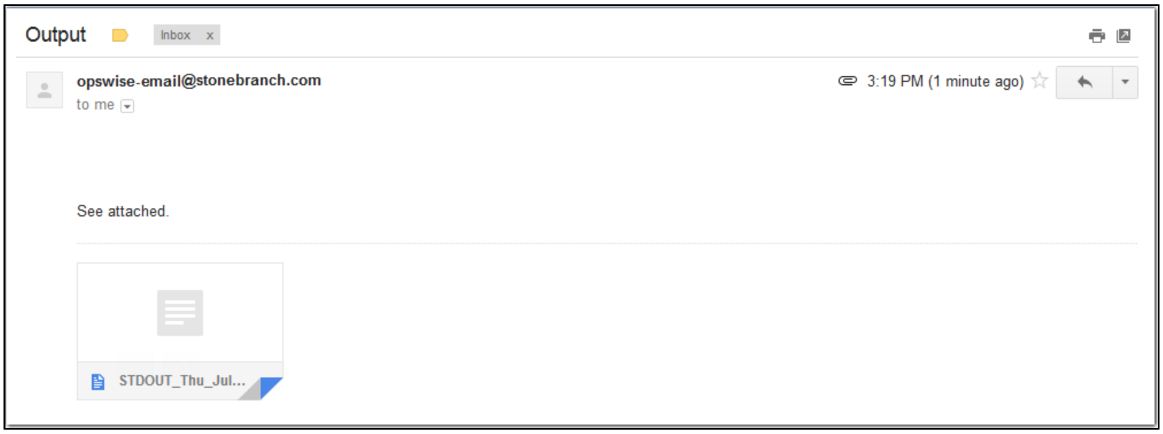
```
 Volume in drive C has no label.
 Volume Serial Number is 74F4-2526

 Directory of c:\windows

01/17/2012  08:04 PM    <DIR>          .
01/17/2012  08:04 PM    <DIR>          ..
07/13/2009  10:37 PM    <DIR>          AppCompat
01/17/2012  07:58 PM    <DIR>          AppPatch
11/20/2010  05:16 AM            65,024 bfsvc.exe
07/14/2009  12:52 AM    <DIR>          Boot
07/14/2009  12:52 AM    <DIR>          Branding
10/09/2009  02:11 PM    <DIR>          CSC
07/14/2009  12:52 AM    <DIR>          Cursors
12/23/2009  01:41 PM    <DIR>          debug
07/14/2009  12:52 AM    <DIR>          diagnostics
07/14/2009  12:56 AM    <DIR>          DigitalLocker
07/14/2009  12:52 AM    <DIR>          Downloaded Program Files
10/09/2009  02:11 PM             1,774 DtcInstall.log
01/17/2012  07:59 PM    <DIR>          ehome
10/09/2009  11:42 AM    <DIR>          en-US
11/20/2010  05:17 AM         2,616,320 explorer.exe
07/13/2009  09:14 PM            13,824 fveupdate.exe
07/14/2009  03:54 AM    <DIR>          Globalization
10/09/2009  01:54 PM    <DIR>          Help
07/13/2009  09:14 PM           497,152 HelpPane.exe
07/13/2009  09:14 PM            15,360 hh.exe
01/17/2012  08:06 PM            21,337 iis7.log
07/14/2009  12:56 AM    <DIR>          IME
01/22/2014  06:27 PM    <DIR>          inf
07/14/2009  12:52 AM    <DIR>          L2Schemas
07/13/2009  10:03 PM    <DIR>          LiveKernelReports
10/09/2009  02:30 PM    <DIR>          Logs
07/13/2009  06:58 PM            43,131 mib.bin
01/17/2012  08:19 PM    <DIR>          Microsoft.NET
10/09/2009  01:00 PM    <DIR>          Minidump
07/13/2009  10:04 PM    <DIR>          ModemLogs
06/10/2009  05:19 PM             1,405 msdfmap.ini
07/13/2009  09:14 PM           179,712 notepad.exe
10/09/2009  01:00 PM           124,998 ntbtlog.txt
10/09/2009  01:54 PM    <DIR>          nview
07/14/2009  12:52 AM    <DIR>          Offline Web Pages
10/09/2009  11:26 AM    <DIR>          Panther
07/14/2009  12:52 AM    <DIR>          Performance
04/15/2013  01:29 PM           180,958 PFRO.log
07/13/2009  10:37 PM    <DIR>          PLA
```

Attaching Output to an Email Notification

In this exercise, we will modify the **stonebranch-windowstask-02** task with an Email notification that includes the output from the DIR command.

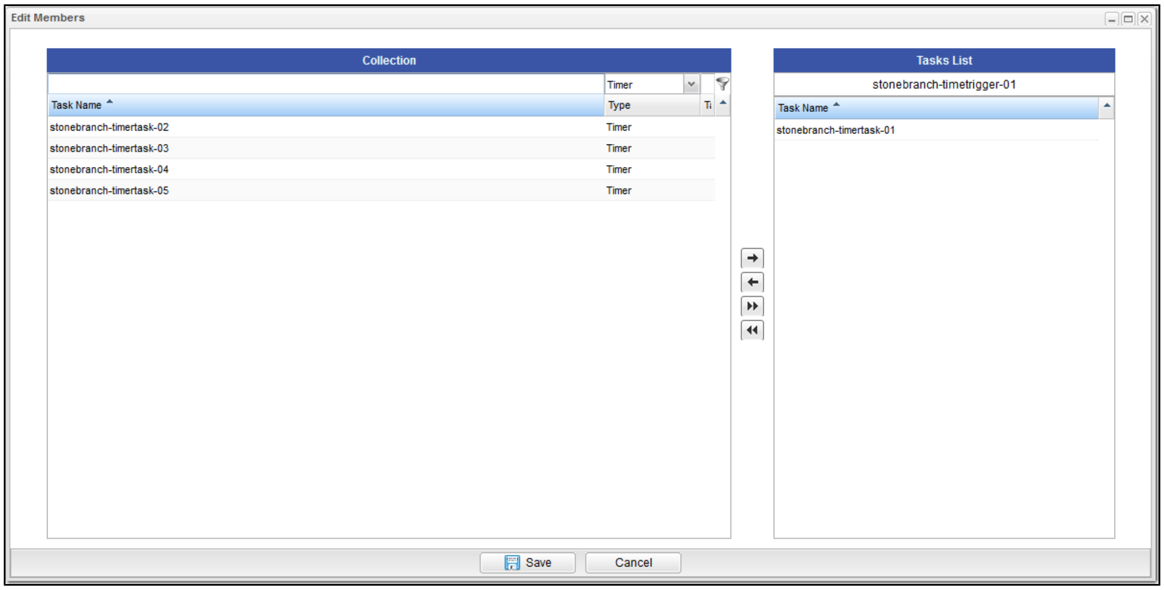
Step 1 Open the **stonebranch-windowstask-02** task.

Step 2	Click the **Actions** tab.
Step 3	Click **Email Notification** and then click the **New** button.
Step 4	In the Email Notification Details, specify the following: - Status=Success - Email Connection=Your email connection - To=Your email address - Subject=Output - Body=See attached. - Attach Standard Output=enabled - Start Line=1 - Number of lines=300  Email Notification Details Action Criteria Status : SUCCESS Exit Codes : On Late Start : ☐ On Late Finish : ☐ On Early Finish : ☐ Description : Action Details Email Template : Email Connection : OPSWISE-EMAIL Reply-To : To : stonebranch@stonebranch.com Cc : Bcc : Subject : Output Body : See attached. Attach Standard Output : ☑ Start Line : 1 Number of Lines : 300
Step 5	Click **Save**.
Step 6	Launch the **stonebranch-windowstask-02** task.

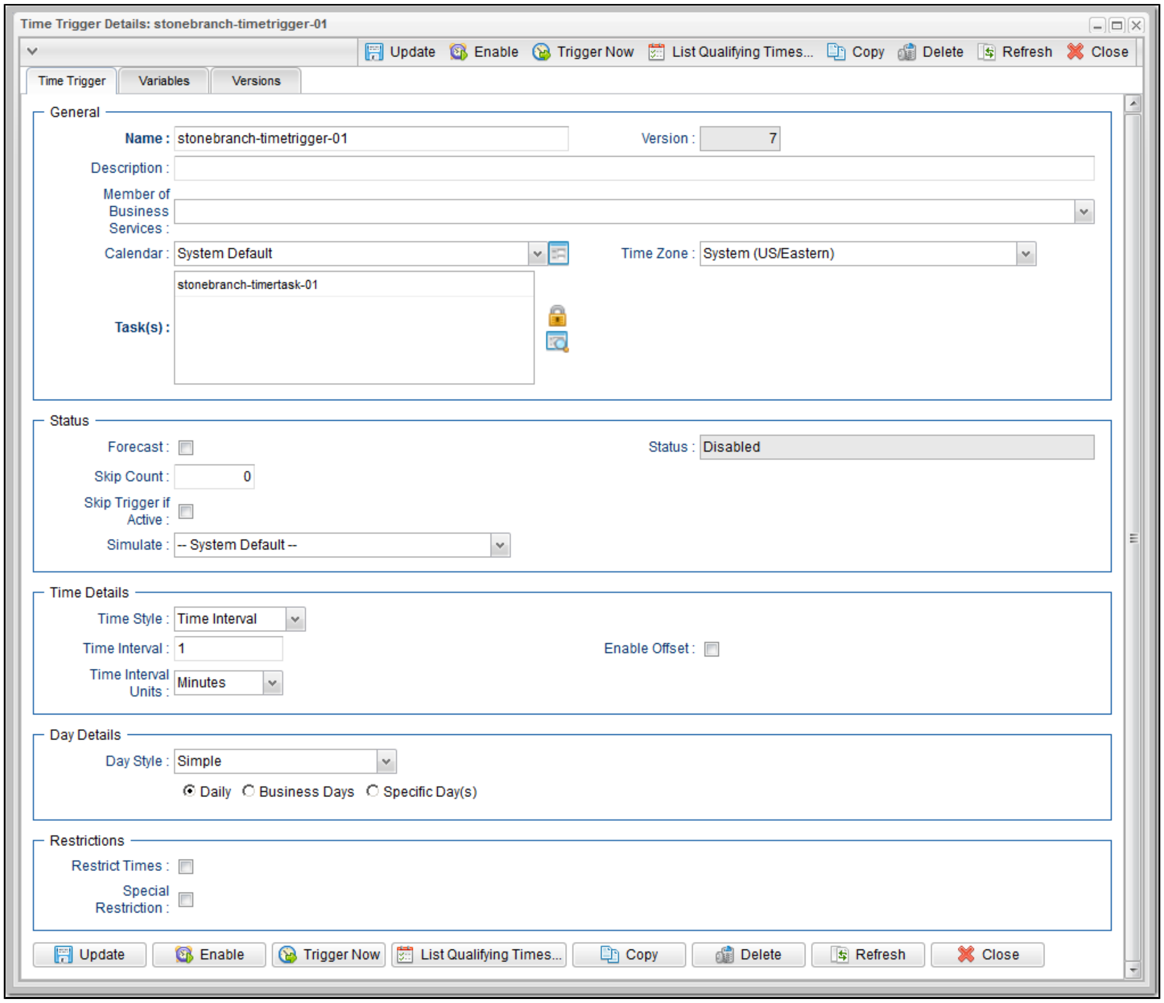
Step 7	Once the Windows task goes to success, check your inbox for the email. The output is attached, as shown in the following example.  Output opswise-email@stonebranch.com to me 3:19 PM (1 minute ago) See attached. STDOUT_Thu_Jul...

Tutorial - Launching a Task Automatically Using a Simple Time Trigger

In this exercise, we will define a time trigger that launches our Timer task every one minute.

Step 1	From the Automation Center navigation pane, select **Triggers > Time Triggers**.
Step 2	Click **New**.
Step 3	In the **Name** field, enter **stonebranch-timetrigger-01**.
Step 4	In the Task(s) field, click the **Add-Remove Multiple** icon.
Step 5	In the Collection window, locate the Timer task created in the Creating and Manually Launching a Task tutorial, **stonebranch-timertask-01**, move it to the Tasks List window, and click **Save**.  Edit Members Collection Timer Task Name — Type stonebranch-timertask-02 — Timer stonebranch-timertask-03 — Timer stonebranch-timertask-04 — Timer stonebranch-timertask-05 — Timer Tasks List stonebranch-timetrigger-01 Task Name stonebranch-timertask-01 Save — Cancel
Step 7	In the **Time Style** field, select **Time Interval**.
Step 8	In the **Time Interval** field, enter **1**.

Step 9 In the **Time Interval Units** field, select **Minutes**.



Time Trigger Details: stonebranch-timetrigger-01

General

Name : stonebranch-timetrigger-01
Version : 7
Description :
Member of Business Services :
Calendar : System Default
Time Zone : System (US/Eastern)
Task(s) : stonebranch-timertask-01

Status

Forecast : □
Status : Disabled
Skip Count : 0
Skip Trigger if Active : □
Simulate : -- System Default --

Time Details

Time Style : Time Interval
Time Interval : 1
Enable Offset : □
Time Interval Units : Minutes

Day Details

Day Style : Simple
● Daily ○ Business Days ○ Specific Day(s)

Restrictions

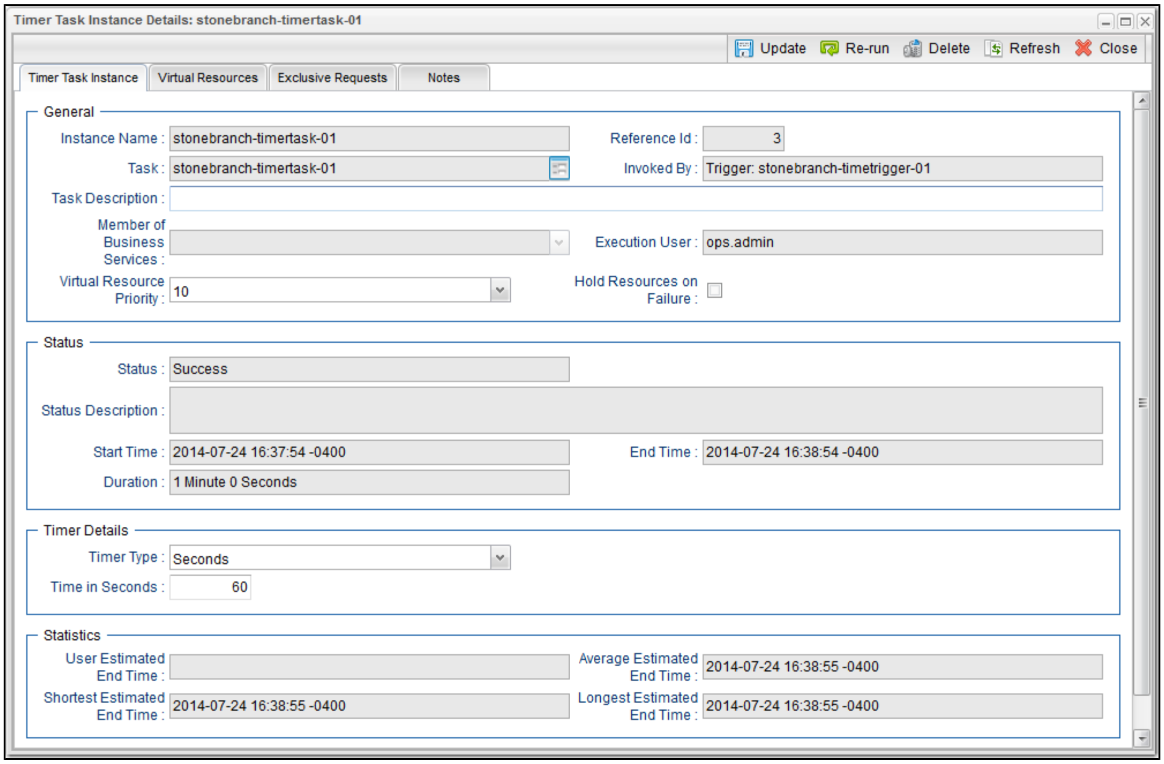
Restrict Times : □
Special Restriction : □

Step 10 Click **Save**.

Step 11 By default, triggers are disabled. To enable this trigger:

1. On the Time Triggers list, right-click **stonebranch-timetrigger-01** to display an Action menu.
2. Click **Enable** to enable the trigger. Note that the **Enabled** column on the trigger list now displays a green check-mark for this trigger.

Step 12 From the **Automation Center** navigation pane, select **Activity** to display the Activity Monitor. Note that a new instance of **stonebranch-timertask-01** appears every one minute.

Step 13	Click the most recent instance of **stonebranch-timertask-01** to view its details, and note that the **Invoked By** field contains the name of the trigger that launched this task. 

Timer Task Instance Details: stonebranch-timertask-01

General

Instance Name : stonebranch-timertask-01

Reference Id : 3

Task : stonebranch-timertask-01

Invoked By : Trigger: stonebranch-timetrigger-01

Task Description :

Member of Business Services :

Execution User : ops.admin

Virtual Resource Priority : 10

Hold Resources on Failure : □

Status

Status : Success

Status Description :

Start Time : 2014-07-24 16:37:54 -0400

End Time : 2014-07-24 16:38:54 -0400

Duration : 1 Minute 0 Seconds

Timer Details

Timer Type : Seconds

Time in Seconds : 60

Statistics

User Estimated End Time :

Average Estimated End Time : 2014-07-24 16:38:55 -0400

Shortest Estimated End Time : 2014-07-24 16:38:55 -0400

Longest Estimated End Time : 2014-07-24 16:38:55 -0400

For additional information, see:

- Triggers
- Time Trigger
- Enabling and Disabling Triggers

Tutorial - Launching a Task Every Monday Except Holidays

Introduction

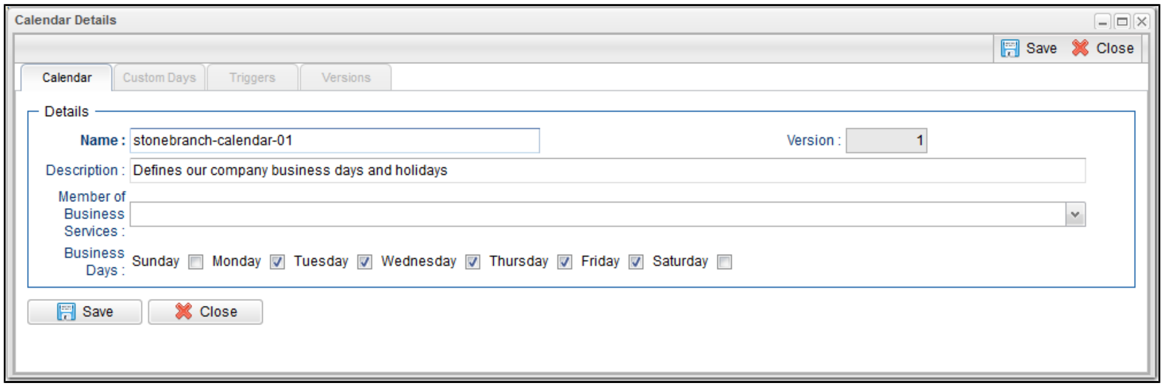
In this exercise, we will define a trigger that runs the **stonebranch-timertask-01** task (created in the Creating and Manually Launching a Simple Task tutorial) automatically every Monday at 1 p.m., except holidays.

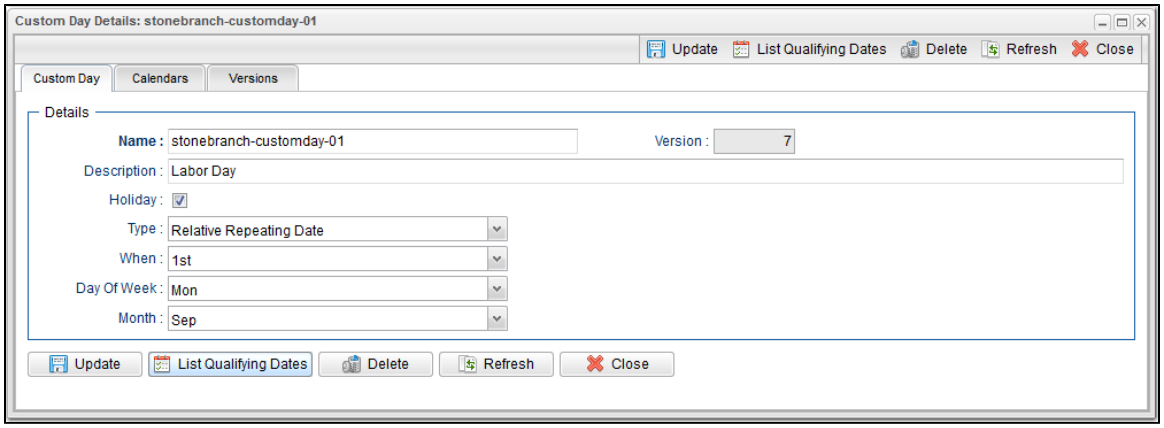
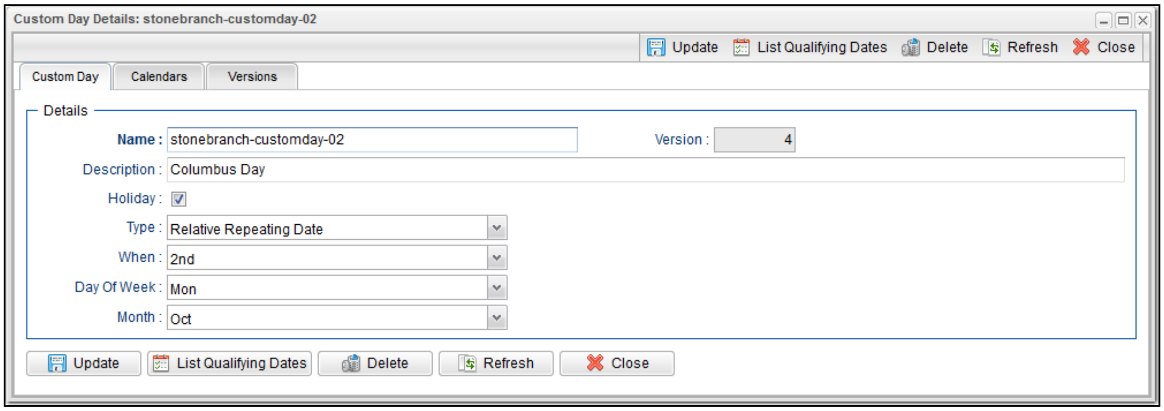
For cases where Monday falls on a holiday, we will define a special restriction in the trigger that instructs the Controller to run the task on the next business day.

We will define the business days and holidays in a calendar.

Create Calendar and Custom Days

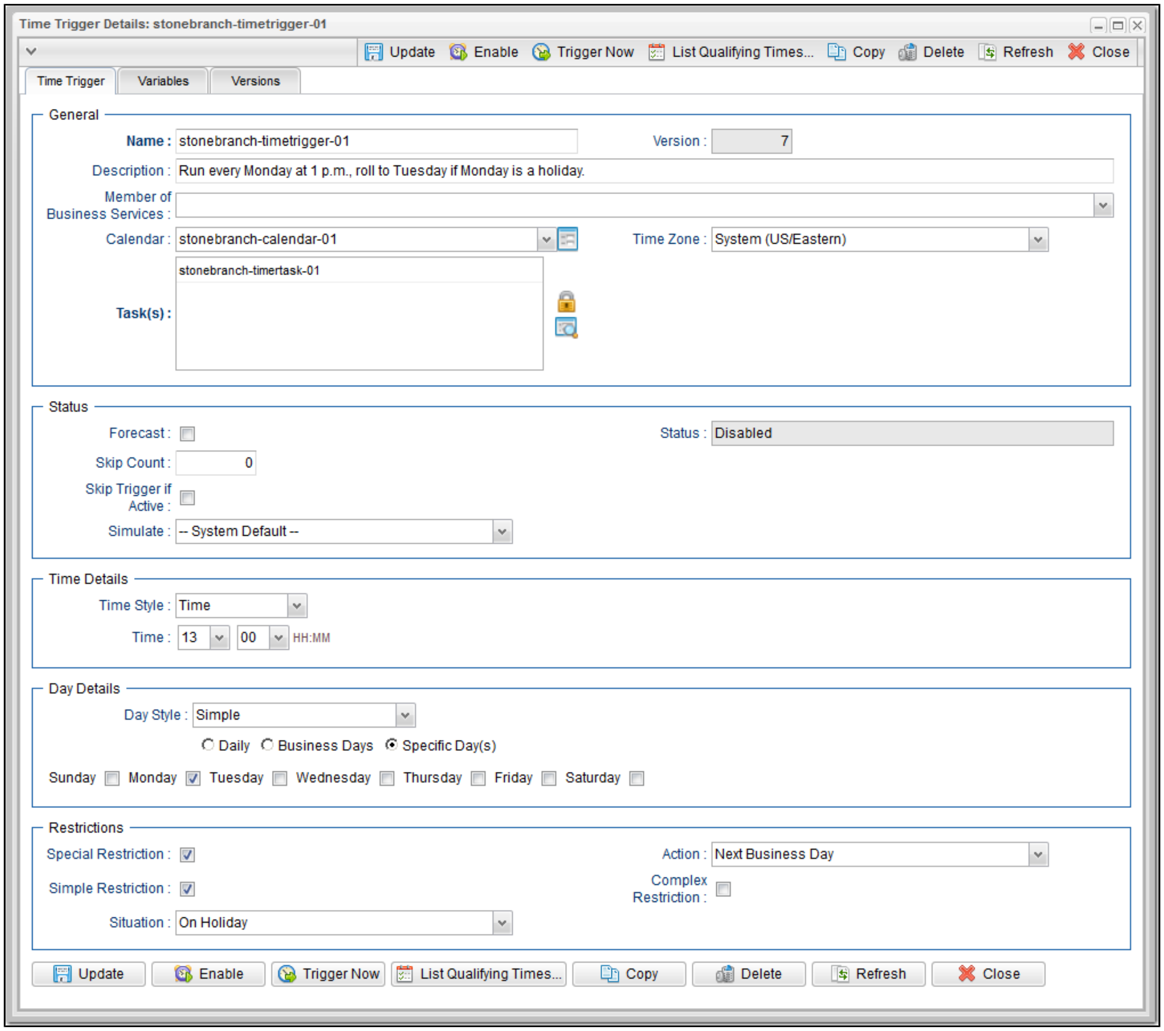
Before building the trigger, we will create the calendar:

Step 1	From the Automation Center navigation pane, **Others > Calendars** to display the Calendars list.
Step 2	Click **New** to display an empty Calendar Details.
Step 3	Enter **stonebranch-calendar-01** in the **Name** field.
Step 4	In the **Description** field, enter **Defines our company business days and holidays**.
Step 5	Do not change the default selections for **Business Days** (Monday through Friday). Click **Save**.  Calendar Details Save Close Calendar Custom Days Triggers Versions Details Name : stonebranch-calendar-01 Version : 1 Description : Defines our company business days and holidays Member of Business Services : Business Days : Sunday □ Monday ☑ Tuesday ☑ Wednesday ☑ Thursday ☑ Friday ☑ Saturday □
Step 6	Open **stonebranch-calendar-01** and click the **Custom Days** tab.
Step 7	On the **Custom Days** list, click the **New** button. A Custom Day Details for a new Custom Day displays.
Step 8	In the **Name** field, enter **stonebranch-customday-01**.
Step 9	In the **Description** field, enter **Labor Day**.
Step 9	Enable the **Holiday** field.

Step 10	In the **Type** field, select **Relative Repeating Date**. In the three additional fields that appear, make the following selections: - When = 1st - Day of Week = Mon - Month = Sep  Custom Day Details: stonebranch-customday-01 Update List Qualifying Dates Delete Refresh Close Custom Day Calendars Versions Details Name : stonebranch-customday-01 Version : 7 Description : Labor Day Holiday : ☑ Type : Relative Repeating Date When : 1st Day Of Week : Mon Month : Sep Update List Qualifying Dates Delete Refresh Close
Step 11	Click **Save** to add this Custom Day to the Calendar.
Step 12	On the **Custom Days** list, click the **New** button. A Custom Day Details for a new Custom Day displays.
Step 13	In the **Name** field, enter **stonebranch-customday-02**.
Step 14	In the **Description** field, enter **The founder's birthday.**
Step 15	Enable the **Holiday** field.
Step 16	In the **Type** field, select **Relative Repeating Date**. In the three additional fields that appear, make the following selections: - When = 2nd - Day of Week = Mon - Month = Oct  Custom Day Details: stonebranch-customday-02 Update List Qualifying Dates Delete Refresh Close Custom Day Calendars Versions Details Name : stonebranch-customday-02 Version : 4 Description : Columbus Day Holiday : ☑ Type : Relative Repeating Date When : 2nd Day Of Week : Mon Month : Oct Update List Qualifying Dates Delete Refresh Close
Step 17	Click **Save** to add this Custom Day to the Calendar.

Create a Time Trigger

Step 1	From the **Automation Center** navigation pane, select **Triggers > Time Trigger** to display the Time Triggers list.
Step 2	Click **New** to display an empty Time Trigger Details.
Step 3	In the **Name** field, enter **stonebranch-timetrigger-01**.
Step 4	In the **Description** field, enter **Run every Monday at 1 p.m., roll to Tuesday if Monday is a holiday**.

Step 5	In the **Calendar** field, select **stonebranch-calendar-01**.
Step 6	In the **Task(s)** field, select **stonebranch-timertask-01**.
Step 7	In the **Time Style** field, keep the default, **Time**.
Step 8	In the **Time** field, enter **13:00** (1 p.m. in 24-hour time).
Step 9	In the **Day Style** field, keep the default, **Simple**.
Step 10	Enable **Specific Day(s)** field and select **Monday**.
Step 11	Enable **Special Restriction** and select: • **On Holiday** in the **Situation** field. • **Next Business Day** in the **Action** field.
Step 12	Click **Save**. 

Time Trigger Details: stonebranch-timetrigger-01

General

Name : stonebranch-timetrigger-01

Version : 7

Description : Run every Monday at 1 p.m., roll to Tuesday if Monday is a holiday.

Member of Business Services :

Calendar : stonebranch-calendar-01

Time Zone : System (US/Eastern)

Task(s) : stonebranch-timertask-01

Status

Forecast : □

Status : Disabled

Skip Count : 0

Skip Trigger if Active : □

Simulate : -- System Default --

Time Details

Time Style : Time

Time : 13 00 HH:MM

Day Details

Day Style : Simple

○ Daily ○ Business Days ● Specific Day(s)

Sunday □ Monday ☑ Tuesday □ Wednesday □ Thursday □ Friday □ Saturday □

Restrictions

Special Restriction : ☑

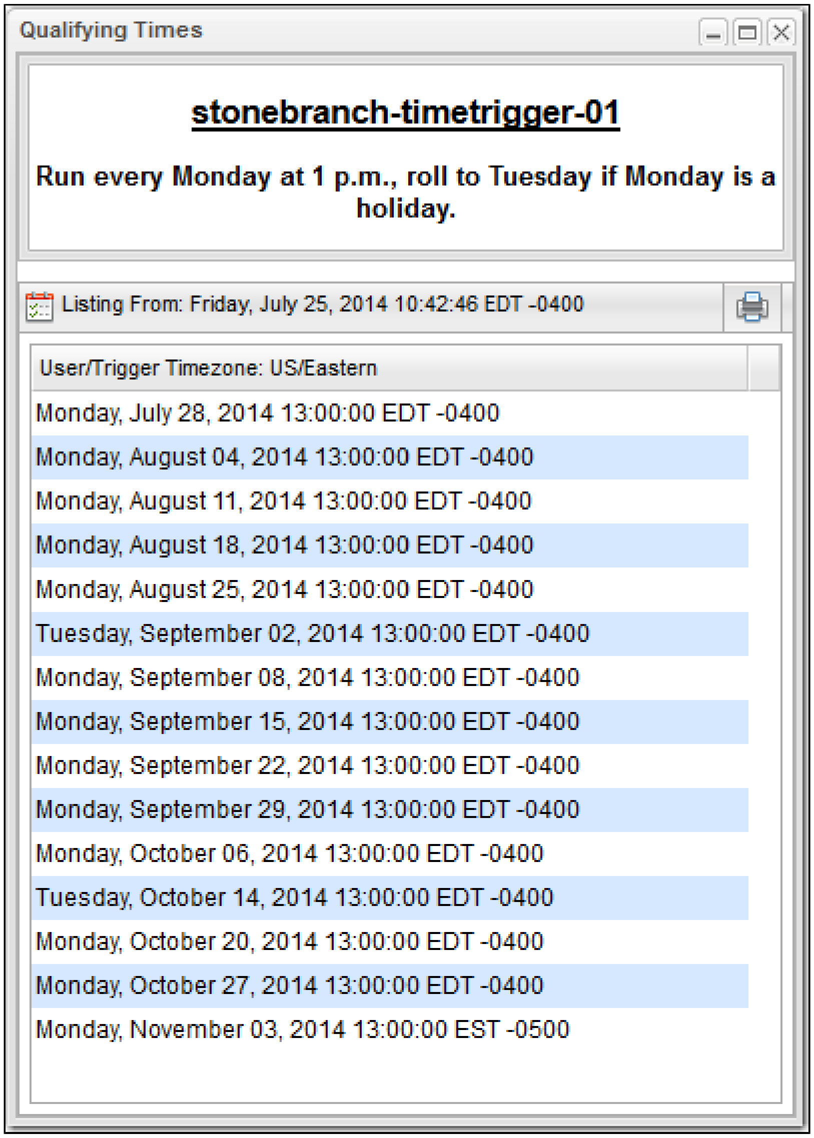
Action : Next Business Day

Simple Restriction : ☑

Complex Restriction : □

Situation : On Holiday

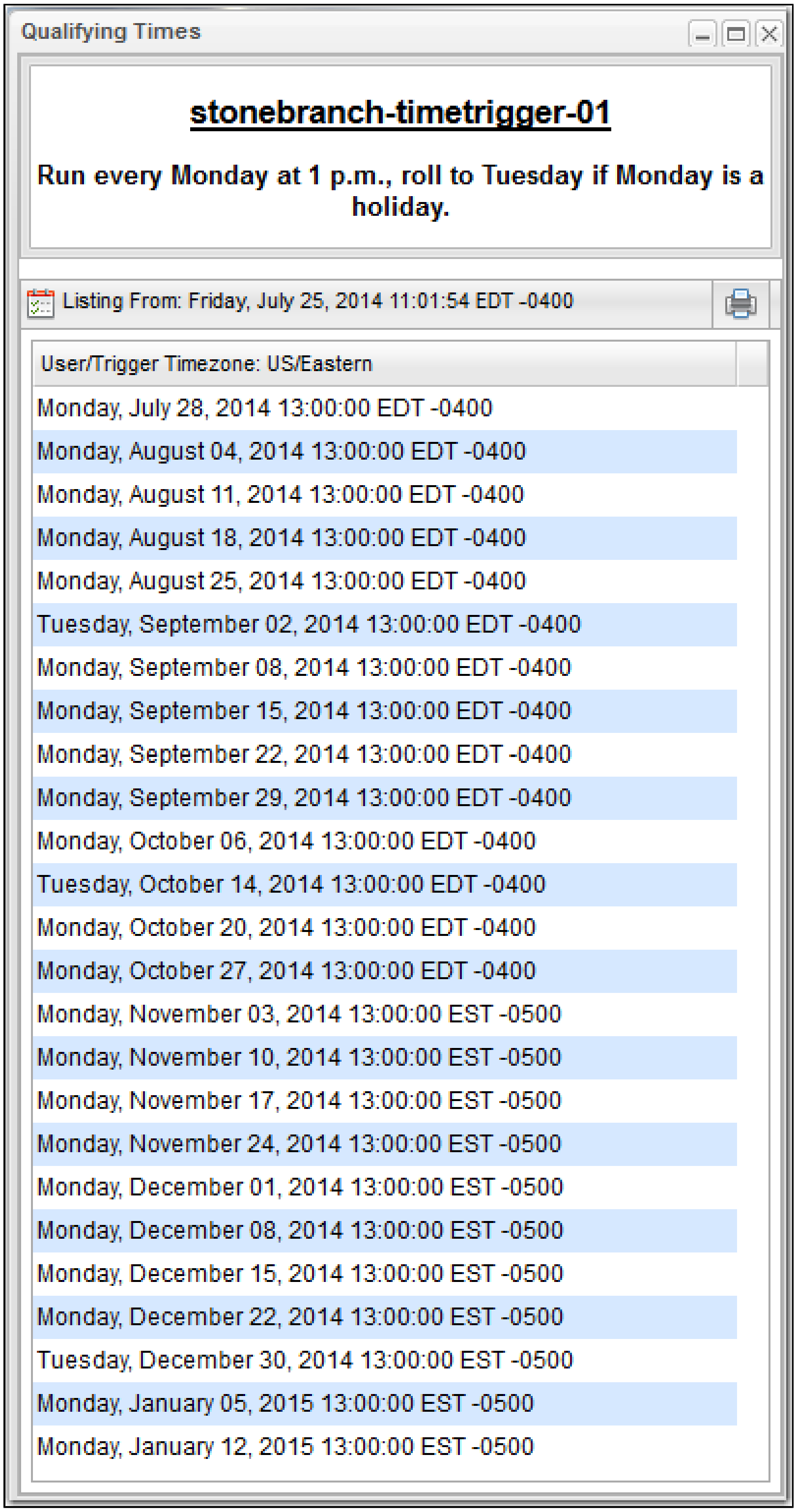
Step 13	Click the **List Qualifying Times** button to display the *List Qualifying Times Input pop-up dialog.
Step 14	In the **Number of Dates/Times** field, enter **15**.
Step 15	In the **Start Date** fields, Select **July 25 2014**.

Step 16	Click **Submit** to display a list of **Qualifying Times** when the trigger will launch the task.  Qualifying Times stonebranch-timetrigger-01 Run every Monday at 1 p.m., roll to Tuesday if Monday is a holiday. Listing From: Friday, July 25, 2014 10:42:46 EDT -0400 User/Trigger Timezone: US/Eastern Monday, July 28, 2014 13:00:00 EDT -0400 Monday, August 04, 2014 13:00:00 EDT -0400 Monday, August 11, 2014 13:00:00 EDT -0400 Monday, August 18, 2014 13:00:00 EDT -0400 Monday, August 25, 2014 13:00:00 EDT -0400 Tuesday, September 02, 2014 13:00:00 EDT -0400 Monday, September 08, 2014 13:00:00 EDT -0400 Monday, September 15, 2014 13:00:00 EDT -0400 Monday, September 22, 2014 13:00:00 EDT -0400 Monday, September 29, 2014 13:00:00 EDT -0400 Monday, October 06, 2014 13:00:00 EDT -0400 Tuesday, October 14, 2014 13:00:00 EDT -0400 Monday, October 20, 2014 13:00:00 EDT -0400 Monday, October 27, 2014 13:00:00 EDT -0400 Monday, November 03, 2014 13:00:00 EST -0500 As shown in the list, the task will not run on the two Mondays that you have defined as holidays in the calendar, but instead will run the the following Tuesday.

Adding a Complex Restriction

The following steps show you how to add a complex restriction to the **stonebranch-timetrigger-01** trigger. In this case, you will add a restriction that skips the last Monday of the year and instead triggers the task on the following Tuesday, just as it does for Mondays that are holidays.

Step 1	Enable **Complex Restriction**.
Step 2	In the **Restriction Mode** field, select **Or**.
Step 3	In the **Restriction Adjective** field, select **Last**.
Step 4	In the **Restriction Noun** field, select **Monday**.
Step 5	In the **Restriction Qualifier** field, select **Year**.
Step 6	Click **Update**.

Step 7	Re-open the trigger, click the **List Qualifying Times** button, enter **25** in the **Number of Dates/Times** field, and click **Submit**. The **Qualifying Times** list now shows an additional Monday (the last Monday of the year) on which the task will not be run. 

Qualifying Times

stonebranch-timetrigger-01

Run every Monday at 1 p.m., roll to Tuesday if Monday is a holiday.

Listing From: Friday, July 25, 2014 11:01:54 EDT -0400

User/Trigger Timezone: US/Eastern

Monday, July 28, 2014 13:00:00 EDT -0400
Monday, August 04, 2014 13:00:00 EDT -0400
Monday, August 11, 2014 13:00:00 EDT -0400
Monday, August 18, 2014 13:00:00 EDT -0400
Monday, August 25, 2014 13:00:00 EDT -0400
Tuesday, September 02, 2014 13:00:00 EDT -0400
Monday, September 08, 2014 13:00:00 EDT -0400
Monday, September 15, 2014 13:00:00 EDT -0400
Monday, September 22, 2014 13:00:00 EDT -0400
Monday, September 29, 2014 13:00:00 EDT -0400
Monday, October 06, 2014 13:00:00 EDT -0400
Tuesday, October 14, 2014 13:00:00 EDT -0400
Monday, October 20, 2014 13:00:00 EDT -0400
Monday, October 27, 2014 13:00:00 EDT -0400
Monday, November 03, 2014 13:00:00 EST -0500
Monday, November 10, 2014 13:00:00 EST -0500
Monday, November 17, 2014 13:00:00 EST -0500
Monday, November 24, 2014 13:00:00 EST -0500
Monday, December 01, 2014 13:00:00 EST -0500
Monday, December 08, 2014 13:00:00 EST -0500
Monday, December 15, 2014 13:00:00 EST -0500
Monday, December 22, 2014 13:00:00 EST -0500
Tuesday, December 30, 2014 13:00:00 EST -0500
Monday, January 05, 2015 13:00:00 EST -0500
Monday, January 12, 2015 13:00:00 EST -0500

For additional information, see:

- Triggers
- Time Trigger
- Calendars
- Displaying Trigger Forecast Information

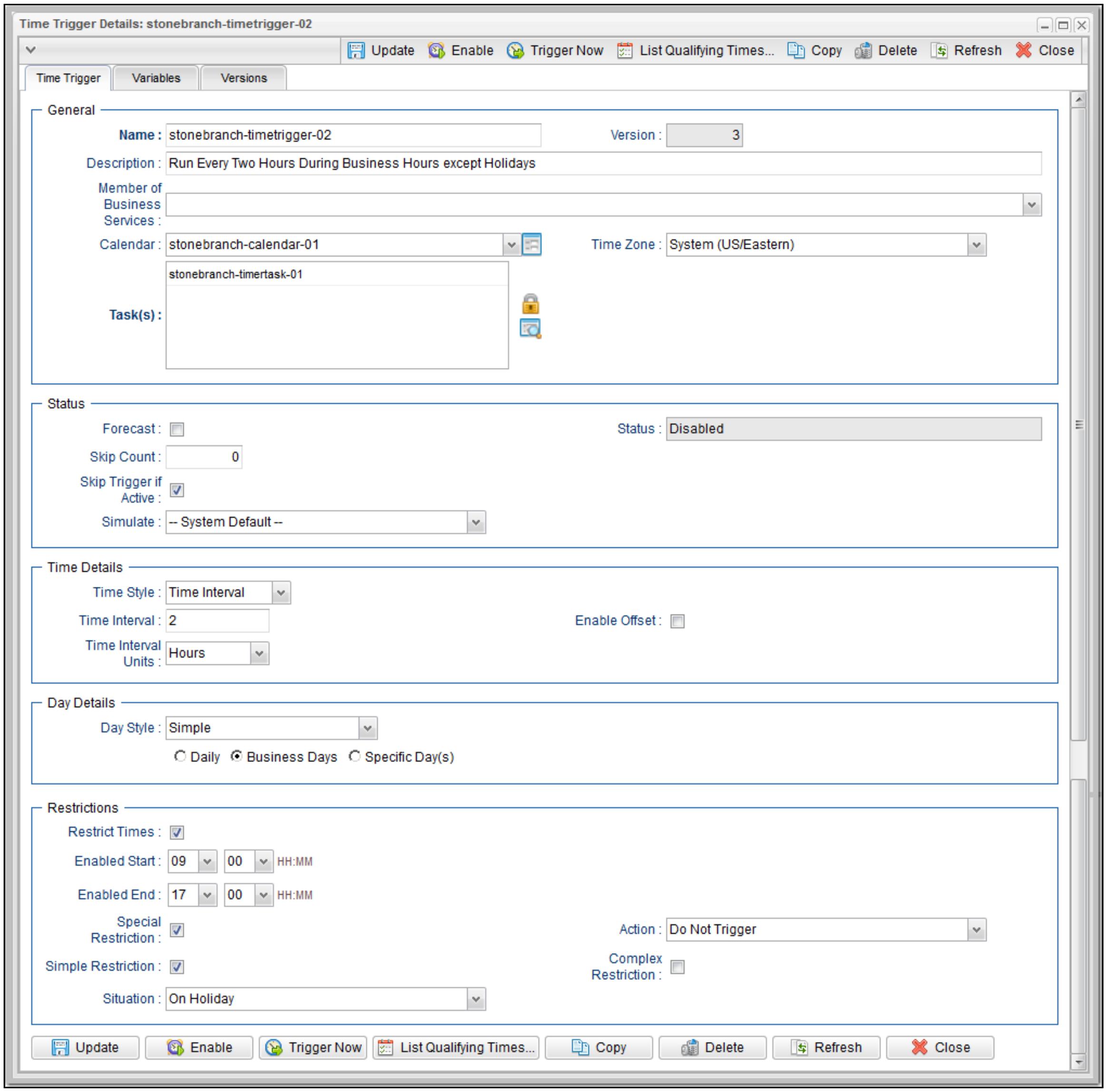
Tutorial - Launching a Task Every Two Hours During Workday

In this exercise, we will define a recurring task that runs every two hours, limited to business hours – Monday through Friday from 9 a.m. to 5 p.m. We will also instruct Opswise Controller not to run the task on holidays.

Also, if the task is still running two hours later when it is time to run the next task instance, the Controller will be instructed not to run the next instance.

Step 1	From the Automation Center navigation pane, select **Triggers > Time Triggers**. The Triggers list displays.
Step 2	Click the **New** button to display an empty Time Trigger Details.
Step 3	In the **Name** field, enter **stonebranch-timetrigger-02**.
Step 4	In the **Description** field, enter **Run Every Two Hours During Business Hours Except Holidays**.
Step 5	In the **Calendar** field, select **stonebranch-calendar-01** (created in the Launching a Task Every Monday Except Holidays tutorial).
Step 6	In the **Task(s)** field, select **stonebranch-timertask-01** (created in the Creating and Manually Launching a Simple Task tutorial).
Step 7	Enable the **Skip Trigger if Active** field. This tells the Controller not to trigger the task if the previous instance of the task is still active.
Step 8	In the **Time Style** field, select **Time Interval** and specify the following: • **Time Interval** = 2 • **Time Interval Units** = Hours
Step 9	Enable the **Restrict Times** field and specify the following: • **Enabled Start** = 09:00 • **Enabled End** = 17:00
Step 10	Specify that this trigger should run on weekdays only by selecting either: • Day Style = Simple • Business Days = Enabled OR • Day Style = Complex • Date Adjective = Every • Date Noun = Business Day • Date Qualifier = Year Both methods use the Business Days specified in **stonebranch-calendar-01**.
Step 11	Enable the **Special Restriction** field and specify the following: • **Situation** = On Holiday • **Action** = Do Not Trigger

Step 12 Click the **Save** button.



General

Name :	stonebranch-timetrigger-02	Version :	3
Description :	Run Every Two Hours During Business Hours except Holidays		
Member of Business Services :			
Calendar :	stonebranch-calendar-01	Time Zone :	System (US/Eastern)
Task(s) :	stonebranch-timertask-01		

Status

Forecast :	□	Status :	Disabled
Skip Count :	0		
Skip Trigger if Active :	☑		
Simulate :	-- System Default --		

Time Details

Time Style :	Time Interval		
Time Interval :	2	Enable Offset :	□
Time Interval Units :	Hours		

Day Details

Day Style : Simple

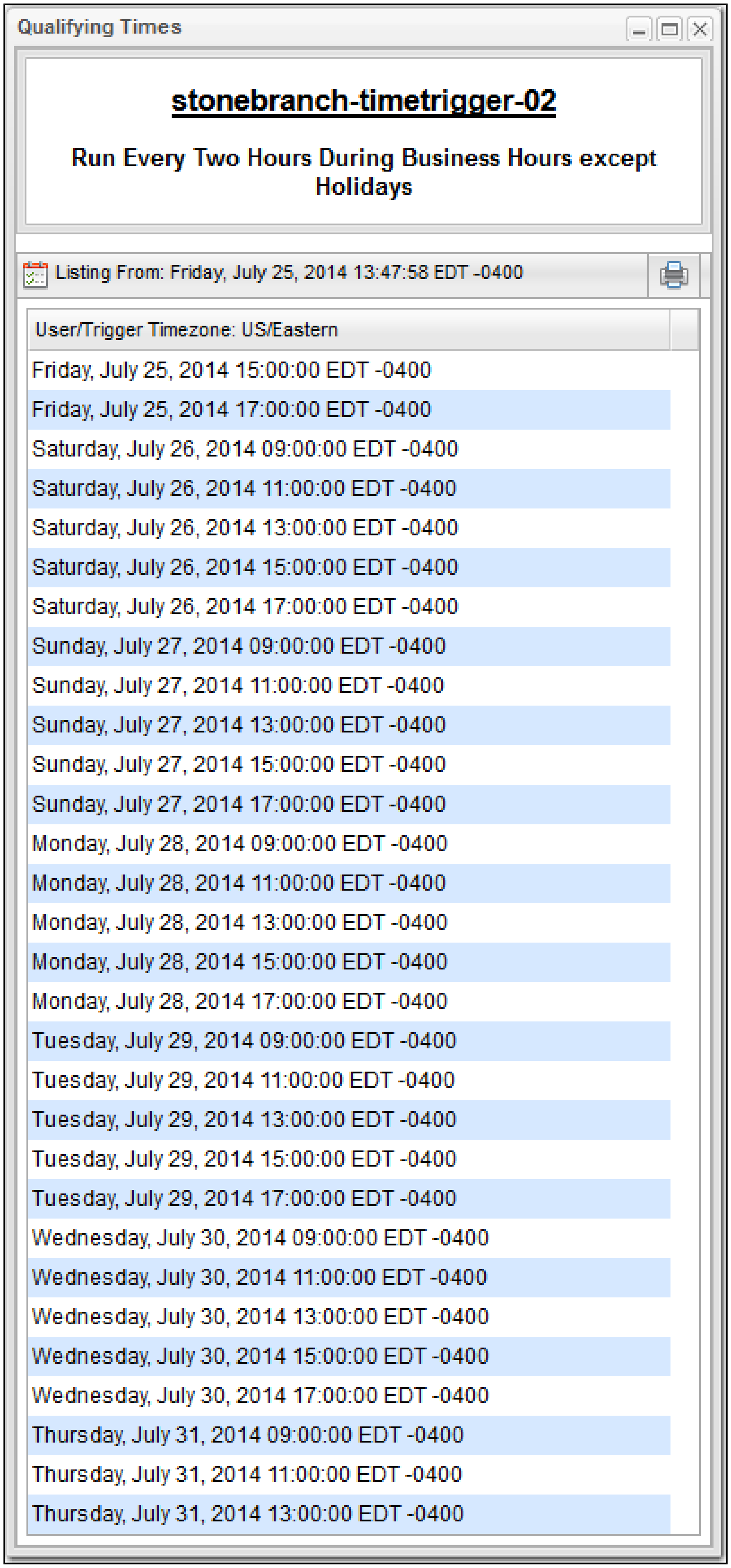
○ Daily ● Business Days ○ Specific Day(s)

Restrictions

Restrict Times :	☑		
Enabled Start :	09 00 HH:MM		
Enabled End :	17 00 HH:MM		
Special Restriction :	☑	Action :	Do Not Trigger
Simple Restriction :	☑	Complex Restriction :	□
Situation :	On Holiday		

Step 13

Re-open **stonebranch-timetrigger-02** and click the **List Qualifying Times** button. The **Qualifying Times** list displays the next scheduled 30 (by default) times when **stonebranch-timetrigger-02** will launch **stonebranch-timertask-01**.



stonebranch-timetrigger-02

Run Every Two Hours During Business Hours except Holidays

Listing From: Friday, July 25, 2014 13:47:58 EDT -0400

User/Trigger Timezone: US/Eastern

Friday, July 25, 2014 15:00:00 EDT -0400
Friday, July 25, 2014 17:00:00 EDT -0400
Saturday, July 26, 2014 09:00:00 EDT -0400
Saturday, July 26, 2014 11:00:00 EDT -0400
Saturday, July 26, 2014 13:00:00 EDT -0400
Saturday, July 26, 2014 15:00:00 EDT -0400
Saturday, July 26, 2014 17:00:00 EDT -0400
Sunday, July 27, 2014 09:00:00 EDT -0400
Sunday, July 27, 2014 11:00:00 EDT -0400
Sunday, July 27, 2014 13:00:00 EDT -0400
Sunday, July 27, 2014 15:00:00 EDT -0400
Sunday, July 27, 2014 17:00:00 EDT -0400
Monday, July 28, 2014 09:00:00 EDT -0400
Monday, July 28, 2014 11:00:00 EDT -0400
Monday, July 28, 2014 13:00:00 EDT -0400
Monday, July 28, 2014 15:00:00 EDT -0400
Monday, July 28, 2014 17:00:00 EDT -0400
Tuesday, July 29, 2014 09:00:00 EDT -0400
Tuesday, July 29, 2014 11:00:00 EDT -0400
Tuesday, July 29, 2014 13:00:00 EDT -0400
Tuesday, July 29, 2014 15:00:00 EDT -0400
Tuesday, July 29, 2014 17:00:00 EDT -0400
Wednesday, July 30, 2014 09:00:00 EDT -0400
Wednesday, July 30, 2014 11:00:00 EDT -0400
Wednesday, July 30, 2014 13:00:00 EDT -0400
Wednesday, July 30, 2014 15:00:00 EDT -0400
Wednesday, July 30, 2014 17:00:00 EDT -0400
Thursday, July 31, 2014 09:00:00 EDT -0400
Thursday, July 31, 2014 11:00:00 EDT -0400
Thursday, July 31, 2014 13:00:00 EDT -0400

For additional information, see:

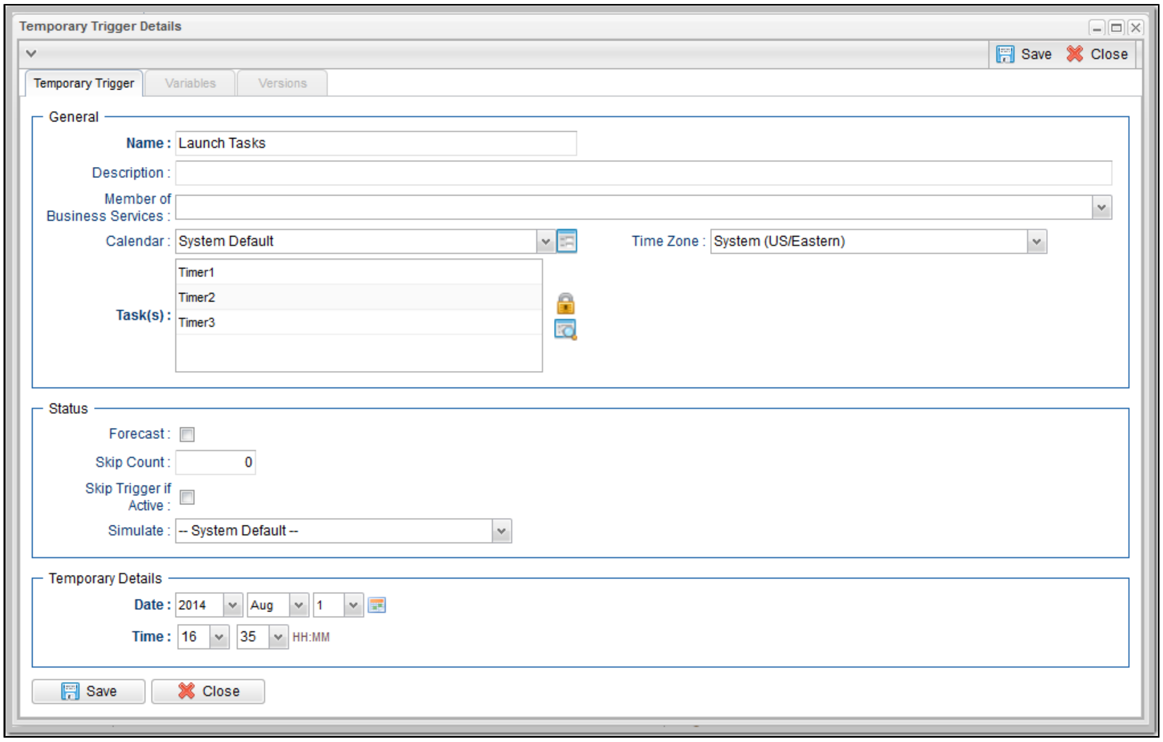
- Triggers
- Time Trigger
- Calendars

Tutorial - Launching Tasks at a Future Time

In this exercise, we will create a trigger that will launch multiple tasks at the same time in the future (in two minutes). For this exercise, we will use the SQL tasks created in the Running a Workflow with a Conditional Path tutorial.

(A future date also can be selected, but to see now that the tasks have been launched, keep the current date.)

Create a Temporary Trigger

Step 1	From the Automation Center navigation pane, select **Triggers > Temporary Triggers**. The Temporary Triggers list displays.
Step 2	Click the **New** button to display Temporary Trigger Details for a new trigger and enter/select the following values: - **Name** = Launch Tasks - **Tasks** = Timer1, Timer2, and Timer3 Timer tasks - **Date** = current date - **Time** = 5 minutes from the current time - **Time Zone** = your time zone
Step 3	Click the **Save** button.  Temporary Trigger Details Save Close Temporary Trigger Variables Versions General Name : Launch Tasks Description : Member of Business Services : Calendar : System Default Time Zone : System (US/Eastern) Task(s) : Timer1, Timer2, Timer3 Status Forecast : □ Skip Count : 0 Skip Trigger if Active : □ Simulate : -- System Default -- Temporary Details Date : 2014 Aug 1 Time : 16 35 HH:MM
Step 4	Right-click **Launch Tasks** on the Temporary Triggers list and click **Enable**.
Step 5	Open the Activity Monitor to see that Timer1, Timer2, and Timer 3 are run at the selected time.

For additional information, see:

- Temporary Trigger

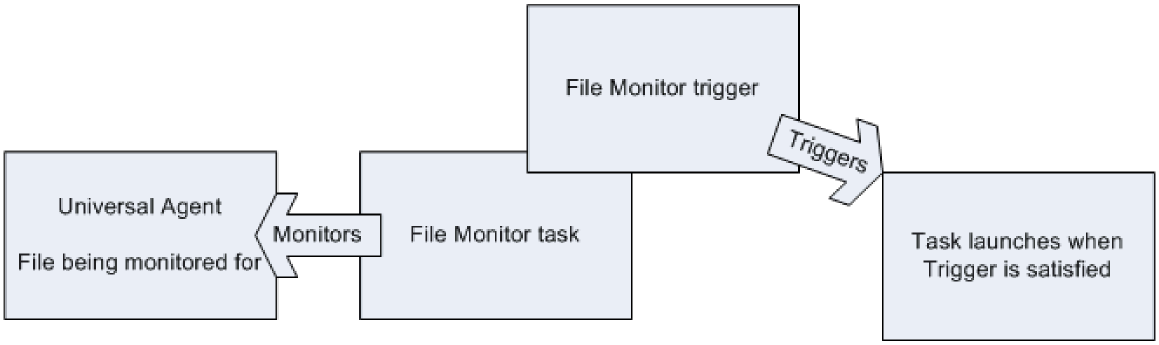
Tutorial - Launching an Email Task Based on a File Monitor

Introduction

In this exercise, we will monitor a machine for a specific file. When the file appears, we will send an email that uses variables to supply information about when and how the email was sent.

In order to set this up, we need the following:

- Opswise Universal Agent
- File Monitor task
- File Monitor trigger
- Email task being launched by the trigger.



Prerequisites:

- In order to perform this exercise, you need a Windows, Linux/Unix, or z/OS Agent running on the machine that is being monitored for the file. Create a directory on the machine called **`opswise tutorial`**. Later on, you will copy a text file to this directory to satisfy the File Monitor trigger.

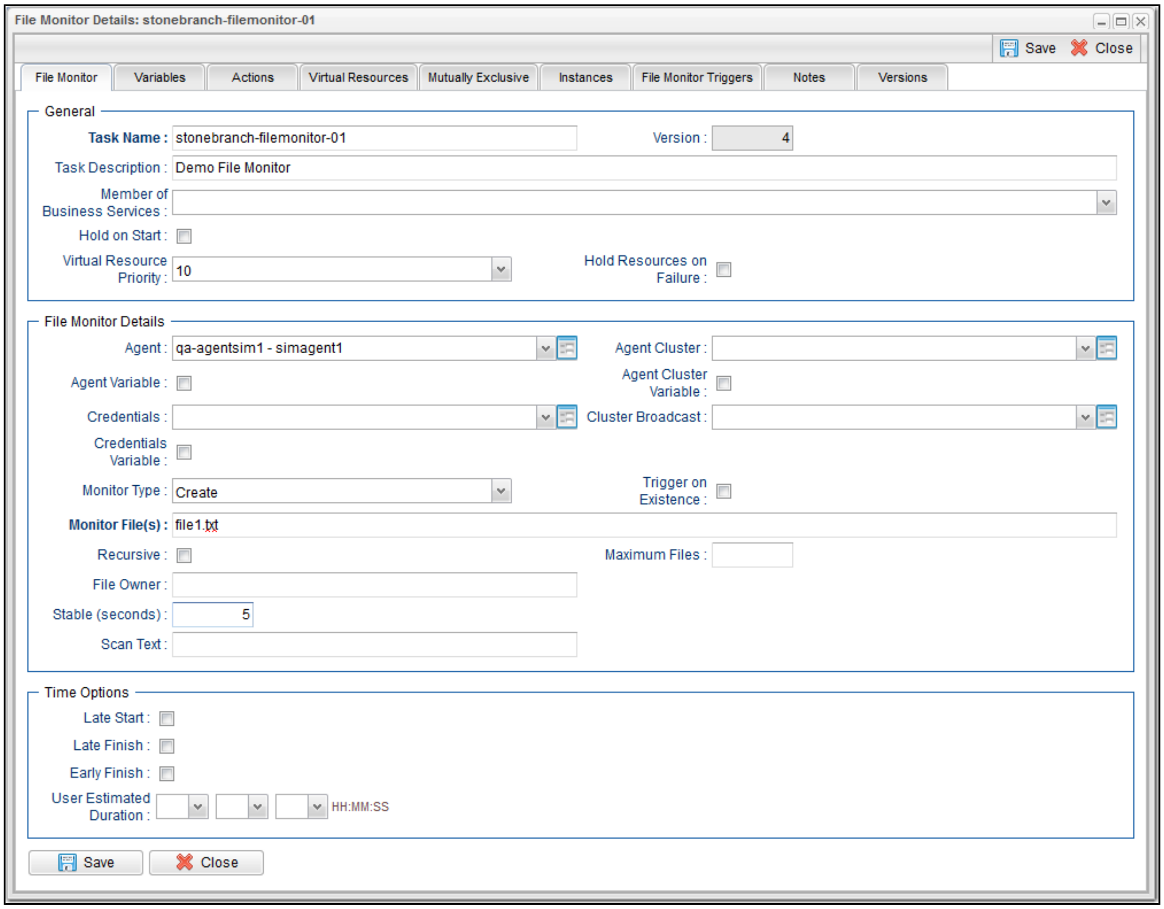
> ⚠ **Note**
> If you do not have a running Agent, you can bypass this step by manually satisfying the trigger, as per instructions in the tutorial. However, you do need an Agent defined in the database.

- Since we are going to generate an email when the trigger is satisfied, you will need an Email Connection defined.

Create File Monitor Task

The File Monitor task monitors the agent machine for the specified file.

Step 1	From the Automation Center navigation pane, select **Tasks > File Monitors**. The File Monitors list displays.
Step 2	Click the **New** button to display an empty File Monitor Details.
Step 3	In the **Task Name** field, enter **stonebranch-filemonitor-01**.
Step 4	In the **Task Description** field, enter **Demo File Monitor**.
Step 5	In the **Agent** field, select an Agent.

Step 6	In the **Monitor Type** field, keep the default value, **Create**. (See File Monitor Task Details Field Descriptions for details about the other file monitor options.)
Step 7	In the **Monitor File** field, type **file1.txt**. Since we have not specified any directory, the Controller will search the root directory.
Step 8	Enable the **Recursive** field. Since we are going to write our file to the **`opswise tutorial`** directory, we want the Controller to search all sub-directories for the file.
Step 9	In the **Stable (seconds)** field, enter **5**. This tells the Controller to satisfy the trigger only when the file has not changed in 5 seconds.  File Monitor Details: stonebranch-filemonitor-01 Save Close File Monitor Variables Actions Virtual Resources Mutually Exclusive Instances File Monitor Triggers Notes Versions General Task Name : stonebranch-filemonitor-01 Version : 4 Task Description : Demo File Monitor Member of Business Services : Hold on Start : □ Virtual Resource Priority : 10 Hold Resources on Failure : □ File Monitor Details Agent : qa-agentsim1 - simagent1 Agent Cluster : Agent Variable : □ Agent Cluster Variable : □ Credentials : Cluster Broadcast : Credentials Variable : □ Monitor Type : Create Trigger on Existence : □ Monitor File(s) : file1.txt Recursive : □ Maximum Files : File Owner : Stable (seconds) : 5 Scan Text : Time Options Late Start : □ Late Finish : □ Early Finish : □ User Estimated Duration : HH:MM:SS
Step 10	Click **Save**.

Create an Email Task

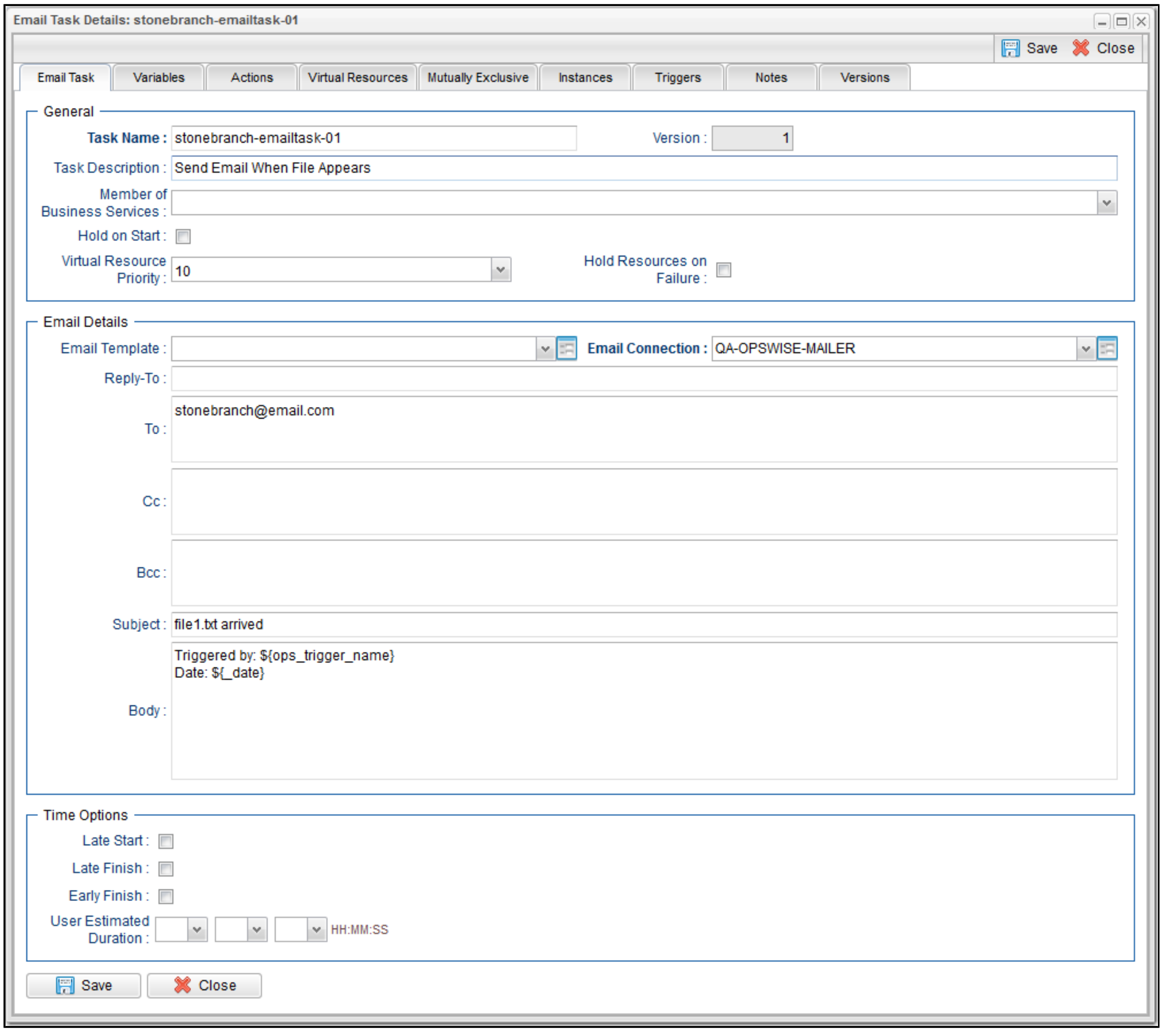
Create the task that will run when the File Monitor is satisfied. In this case, we will **generate an email, using the Email task:**

Step 1	From the **Automation Center** navigation pane, select **Tasks > Email Tasks**. The Email Tasks list displays.
Step 2	Click the **New** button to display an empty Email task Details.
Step 3	In the **Task Name** field, enter **stonebranch-emailtask-01**.
Step 4	In the **Description** field, enter **Send Email When File Appears**.
Step 5	In the **Email Connection** field, select your Email Connection.
Step 6	In the **To** field, enter in your email address. This is where the email will be sent.
Step 7	In the **Subject** field, enter **file1.txt arrived**.

Step 8 In the body field, enter the following Opswise Controller variable and Opswise Controller function:

```
Triggered by: ${ops_trigger_name}
Date: ${_date}
```

Step 9 When the email is generated, the variables will be substituted with the name of the trigger that launched the Email task, along with the date and time the task was launched.



Email Task Details: stonebranch-emailtask-01

General

Task Name : stonebranch-emailtask-01

Version : 1

Task Description : Send Email When File Appears

Member of Business Services :

Hold on Start : □

Virtual Resource Priority : 10

Hold Resources on Failure : □

Email Details

Email Template :

Email Connection : QA-OPSWISE-MAILER

Reply-To :

To : stonebranch@email.com

Cc :

Bcc :

Subject : file1.txt arrived

Body :
Triggered by: ${ops_trigger_name}
Date: ${_date}

Time Options

Late Start : □

Late Finish : □

Early Finish : □

User Estimated Duration : HH:MM:SS

Step 9 Click the **Save** button.

Create File Monitor Trigger

Create the File Monitor trigger:

Step 1 From the Automation Center* navigation pane, select **Triggers > File Triggers**. The File Monitor Triggers list displays.

Step 2 Click the **New** button to display an empty File Monitor Trigger Details.

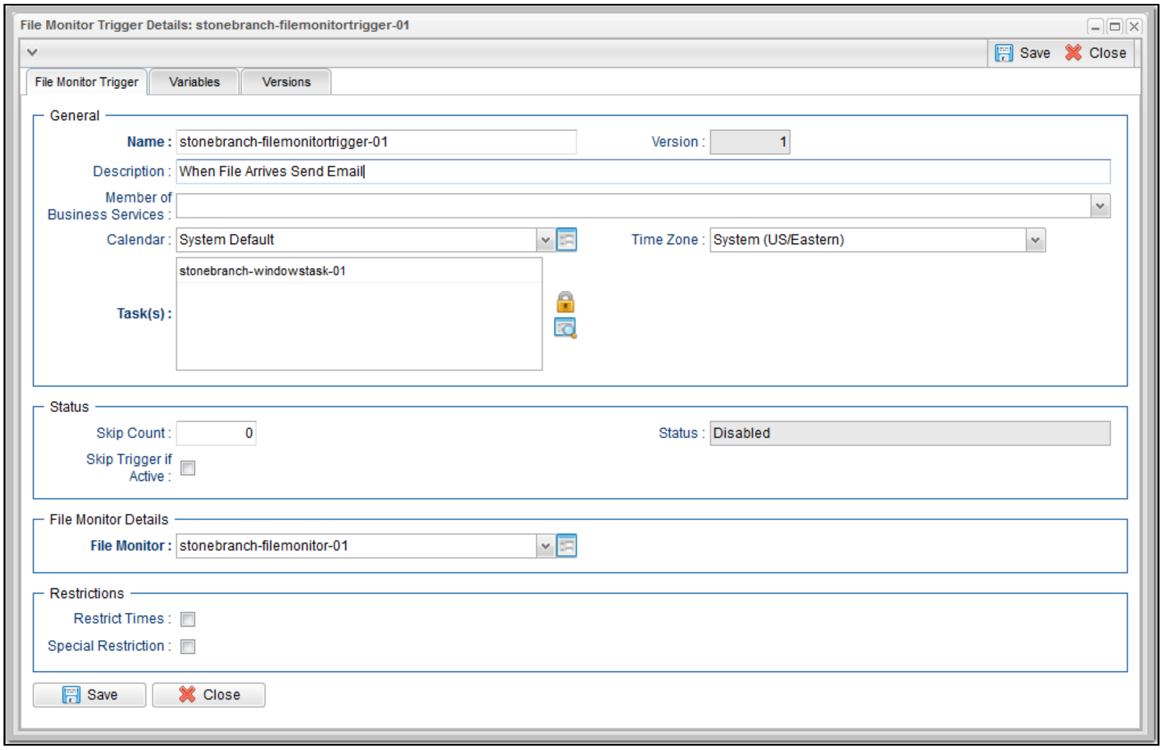
Step 3 In the Trigger Name field, enter **stonebranch-filemonitortrigger-01**.

Step 4 In the **Description** field, enter **When File Arrives Send Email**.

Step 5 In the **Task(s)** field, select **stonebranch-emailtask-01**.)

Step 6 In the **File Monitor** field, select **stonebranch-filemonitor-01**.

Step 7	Click the **Save** button.


File Monitor Trigger Details: stonebranch-filemonitortrigger-01

General

Name : stonebranch-filemonitortrigger-01
Version : 1
Description : When File Arrives Send Email
Member of Business Services :
Calendar : System Default
Time Zone : System (US/Eastern)
Task(s) : stonebranch-windowstask-01

Status

Skip Count : 0
Status : Disabled
Skip Trigger if Active : □

File Monitor Details

File Monitor : stonebranch-filemonitor-01

Restrictions

Restrict Times : □
Special Restriction : □

Test Your File Monitor Set-up

Test your File Monitor set-up.

Step 1	Enable the File Monitor trigger. This launches the File Monitor task. It will appear in the Activity Monitor with a status of Running.
Step 2	Do one of the following: • If you have a running agent, place a text file called **`file1.txt`** in the **`opswise tutorial`** directory on the machine that is being monitored by the File Monitor task. When the file appears, the File Monitor task waits five seconds, as specified, and then satisfies the trigger. • If you do not have a running agent but do have an agent connected to your instance, you can manually satisfy the trigger as follows: 1. From the **Automation Center** navigation pane, select **Triggers > File Triggers** to display the File Monitor Triggers list. 2. Right-click the **stonebranch-file monitortrigger-01** trigger and select **Trigger Now**.
Step 3	When the trigger is satisfied, the Email is sent. Go to the Activity Monitor and note that the **astonebranch-emailtask-01** Email task has been launched.
Step 4	Go to your email account where the email was sent and open the email. Note that the variables were resolved.

For additional information, see:

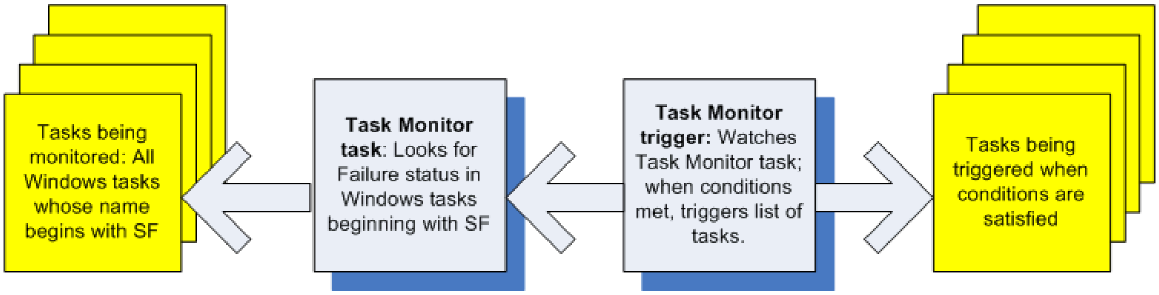
- Email Task
- File Monitor Task
- File Trigger
- Variables

Tutorial - Launching an Email Task Based on a Task Monitor

Introduction

In this exercise, we will set up a Task Monitor and Task Monitor trigger. The Task Monitor will monitor all tasks for a status that indicates some sort of problem. When the trigger is satisfied, Opswise Controller will launch an Email task that notifies a user that there is a problem. We will also create an Email template for use in our Email task and create an Activity Monitor filter that displays only problem tasks.

The following illustration shows the various components used to trigger tasks based on the status of other tasks.



Tasks being monitored: All Windows tasks whose name begins with SF

Task Monitor task: Looks for Failure status in Windows tasks beginning with SF

Task Monitor trigger: Watches Task Monitor task; when conditions met, triggers list of tasks.

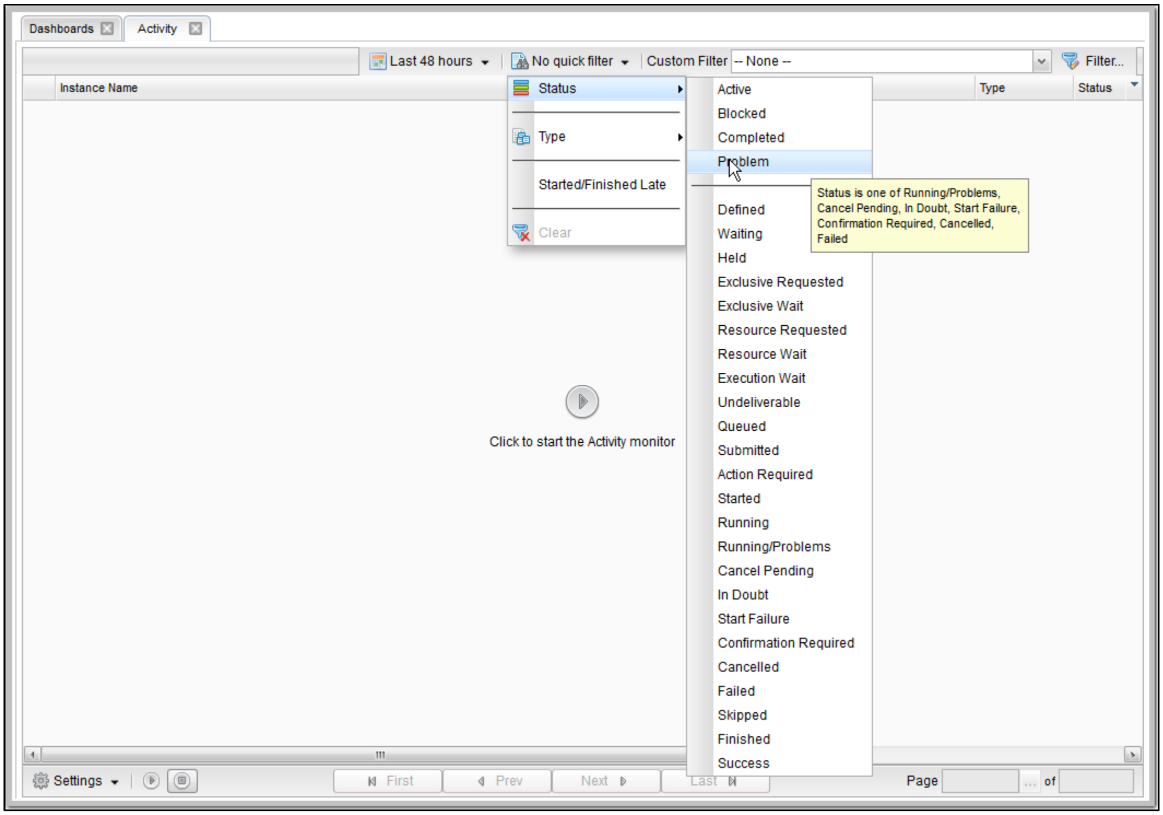
Tasks being triggered when conditions are satisfied

Select the Activity Monitor Problem Filter

The first task we will do is select the Problem filter for the Activity Monitor. When the user receives an email indicating there is a problem, the user can view this Activity Monitor to find out more information.

Step 1	From the Automation Center navigation pane, select **Task Instances > Activity**. The Activity Monitor displays.
Step 2	Click the **Click to start the Activity monitor** button. All active task instances display.

Step 3 From the Quick Filter drop-down list, select **Status > Problem**.



Status is one of Running/Problems, Cancel Pending, In Doubt, Start Failure, Confirmation Required, Cancelled, Failed

The Activity Monitor now will display only Problem task instances.

Create an Email Template

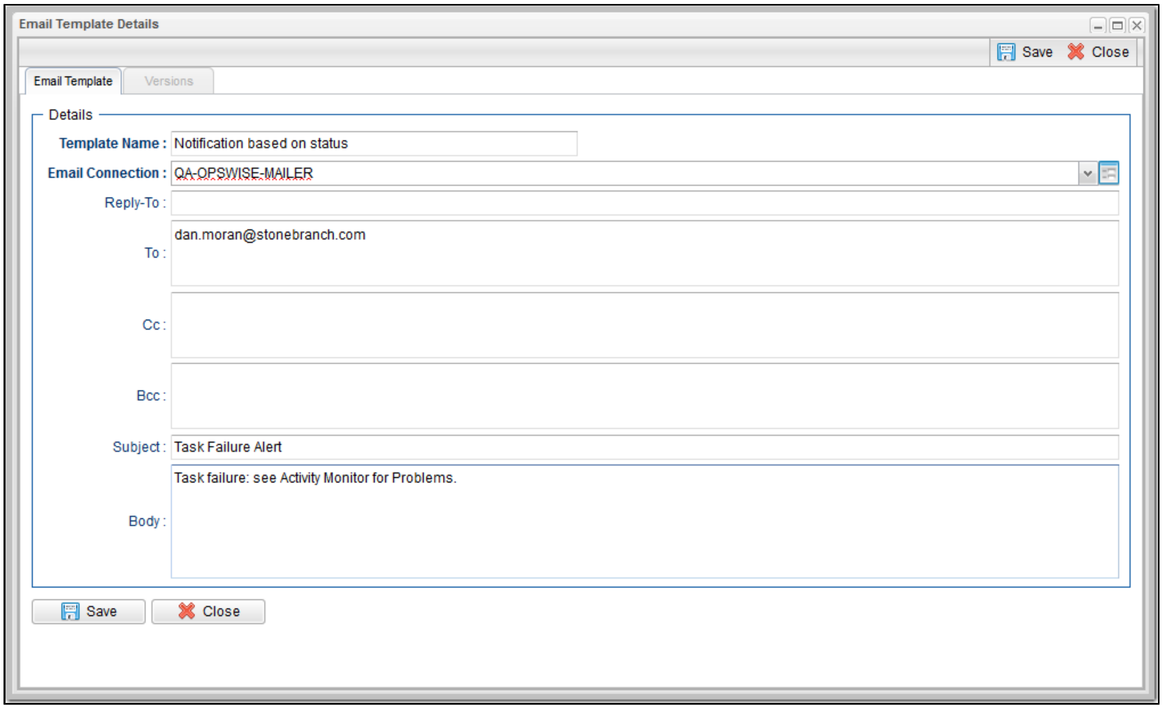
Email Templates allow you to create pre-defined Email task information that you refer to when creating an Email task. This is useful if you have a large number of common parameters on Email tasks but still require separate tasks.

Step 1 From the Agents & Connections navigation pane, select **System > Email Templates**. The Email Templates list displays.

Step 2 Click the **New** button to display an empty Email Template Details and enter the following values:

- **Template Name** = Notification based on status
- **Email Connection** = (a valid email connection)
- **To** = (a valid email account)
- **Subject** = Task Failure Alert
- **Body** = Task failure, see Activity Monitor for Problems

Step 3 Click the **Save** button.



Email Template Details

Details

Template Name : Notification based on status

Email Connection : QA-OPSWISE-MAILER

Reply-To :

To : dan.moran@stonebranch.com

Cc :

Bcc :

Subject : Task Failure Alert

Body : Task failure: see Activity Monitor for Problems.

Creating an Email Task Using the Email Template

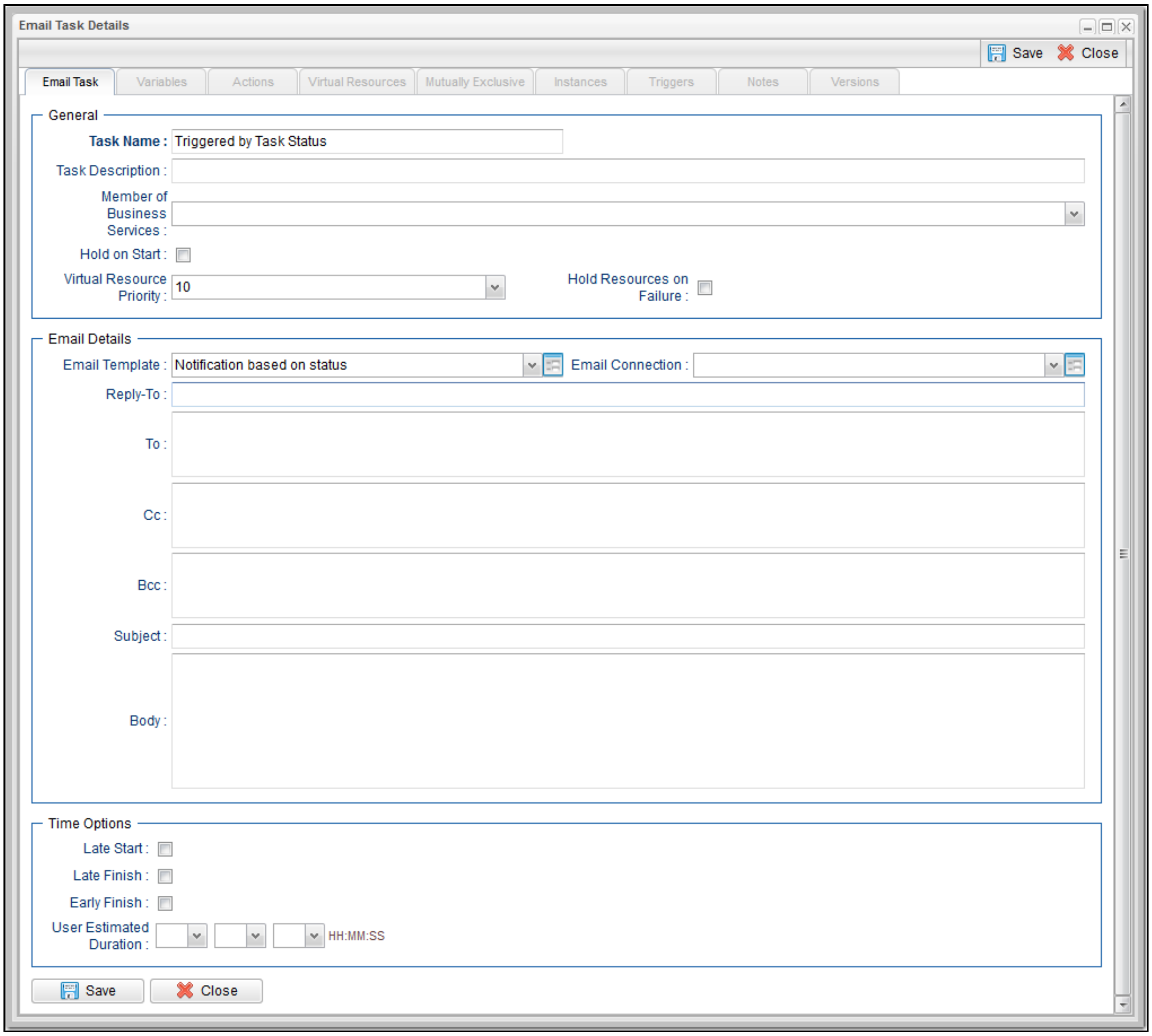
Step 1 From the Automation Center navigation pane, select **Tasks > Email Tasks**. The Email Tasks list displays.

Step 2 Click the **New** button to display an empty Email Task Details and enter the following values:

- **Task Name** = Triggered by Task Status*
- **Email Template** = Notification based on status

  Leave the remaining fields blank, since we want to use the information from the template. (If you fill in any of the duplicate fields, the information from the task overrides the information from the template.)

Step 3 Click the **Save** button.



General

Task Name : Triggered by Task Status

Task Description :

Member of Business Services :

Hold on Start : □

Virtual Resource Priority : 10

Hold Resources on Failure : □

Email Details

Email Template : Notification based on status

Email Connection :

Reply-To :

To :

Cc :

Bcc :

Subject :

Body :

Time Options

Late Start : □

Late Finish : □

Early Finish : □

User Estimated Duration : HH:MM:SS

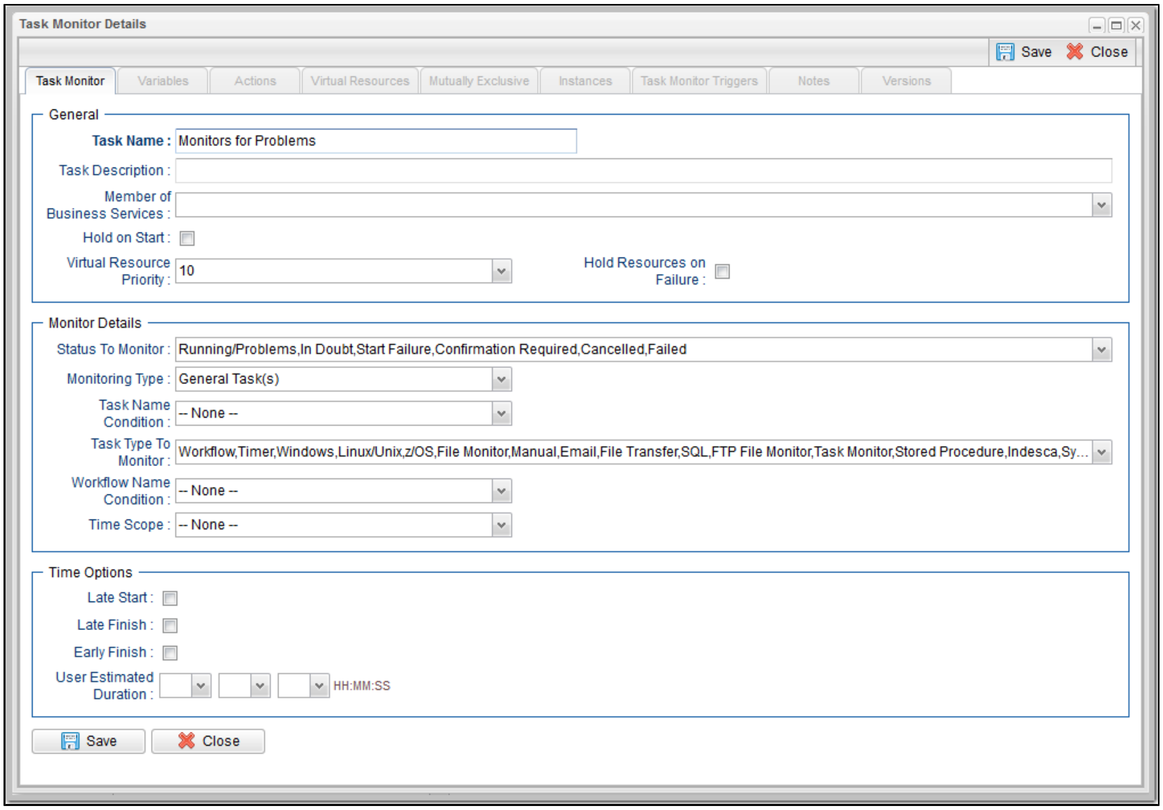
Creating a Task Monitor Task

For this Task Monitor, we will monitor the status of all other tasks. If any task has a status that indicates there is some sort of problem, we will generate an email. Once the Task Monitor is launched by the Task Monitor trigger, it remains active, launching an Email every time any of its conditions are met. The Task Monitor task remains active until the Task Monitor trigger is disabled or until a user manually stops it.

Step 1 From the Automation Center navigation pane, select **Tasks > Task Monitors**. The Task Monitors list displays.

Step 2 Click the **New** button to display an empty Task Monitor Details and enter the following values:

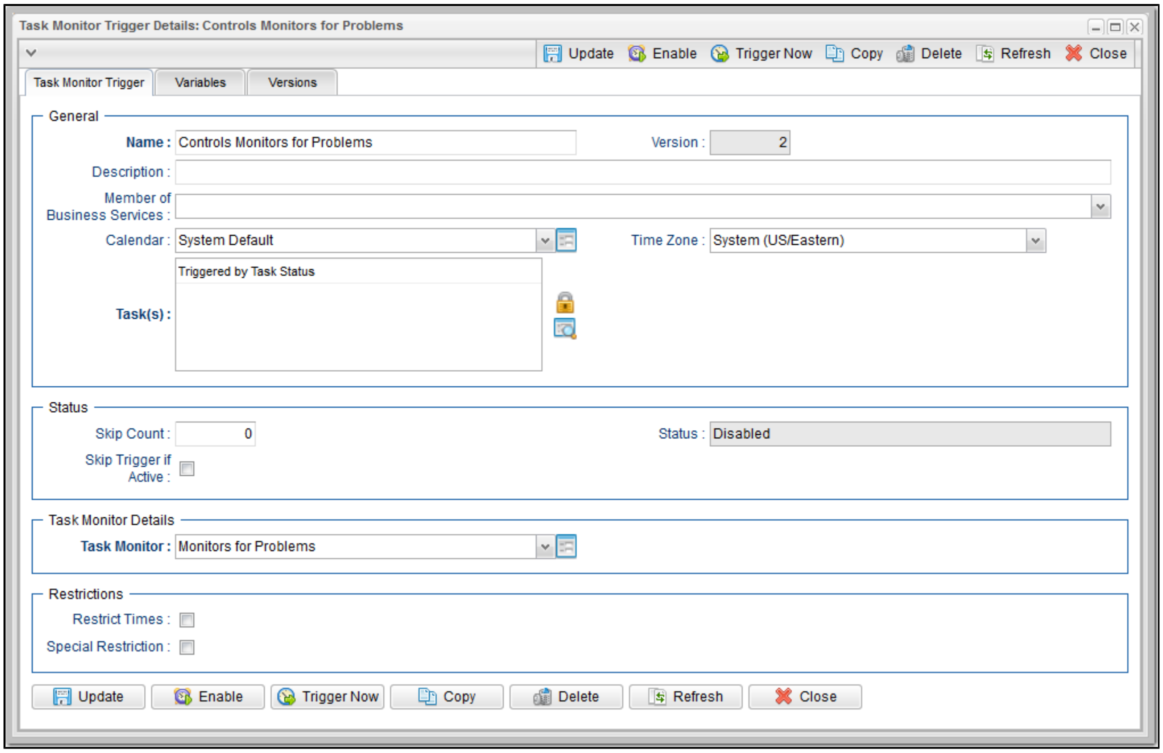
- **Task Name** = Monitors for Problems
- **Status To Monitor** = enable Running/Problems, Cancel Pending, In Doubt, Start Failure, Confirmation Required, Cancelled, and Failed. (For a description of each status, see Displaying Task Instance Status).
- **Monitoring Type** = General Task(s)
- **Task Type To Monitor** = enable all task types (default)

Step 3	Click the **Save** button.  Task Monitor Details General **Task Name :** Monitors for Problems Task Description : Member of Business Services : Hold on Start : □ Virtual Resource Priority : 10 Hold Resources on Failure : □ Monitor Details Status To Monitor : Running/Problems,In Doubt,Start Failure,Confirmation Required,Cancelled,Failed Monitoring Type : General Task(s) Task Name Condition : -- None -- Task Type To Monitor : Workflow,Timer,Windows,Linux/Unix,z/OS,File Monitor,Manual,Email,File Transfer,SQL,FTP File Monitor,Task Monitor,Stored Procedure,Indesca,Sy... Workflow Name Condition : -- None -- Time Scope : -- None -- Time Options Late Start : □ Late Finish : □ Early Finish : □ User Estimated Duration : HH:MM:SS

Creating a Task Monitor Trigger

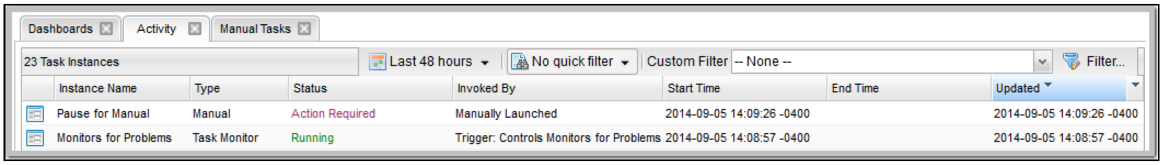
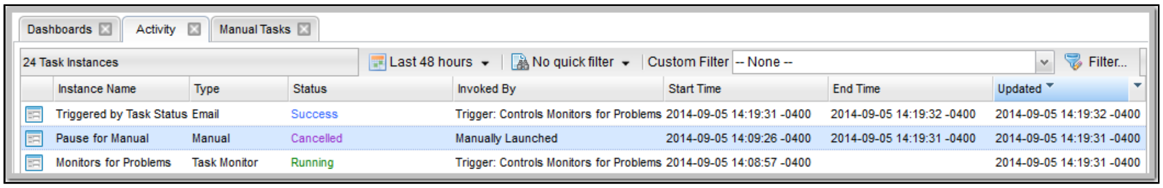
As the last step in our set-up process, we will create the Task Monitor trigger, which controls when the Task Monitor task is started and stopped.

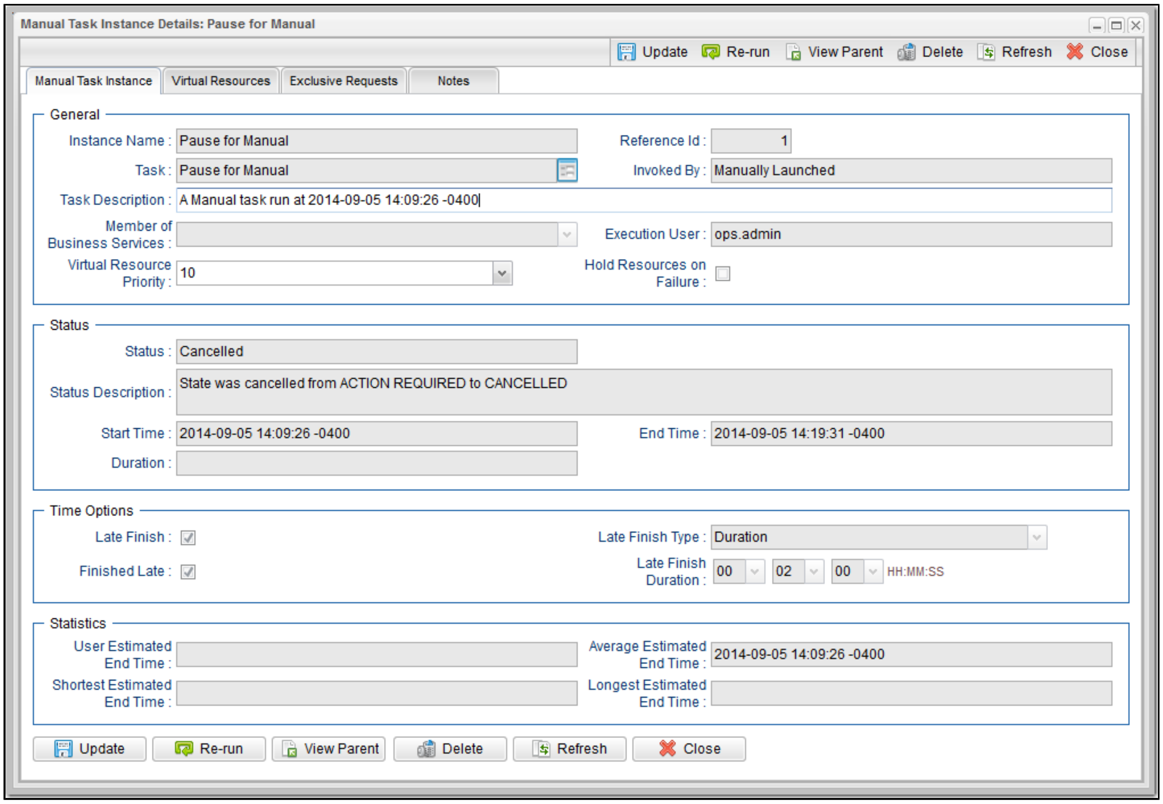
Step 1	From the Automation Center navigation pane, select **Triggers > Task Monitor Triggers**. The Task Monitor Triggers list displays.
Step 2	Click the **New** button to display an empty Task Monitor Trigger Details and enter the following values: • **Name** = Controls Monitors for Problems • **Task(s)** = Triggered by Task Status • **Task Monitor** = Monitors for Problems

Step 3	Click the **Save** button.  Task Monitor Trigger Details: Controls Monitors for Problems Update · Enable · Trigger Now · Copy · Delete · Refresh · Close Task Monitor Trigger · Variables · Versions General Name : Controls Monitors for Problems · Version : 2 Description : Member of Business Services : Calendar : System Default · Time Zone : System (US/Eastern) Task(s) : Triggered by Task Status Status Skip Count : 0 · Status : Disabled Skip Trigger if Active : □ Task Monitor Details Task Monitor : Monitors for Problems Restrictions Restrict Times : □ Special Restriction : □ Update · Enable · Trigger Now · Copy · Delete · Refresh · Close
Step 4	On the Task Monitor Triggers list, right-click **Controls Monitors for Problems** and then click **Enable**.

Running the Task Monitor

To test our set-up, we need to run a task to one of the failure statuses that will trigger the email. To do so, we will launch the **Pause for Manual** Manual task created in the Running a Workflow with a Conditional Path tutorial and force it into Failed status.

Step 1	From the Automation Center navigation pane, select **Tasks > Manual Tasks**. The Manual Tasks list displays.
Step 2	Right-click the **Pause for Manual** task and, on the Action menu, select **Launch Task**.
Step 3	Display the Activity Monitor. It will list the **Pause for Manual** task instance, in **Action Required** status, and the **Monitors for Problems** Task Monitor task, which was launched when enabled the **Controls Monitor for Problems** triggered  Dashboards · Activity · Manual Tasks 23 Task Instances · Last 48 hours · No quick filter · Custom Filter -- None -- · Filter... Instance Name | Type | Status | Invoked By | Start Time | End Time | Updated Pause for Manual | Manual | Action Required | Manually Launched | 2014-09-05 14:09:26 -0400 | | 2014-09-05 14:09:26 -0400 Monitors for Problems | Task Monitor | Running | Trigger: Controls Monitors for Problems | 2014-09-05 14:08:57 -0400 | | 2014-09-05 14:08:57 -0400
Step 4	Right-click on **Pause for Manual** to display an Action menu of actions currently available for this task instance.
Step 5	Click **Cancel**. **Pause for Manual** goes to **Cancelled** status and an Email task is launched by the Task Monitor trigger.  Dashboards · Activity · Manual Tasks 24 Task Instances · Last 48 hours · No quick filter · Custom Filter -- None -- · Filter... Instance Name | Type | Status | Invoked By | Start Time | End Time | Updated Triggered by Task Status | Email | Success | Trigger: Controls Monitors for Problems | 2014-09-05 14:19:31 -0400 | 2014-09-05 14:19:32 -0400 | 2014-09-05 14:19:32 -0400 Pause for Manual | Manual | Cancelled | Manually Launched | 2014-09-05 14:09:26 -0400 | 2014-09-05 14:19:31 -0400 | 2014-09-05 14:19:31 -0400 Monitors for Problems | Task Monitor | Running | Trigger: Controls Monitors for Problems | 2014-09-05 14:08:57 -0400 | | 2014-09-05 14:19:31 -0400
Step 8	Check the Email account where you sent the notification.

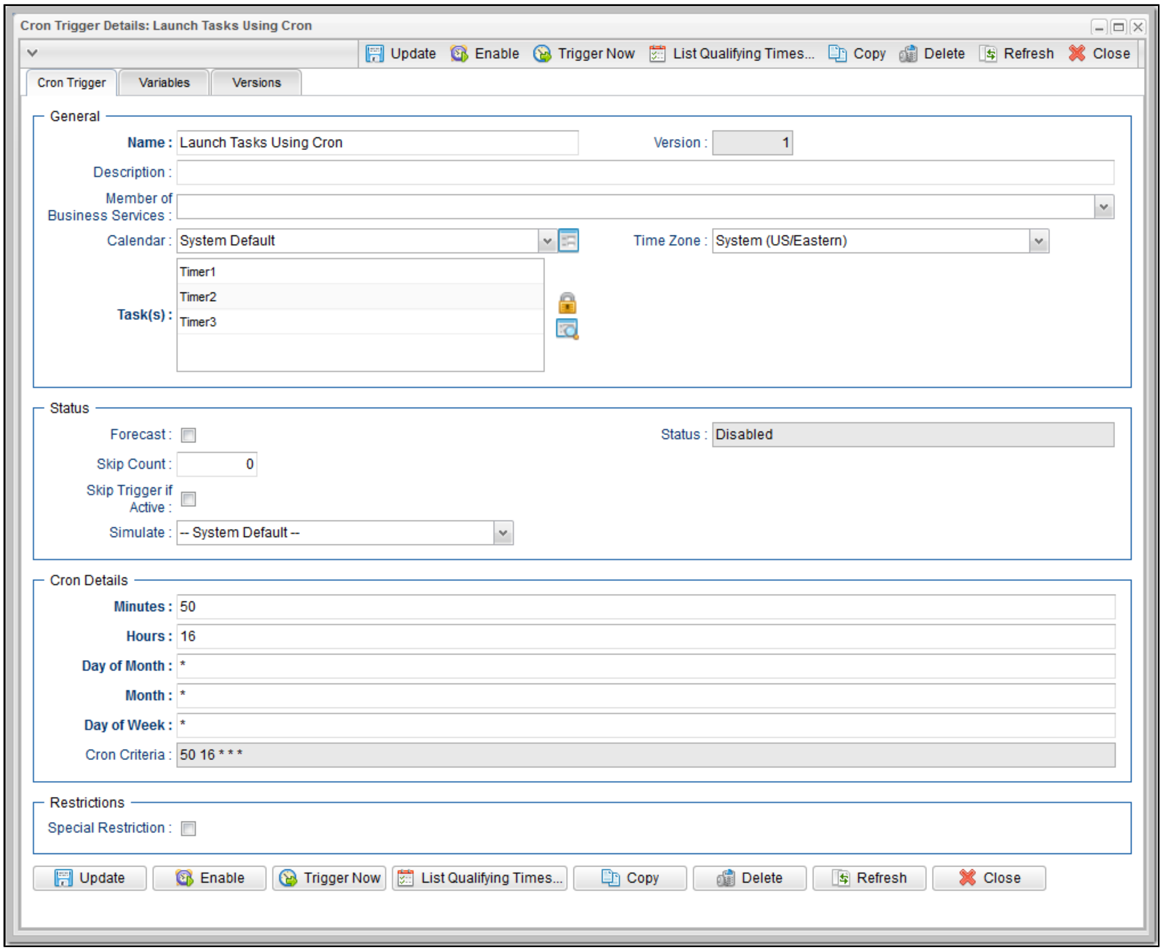
Step 9	Once the user receives the email, the user can quickly check for more information by looking at the Activity Monitor using the Cancelled Task Instances filter and clicking on the Instance Name of the problem task. As shown in the illustration below, additional information about the issue is displayed in the Status Description field.  Manual Task Instance Details: Pause for Manual General Instance Name : Pause for Manual Reference Id : 1 Task : Pause for Manual Invoked By : Manually Launched Task Description : A Manual task run at 2014-09-05 14:09:26 -0400 Member of Business Services : Execution User : ops.admin Virtual Resource Priority : 10 Hold Resources on Failure : □ Status Status : Cancelled Status Description : State was cancelled from ACTION REQUIRED to CANCELLED Start Time : 2014-09-05 14:09:26 -0400 End Time : 2014-09-05 14:19:31 -0400 Duration : Time Options Late Finish : ☑ Late Finish Type : Duration Finished Late : ☑ Late Finish Duration : 00 02 00 HH:MM:SS Statistics User Estimated End Time : Average Estimated End Time : 2014-09-05 14:09:26 -0400 Shortest Estimated End Time : Longest Estimated End Time :

For additional information, see:

- Email Task
- Email Connections
- Email Templates
- Reports
- All Task Instances Table (ops_exec)
- Activity Monitor
- Task Monitor Task
- Task Monitor Trigger
- Command Quick Reference
- Cancelling a Task Run

Tutorial - Launching Tasks Using a Cron Trigger

Create a Cron Trigger

Step 1	From the Automation Center navigation pane, select **Triggers > Cron Triggers**. The Cron Triggers list displays.
Step 2	Click the **New** button to display Cron Trigger Details for a new trigger and enter/select the following values: - **Name** = Launch Tasks Using Cron - **Task(s)** = Timer1, Timer2, and Timer3 Timer tasks - **Minutes** = Number of minutes past the hour you want the tasks to run. For example, if you want the tasks to run at for 3:16, enter 16. - **Hours** = Hour (in 24-hour time) that you want the tasks to run. For example, if you want the tasks to run at for 3:16, enter 15. Opswise Controller uses the time zone of the Controller server.
Step 3	Keep the asterisks (*) in the remaining fields and click the **Save** button.  Update Enable Trigger Now List Qualifying Times... Copy Delete Refresh Close Cron Trigger Variables Versions Cron Trigger Details: Launch Tasks Using Cron General Name : Launch Tasks Using Cron Version : 1 Description : Member of Business Services : Calendar : System Default Time Zone : System (US/Eastern) Task(s) : Timer1 Timer2 Timer3 Status Forecast : □ Status : Disabled Skip Count : 0 Skip Trigger if Active : □ Simulate : -- System Default -- Cron Details Minutes : 50 Hours : 16 Day of Month : * Month : * Day of Week : * Cron Criteria : 50 16 * * * Restrictions Special Restriction : □
Step 4	In the Cron Triggers list, right-click Launch Tasks Using Cron and click **Enable**.
Step 5	Open the Activity Monitor to see that Timer1, Timer2, and Timer 3 are run at the selected time.

For additional information, see:

- Cron Trigger

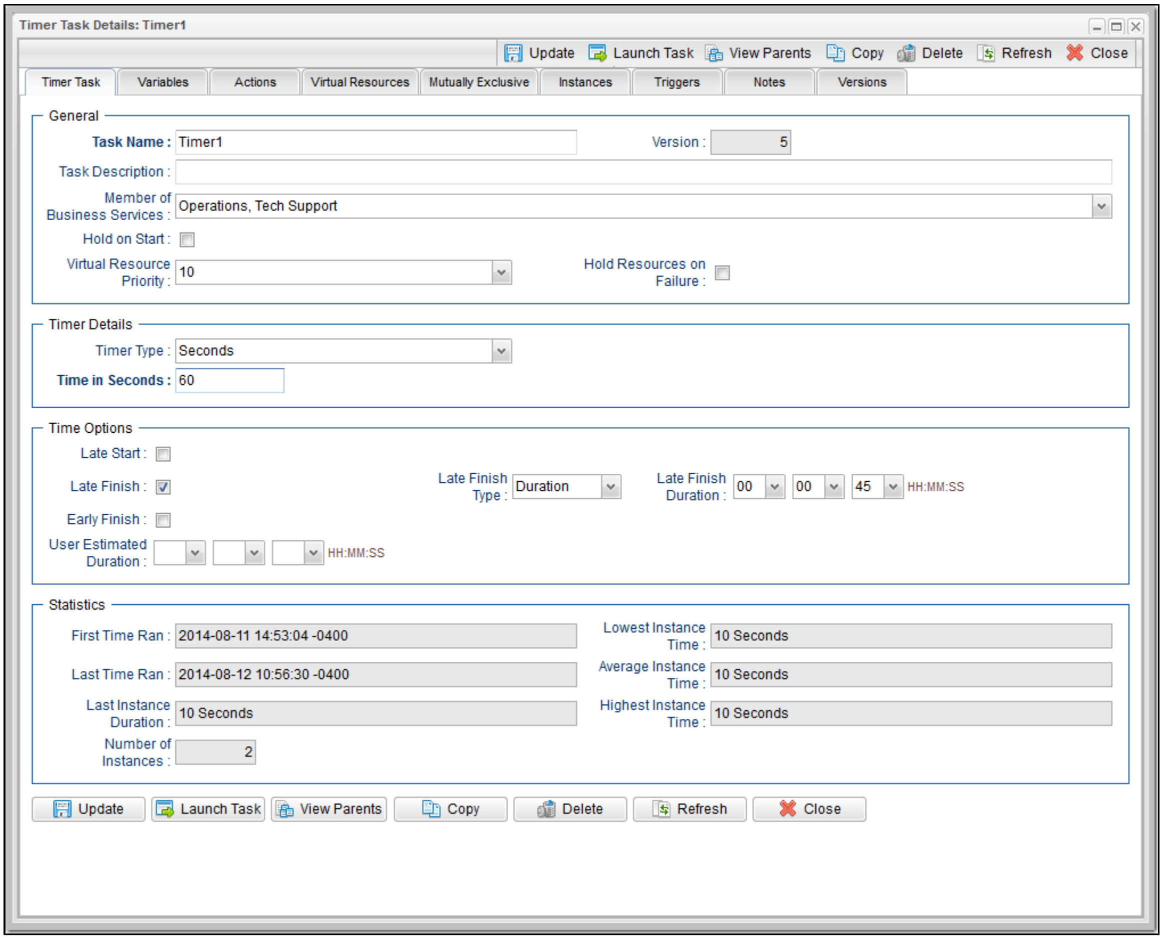
Tutorial - Aborting a Process Launched by a Task

You can use an Abort Actions to instruct Opswise Controller to abort a process under certain conditions. For example, you may want to abort a task if it is running too long.

In this tutorial, we will set a Timer task to run for 60 seconds and specify an Abort Action when the task runs 45 seconds.

Step 1 Open the Timer1 task created in the Creating a Simple Workflow tutorial and enter / select the following values:

- **Time in Seconds** = 60
- **Late Finish** = enabled
- **Late Finish Type** = Duration
- **Late Finish Duration** = 00:00:45



Timer Task Details: Timer1

General

Task Name : Timer1
Version : 5
Task Description :
Member of Business Services : Operations, Tech Support
Hold on Start : □
Virtual Resource Priority : 10
Hold Resources on Failure : □

Timer Details

Timer Type : Seconds
Time in Seconds : 60

Time Options

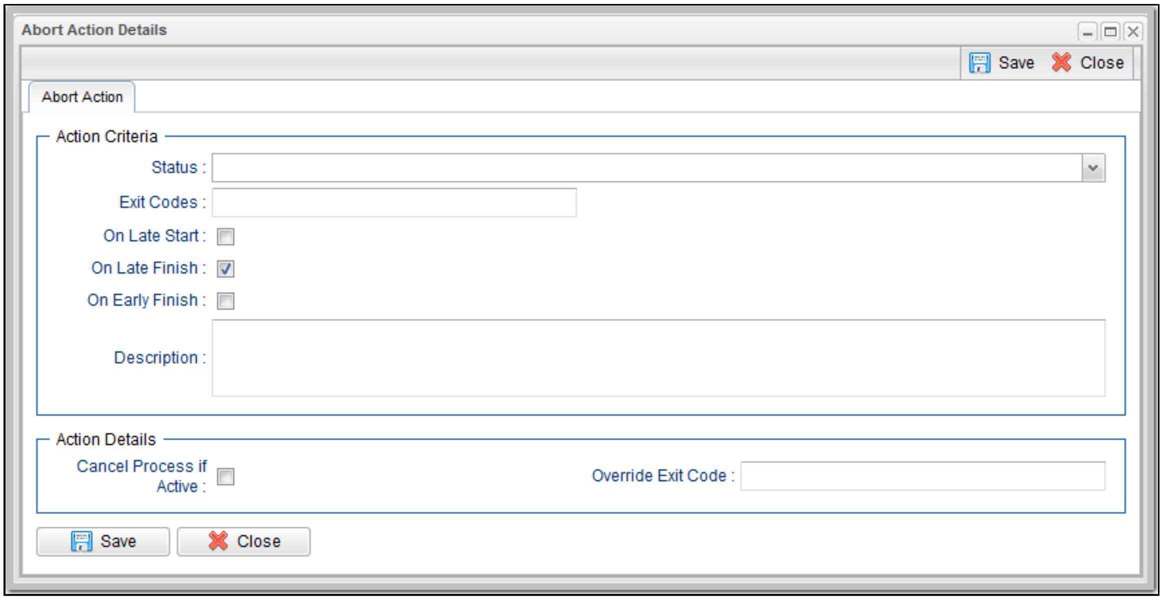
Late Start : □
Late Finish : ☑
Late Finish Type : Duration
Late Finish Duration : 00 00 45 HH:MM:SS
Early Finish : □
User Estimated Duration : HH:MM:SS

Statistics

First Time Ran : 2014-08-11 14:53:04 -0400
Lowest Instance Time : 10 Seconds
Last Time Ran : 2014-08-12 10:56:30 -0400
Average Instance Time : 10 Seconds
Last Instance Duration : 10 Seconds
Highest Instance Time : 10 Seconds
Number of Instances : 2

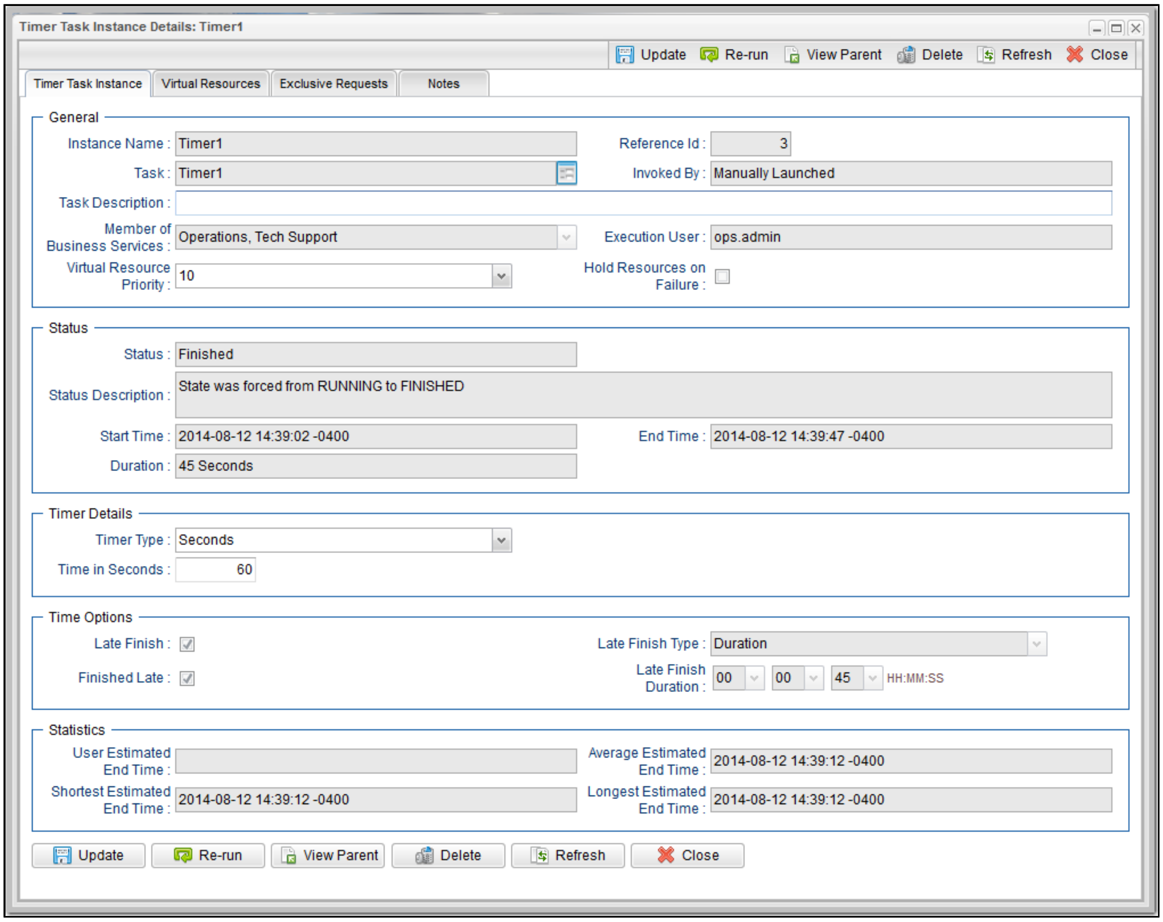
Step 2 Click the **Actions** tab to display the Actions list.

Step 3 Click **Abort Action** to display the Abort Action list.

Step 4	Click **New** to display Abort Action Details for a new Abort action, enable **On Late Finish**, and click **Save**.  Abort Action Details Save Close Abort Action Action Criteria Status : Exit Codes : On Late Start : □ On Late Finish : ☑ On Early Finish : □ Description : Action Details Cancel Process if Active : □ Override Exit Code : Save Close
Step 5	Click the **Timer Task** tab and then click the **Update** button.
Step 6	Right-click **Timer1** in the Timers Tasks list and click **Launch**.
Step 7	Navigate to the Activity Monitor and verify that after running for 45 seconds, the task instance status changes from Running to Finished.

Step 8 Open the task instance Details and note the status description indicates:

```
State was forced from RUNNING to FINISHED
```



General

Instance Name : Timer1

Reference Id : 3

Task : Timer1

Invoked By : Manually Launched

Task Description :

Member of Business Services : Operations, Tech Support

Execution User : ops.admin

Virtual Resource Priority : 10

Hold Resources on Failure : □

Status

Status : Finished

Status Description : State was forced from RUNNING to FINISHED

Start Time : 2014-08-12 14:39:02 -0400

End Time : 2014-08-12 14:39:47 -0400

Duration : 45 Seconds

Timer Details

Timer Type : Seconds

Time in Seconds : 60

Time Options

Late Finish : ☑

Late Finish Type : Duration

Finished Late : ☑

Late Finish Duration : 00 00 45 HH:MM:SS

Statistics

User Estimated End Time :

Average Estimated End Time : 2014-08-12 14:39:12 -0400

Shortest Estimated End Time : 2014-08-12 14:39:12 -0400

Longest Estimated End Time : 2014-08-12 14:39:12 -0400

For additional information, see:

- Setting Up Abort Actions

Tutorial - Force Finishing, Force Finish-Cancelling, and Cancelling a Task

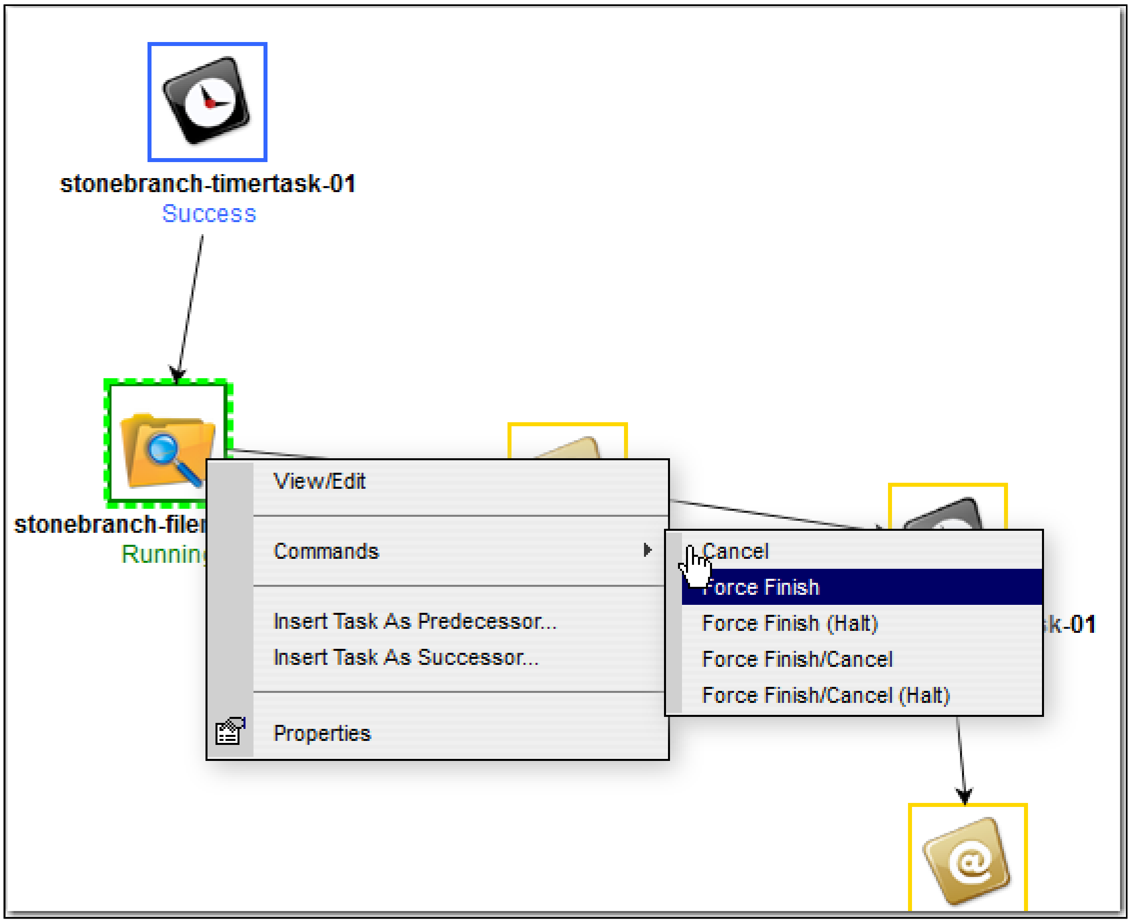
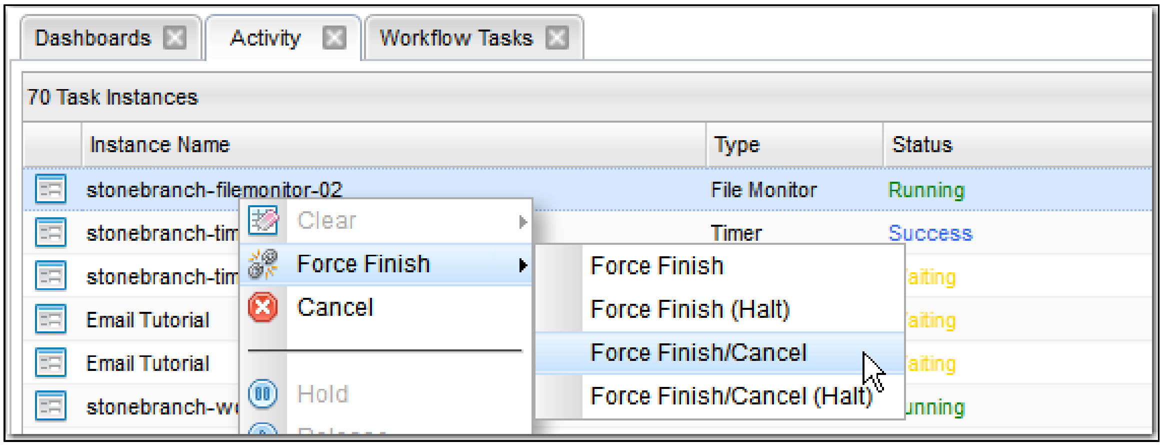
In this exercise, we will force finish, force finish/cancel, and cancel tasks within a workflow from three areas:

- Workflow Monitor
- Activity Monitor
- Task Instances list

You can run any of these three commands from any of these three areas. For stand-alone tasks, you can run these commands only from the Activity Monitor and Task Instances list.

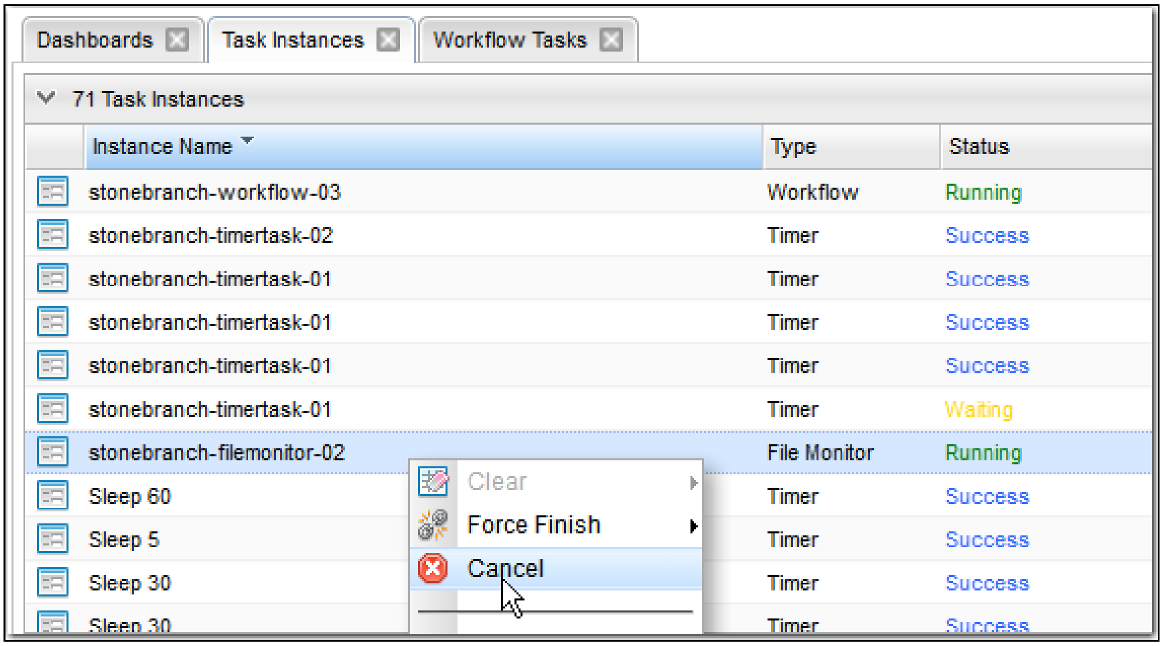
⚠ **Note**
You can force finish, force finish/cancel, and cancel any task in Running status, but you only can force finish a task in Waiting status. See Manually Running and Controlling Tasks for a complete list of task statuses for each command.

Step 1	From the Automation Center navigation pane, select **Tasks > Workflow Tasks**. The Workflow Tasks list displays.
Step 2	Create a Workflow with an Agent-based task, such as a File Monitor task, that can be Force Finished, Force Finish / Cancelled, and Cancelled. (See the Creating a Simple Workflow tutorial for help on creating the Workflow.)
Step 3	Click **Launch Task** to run the Workflow.

Step 4	**Force Finish a task from the Workflow Monitor:** 1. From the **Automation Center** navigation pane, select **Task Instances > Task Instances** to display the Activity Monitor which displays, by default, a list of Active Task Instances. 2. Click Simple Workflow to display its Workflow Monitor. 3. Right-click a Waiting task and, from the list of Commands on the pop-up menu, click Force Finish. The status of the task changes from Waiting to Finished, and all successor task instances waiting for successful completion of this task instance will start.  stonebranch-timertask-01 Success stonebranch-filer Runnin View/Edit Commands Insert Task As Predecessor... Insert Task As Successor... Properties Cancel Force Finish Force Finish (Halt) Force Finish/Cancel Force Finish/Cancel (Halt) k-01
Step 5	**Force Finish/Cancel a task from the Activity Monitor:** 1. Return to the Activity Monitor. 2. Right-click a Simple Workflow task that is in the Running status and, on the Action menu, click Force Finish/Cancel. The status of the task changes from Running to Finished, and all successor task instances waiting for successful completion of this task instance will start.  Dashboards Activity Workflow Tasks 70 Task Instances Instance Name Type Status stonebranch-filemonitor-02 File Monitor Running stonebranch-tim Timer Success stonebranch-tim aiting Email Tutorial aiting Email Tutorial aiting stonebranch-w unning Clear Force Finish Cancel Hold Force Finish Force Finish (Halt) Force Finish/Cancel Force Finish/Cancel (Halt)

Step 6 **Cancel a task from the Task Instances list:**

1. From the **Automation Center** navigation pane, select **Task Instances > Task Instances** to display the Task Instances list.
2. Right-click a Simple Workflow task in the Running status and, on the Action menu, click Cancel. The status of the task changes from Running to Cancelled, and all successor task instances waiting for successful completion of this task will remain in the Waiting status. The status of Simple Workflow changes from Running to Running/Problems.



Instance Name	Type	Status
stonebranch-workflow-03	Workflow	Running
stonebranch-timertask-02	Timer	Success
stonebranch-timertask-01	Timer	Success
stonebranch-timertask-01	Timer	Success
stonebranch-timertask-01	Timer	Success
stonebranch-timertask-01	Timer	Waiting
stonebranch-filemonitor-02	File Monitor	Running
Sleep 60	Timer	Success
Sleep 5	Timer	Success
Sleep 30	Timer	Success
Sleep 30	Timer	Success

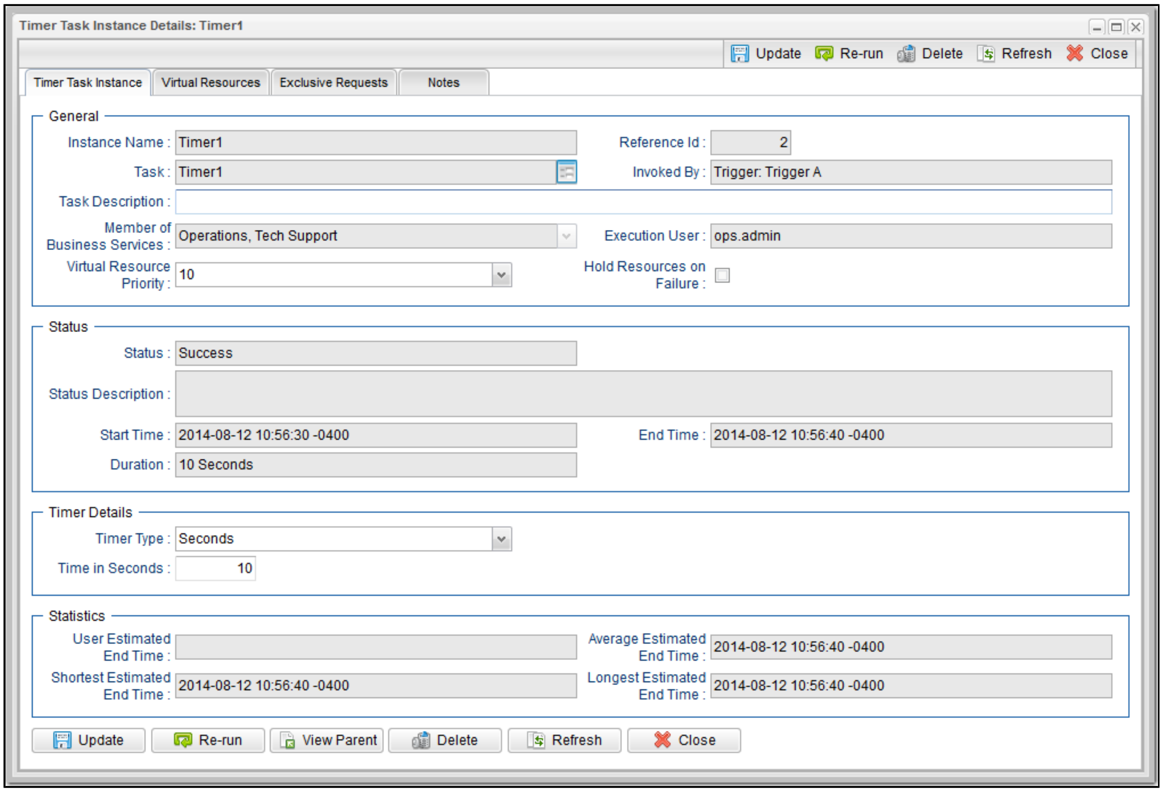
For additional information, see:

- Force Finishing a Task
- Cancelling a Task
- Force Finish / Cancelling a Task
- Monitoring Activity from the Activity Monitor
- Monitoring Activity from the Task Instances List
- Monitoring Workflows

Tutorial - Accessing Task Instance Details

Step 1 From the Automation Center navigation pane, select **Task Instances > Activity** to display the Activity Monitor.

Step 2 Click the **Instance Name** of any task instance to display its Task Instance Details. For example:



General

- Instance Name : Timer1
- Reference Id : 2
- Task : Timer1
- Invoked By : Trigger: Trigger A
- Task Description :
- Member of Business Services : Operations, Tech Support
- Execution User : ops.admin
- Virtual Resource Priority : 10
- Hold Resources on Failure : □

Status

- Status : Success
- Status Description :
- Start Time : 2014-08-12 10:56:30 -0400
- End Time : 2014-08-12 10:56:40 -0400
- Duration : 10 Seconds

Timer Details

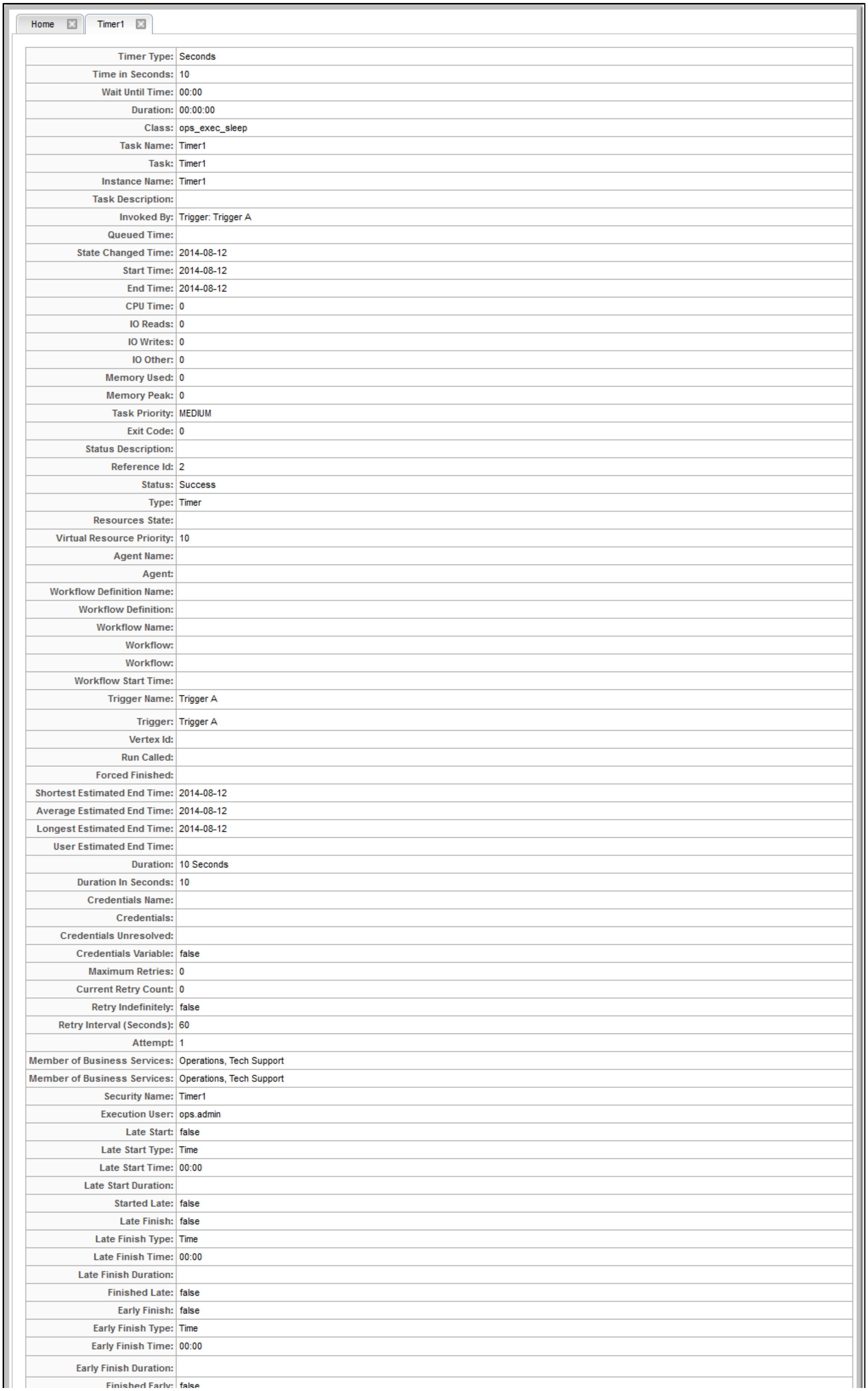
- Timer Type : Seconds
- Time in Seconds : 10

Statistics

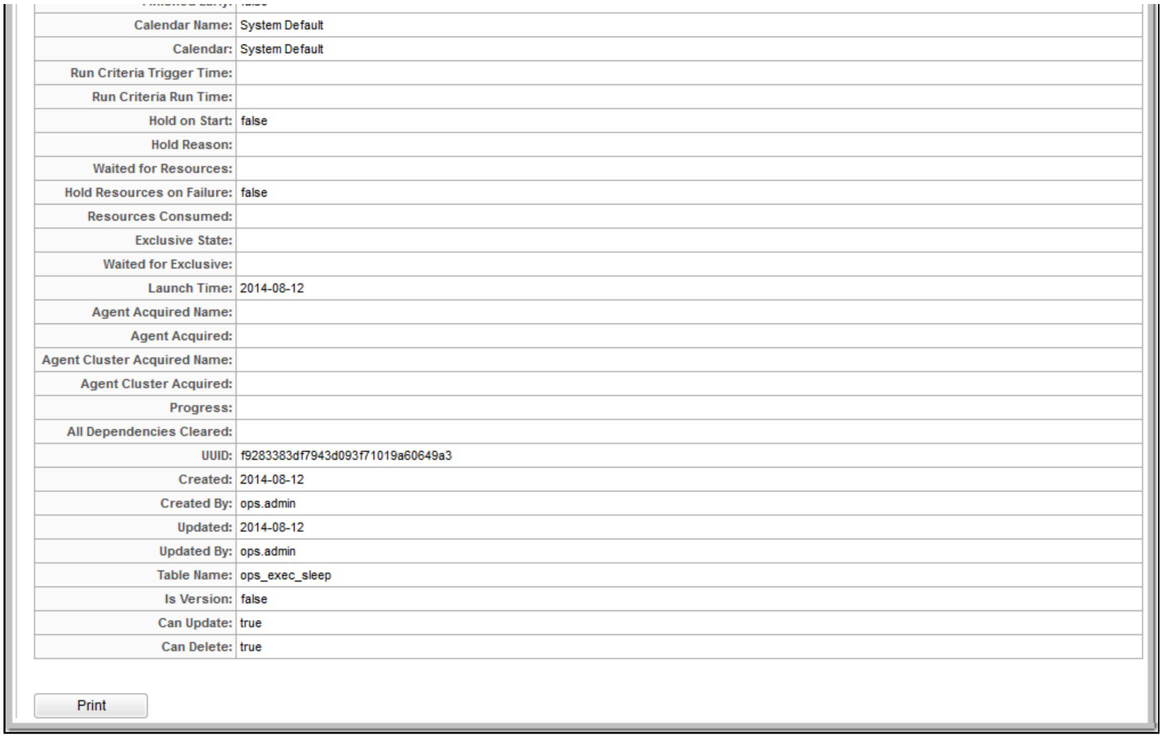
- User Estimated End Time :
- Average Estimated End Time : 2014-08-12 10:56:40 -0400
- Shortest Estimated End Time : 2014-08-12 10:56:40 -0400
- Longest Estimated End Time : 2014-08-12 10:56:40 -0400

Task Instance Details contain many fields not displayed in the Task Details for this task that provide information about this run (instance) of the task and all runs of the task, including the first time it was run; the last time it was run; the number of times it has run; and the least, average, and most amount of time it has ever taken to run.

Step 3 To view all details stored in the All Task Instances table (`ops_exec`) for this task instance, right-click anywhere in the Task Instance Details to display an Action menu and then click **Details > Show Details**.



Timer Type:	Seconds
Time in Seconds:	10
Wait Until Time:	00:00
Duration:	00:00:00
Class:	ops_exec_sleep
Task Name:	Timer1
Task:	Timer1
Instance Name:	Timer1
Task Description:	
Invoked By:	Trigger: Trigger A
Queued Time:	
State Changed Time:	2014-08-12
Start Time:	2014-08-12
End Time:	2014-08-12
CPU Time:	0
IO Reads:	0
IO Writes:	0
IO Other:	0
Memory Used:	0
Memory Peak:	0
Task Priority:	MEDIUM
Exit Code:	0
Status Description:	
Reference Id:	2
Status:	Success
Type:	Timer
Resources State:	
Virtual Resource Priority:	10
Agent Name:	
Agent:	
Workflow Definition Name:	
Workflow Definition:	
Workflow Name:	
Workflow:	
Workflow:	
Workflow Start Time:	
Trigger Name:	Trigger A
Trigger:	Trigger A
Vertex Id:	
Run Called:	
Forced Finished:	
Shortest Estimated End Time:	2014-08-12
Average Estimated End Time:	2014-08-12
Longest Estimated End Time:	2014-08-12
User Estimated End Time:	
Duration:	10 Seconds
Duration In Seconds:	10
Credentials Name:	
Credentials:	
Credentials Unresolved:	
Credentials Variable:	false
Maximum Retries:	0
Current Retry Count:	0
Retry Indefinitely:	false
Retry Interval (Seconds):	60
Attempt:	1
Member of Business Services:	Operations, Tech Support
Member of Business Services:	Operations, Tech Support
Security Name:	Timer1
Execution User:	ops.admin
Late Start:	false
Late Start Type:	Time
Late Start Time:	00:00
Late Start Duration:	
Started Late:	false
Late Finish:	false
Late Finish Type:	Time
Late Finish Time:	00:00
Late Finish Duration:	
Finished Late:	false
Early Finish:	false
Early Finish Type:	Time
Early Finish Time:	00:00
Early Finish Duration:	
Finished Early:	false



Calendar Name:	System Default
Calendar:	System Default
Run Criteria Trigger Time:	
Run Criteria Run Time:	
Hold on Start:	false
Hold Reason:	
Waited for Resources:	
Hold Resources on Failure:	false
Resources Consumed:	
Exclusive State:	
Waited for Exclusive:	
Launch Time:	2014-08-12
Agent Acquired Name:	
Agent Acquired:	
Agent Cluster Acquired Name:	
Agent Cluster Acquired:	
Progress:	
All Dependencies Cleared:	
UUID:	f9283383df7943d093f71019a60649a3
Created:	2014-08-12
Created By:	ops.admin
Updated:	2014-08-12
Updated By:	ops.admin
Table Name:	ops_exec_sleep
Is Version:	false
Can Update:	true
Can Delete:	true

- Left column shows each field in the All Task Instances table for this task instance.
- Right column shows the current value for each field for this task instance.

Tutorial - Monitoring Task Activity

In this tutorial, we will monitor task activity from the Activity Monitor.

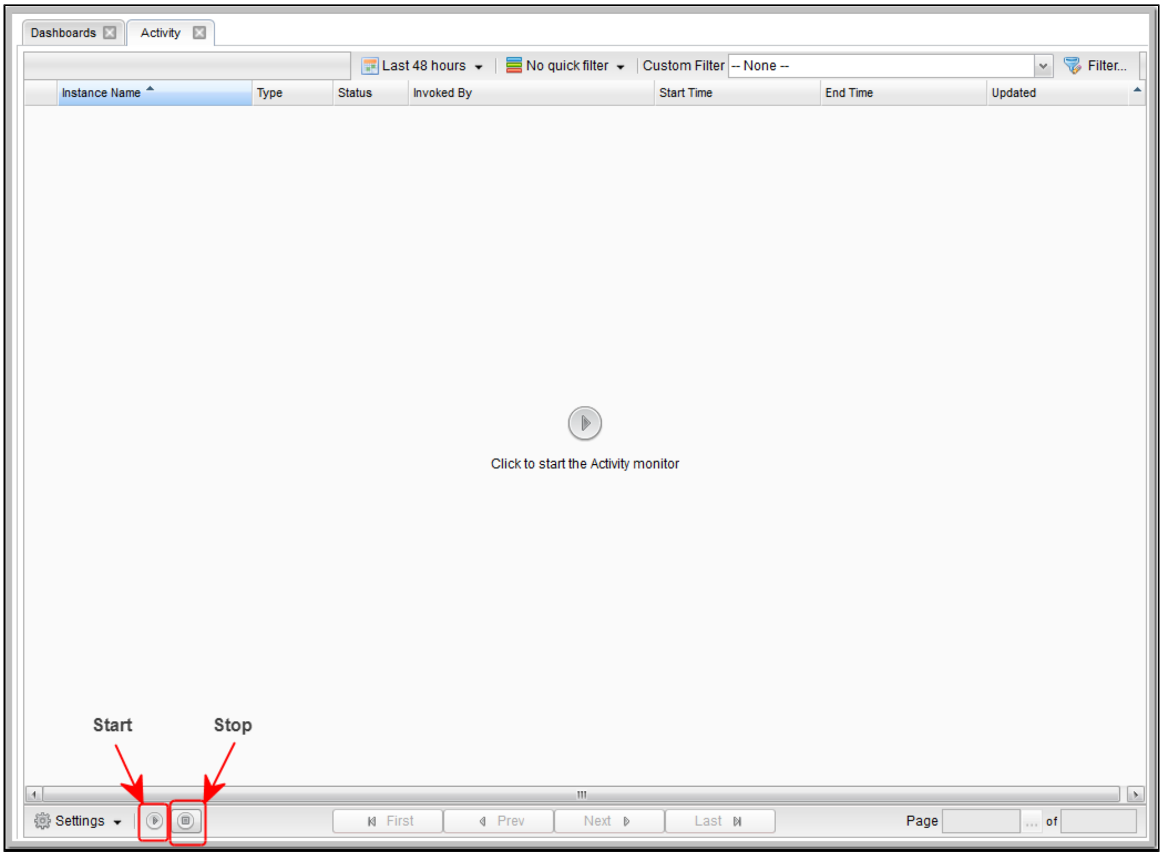
We will start and stop the Activity Monitor, apply time constraints and filters to the task instances displayed on the Activity Monitor, and apply display settings to the Activity Monitor.

Starting and Stopping the Activity Monitor

By default, the Activity Monitor does not automatically monitor Opswise Controller activity when you log in. You must start the Activity Monitor to see task activity.

(You can allow the Activity Monitor to automatically monitor Controller activity when you log in by changing the Activity Monitor Automatically user preference.)

Step 1 From the Automation Center navigation pane, select **Task Instances > Activity**. The Activity Monitor displays.



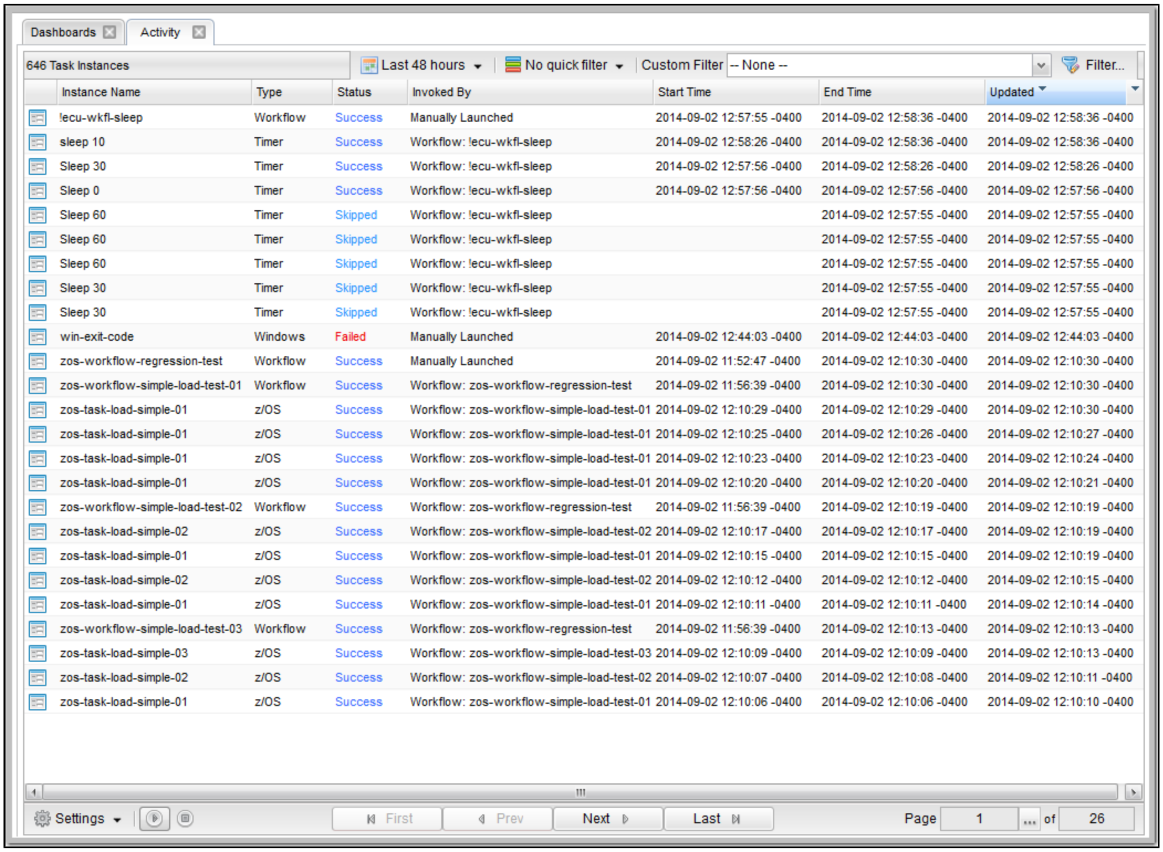
Click to start the Activity monitor

Step 2

To start the Activity Monitor, either:

1. Click the **Click to start the Activity monitor** button in the middle of the Activity Monitor.
2. Click the **Start Activity monitor** button at the bottom of the Activity Monitor.

The Activity Monitor then displays a list of all current activity.



646 Task Instances

Custom Filter -- None --

Instance Name	Type	Status	Invoked By	Start Time	End Time	Updated
!ecu-wkfl-sleep	Workflow	Success	Manually Launched	2014-09-02 12:57:55 -0400	2014-09-02 12:58:36 -0400	2014-09-02 12:58:36 -0400
sleep 10	Timer	Success	Workflow: !ecu-wkfl-sleep	2014-09-02 12:58:26 -0400	2014-09-02 12:58:36 -0400	2014-09-02 12:58:36 -0400
Sleep 30	Timer	Success	Workflow: !ecu-wkfl-sleep	2014-09-02 12:57:56 -0400	2014-09-02 12:58:26 -0400	2014-09-02 12:58:26 -0400
Sleep 0	Timer	Success	Workflow: !ecu-wkfl-sleep	2014-09-02 12:57:56 -0400	2014-09-02 12:57:56 -0400	2014-09-02 12:57:56 -0400
Sleep 60	Timer	Skipped	Workflow: !ecu-wkfl-sleep		2014-09-02 12:57:55 -0400	2014-09-02 12:57:55 -0400
Sleep 60	Timer	Skipped	Workflow: !ecu-wkfl-sleep		2014-09-02 12:57:55 -0400	2014-09-02 12:57:55 -0400
Sleep 60	Timer	Skipped	Workflow: !ecu-wkfl-sleep		2014-09-02 12:57:55 -0400	2014-09-02 12:57:55 -0400
Sleep 30	Timer	Skipped	Workflow: !ecu-wkfl-sleep		2014-09-02 12:57:55 -0400	2014-09-02 12:57:55 -0400
Sleep 30	Timer	Skipped	Workflow: !ecu-wkfl-sleep		2014-09-02 12:57:55 -0400	2014-09-02 12:57:55 -0400
win-exit-code	Windows	Failed	Manually Launched	2014-09-02 12:44:03 -0400	2014-09-02 12:44:03 -0400	2014-09-02 12:44:03 -0400
zos-workflow-regression-test	Workflow	Success	Manually Launched	2014-09-02 11:52:47 -0400	2014-09-02 12:10:30 -0400	2014-09-02 12:10:30 -0400
zos-workflow-simple-load-test-01	Workflow	Success	Workflow: zos-workflow-regression-test	2014-09-02 11:56:39 -0400	2014-09-02 12:10:30 -0400	2014-09-02 12:10:30 -0400
zos-task-load-simple-01	z/OS	Success	Workflow: zos-workflow-simple-load-test-01	2014-09-02 12:10:29 -0400	2014-09-02 12:10:29 -0400	2014-09-02 12:10:30 -0400
zos-task-load-simple-01	z/OS	Success	Workflow: zos-workflow-simple-load-test-01	2014-09-02 12:10:25 -0400	2014-09-02 12:10:26 -0400	2014-09-02 12:10:27 -0400
zos-task-load-simple-01	z/OS	Success	Workflow: zos-workflow-simple-load-test-01	2014-09-02 12:10:23 -0400	2014-09-02 12:10:23 -0400	2014-09-02 12:10:24 -0400
zos-task-load-simple-01	z/OS	Success	Workflow: zos-workflow-simple-load-test-01	2014-09-02 12:10:20 -0400	2014-09-02 12:10:20 -0400	2014-09-02 12:10:21 -0400
zos-workflow-simple-load-test-02	Workflow	Success	Workflow: zos-workflow-regression-test	2014-09-02 11:56:39 -0400	2014-09-02 12:10:19 -0400	2014-09-02 12:10:19 -0400
zos-task-load-simple-02	z/OS	Success	Workflow: zos-workflow-simple-load-test-02	2014-09-02 12:10:17 -0400	2014-09-02 12:10:17 -0400	2014-09-02 12:10:19 -0400
zos-task-load-simple-01	z/OS	Success	Workflow: zos-workflow-simple-load-test-01	2014-09-02 12:10:15 -0400	2014-09-02 12:10:15 -0400	2014-09-02 12:10:19 -0400
zos-task-load-simple-02	z/OS	Success	Workflow: zos-workflow-simple-load-test-02	2014-09-02 12:10:12 -0400	2014-09-02 12:10:12 -0400	2014-09-02 12:10:15 -0400
zos-task-load-simple-01	z/OS	Success	Workflow: zos-workflow-simple-load-test-01	2014-09-02 12:10:11 -0400	2014-09-02 12:10:11 -0400	2014-09-02 12:10:14 -0400
zos-workflow-simple-load-test-03	Workflow	Success	Workflow: zos-workflow-regression-test	2014-09-02 11:56:39 -0400	2014-09-02 12:10:13 -0400	2014-09-02 12:10:13 -0400
zos-task-load-simple-03	z/OS	Success	Workflow: zos-workflow-simple-load-test-03	2014-09-02 12:10:09 -0400	2014-09-02 12:10:09 -0400	2014-09-02 12:10:13 -0400
zos-task-load-simple-02	z/OS	Success	Workflow: zos-workflow-simple-load-test-02	2014-09-02 12:10:07 -0400	2014-09-02 12:10:08 -0400	2014-09-02 12:10:11 -0400
zos-task-load-simple-01	z/OS	Success	Workflow: zos-workflow-simple-load-test-01	2014-09-02 12:10:06 -0400	2014-09-02 12:10:06 -0400	2014-09-02 12:10:10 -0400

Page 1 ... of 26

Step 3

To stop the Activity Monitor, click the **Stop Activity monitor** button at the bottom of the Activity Monitor.

Apply Time Constraints and Filters to the Activity Monitor

(You can select apply any time constraint for any combination of multiple filters for the list of task instances on the the Activity Monitor.)

Step 1	Select a time frame of task activity to display on the Activity Monitor by clicking the Time Constraint button and selecting a time fame from the menu. The default is **Last 48 hours**, which means that the Activity Monitor will display only task activity that occurred in the last 48 hours.
Step 2	Click the Quick Filter button to display a menu of simple, pre-defined filters that you can apply to the list, such as a specific task type of specific task instance status. You can apply as many Quick Filters as you like to the list.
Step 3	Click the **Clear** button at the bottom of the Quick Filter menu to remove all Quick Filters from the list.
Step 4	Click the **Filter** button to select a Custom Filter of complex, user-defined filter that you can apply to the list, such as only task instances that belong to a specific Business Service.

Apply Display Settings to the Activity Monitor

Step 1

Click the Settings button at the bottom of the Activity Monitor to select:

- Number of task instances to display on each page of the Activity Monitor.
- Refresh rate for the dynamic data displayed on the Activity Monitor.

Step 2	Click the **First**, **Prev**, **Next**, and **Last** buttons at the bottom of the Activity Monitor to navigate through multiple pages of activity.
Step 3	Click the ellipse (**...**) button at the bottom of the Activity Monitor to select a specific page of activity to display.

Tutorial - Creating a Simple Workflow

Introduction

In this tutorial, we will learn how to copy tasks, create a simple Workflow of Timer tasks, and use the tools available in the Workflow Editor.

Create and Copy Tasks

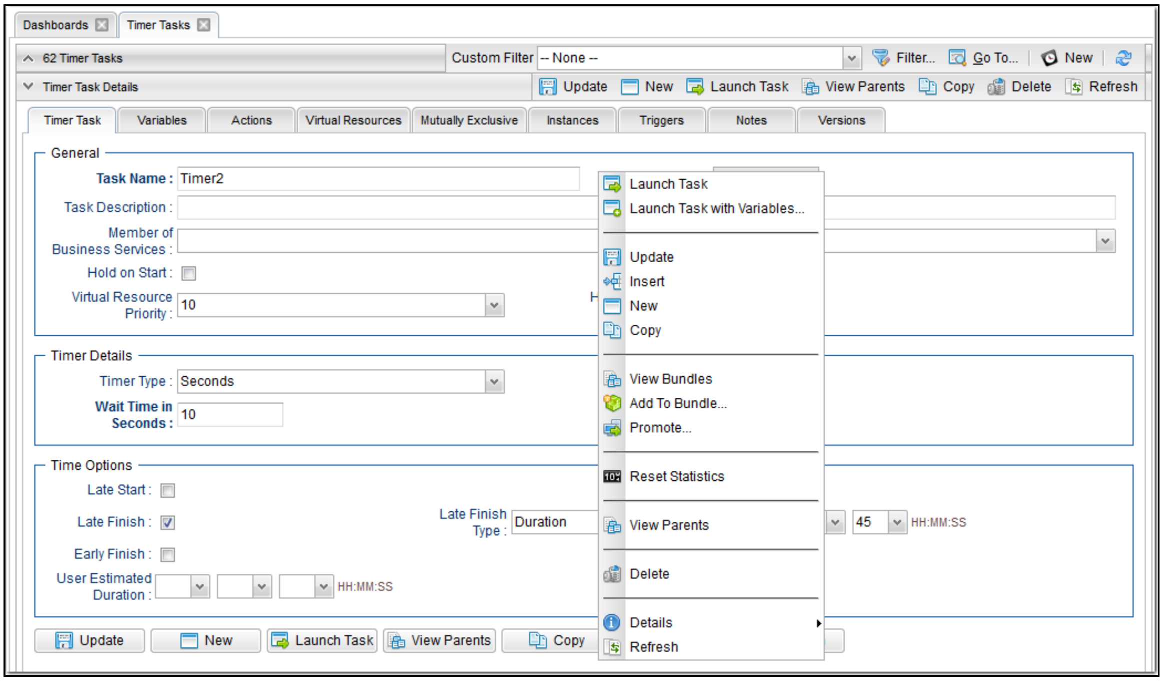
Create a Timer task and make five copies for use in the Workflow. Use the names Timer1 through Timer6, and assign each task a time of 10 seconds.

> **Note**
> You can copy tasks using different methods. One method is provided below.

Step 1 From the Automation Center navigation pane, select **Tasks > Timer Tasks**. The Timer Tasks list displays.

Step 2 In the Timer Task Details below the list, create Timer1 and click **Save**.

Step 3 Change the **Task Name** from Timer1 to Timer2, right-click the Details to display an Action menu, and click **Insert** to make a copy of the Timer1 task named Timer2.



62 Timer Tasks

Custom Filter: -- None --

Timer Task Details

General

Task Name : Timer2

Task Description :

Member of Business Services :

Hold on Start : □

Virtual Resource Priority : 10

Timer Details

Timer Type : Seconds

Wait Time in Seconds : 10

Time Options

Late Start : □

Late Finish : ☑

Late Finish Type : Duration

45 HH:MM:SS

Early Finish : □

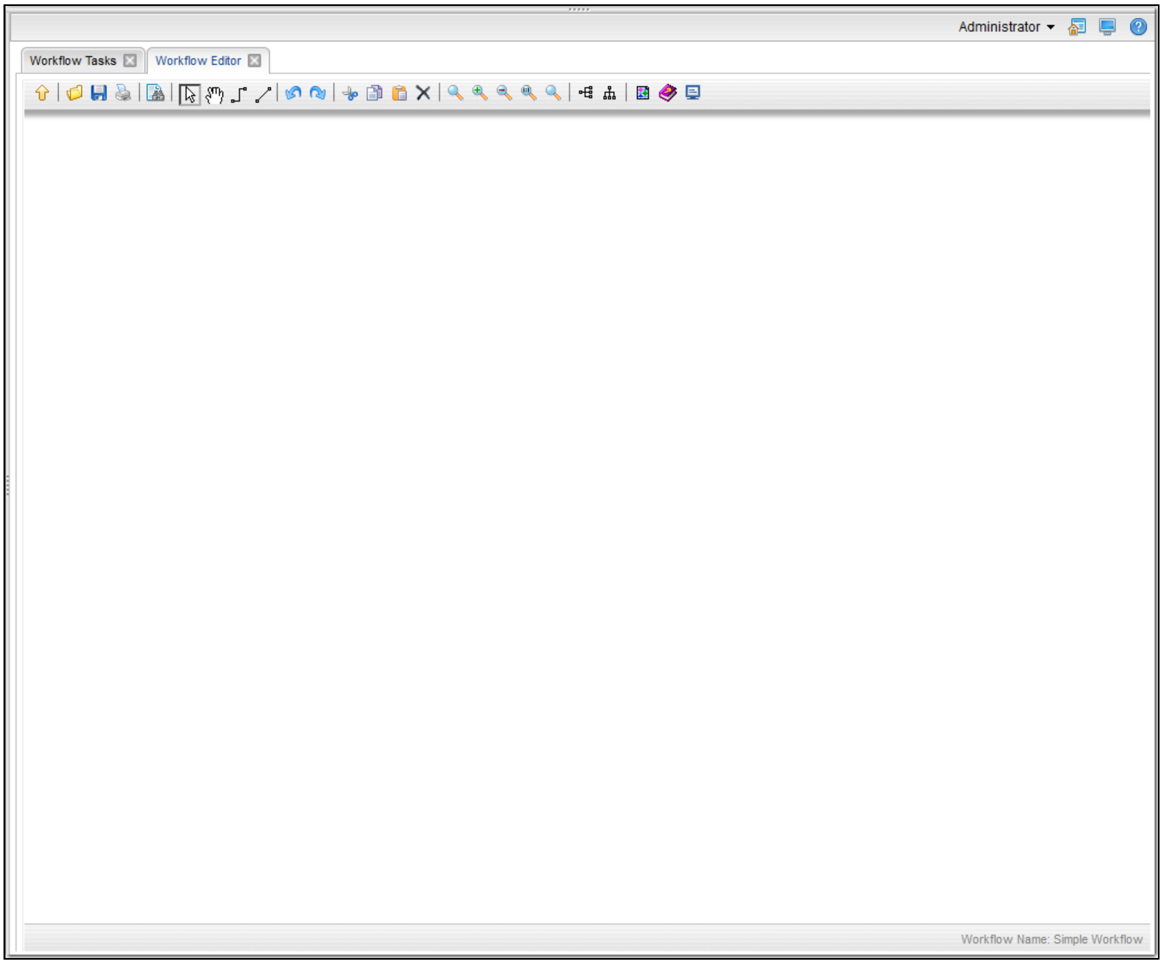
User Estimated Duration : HH:MM:SS

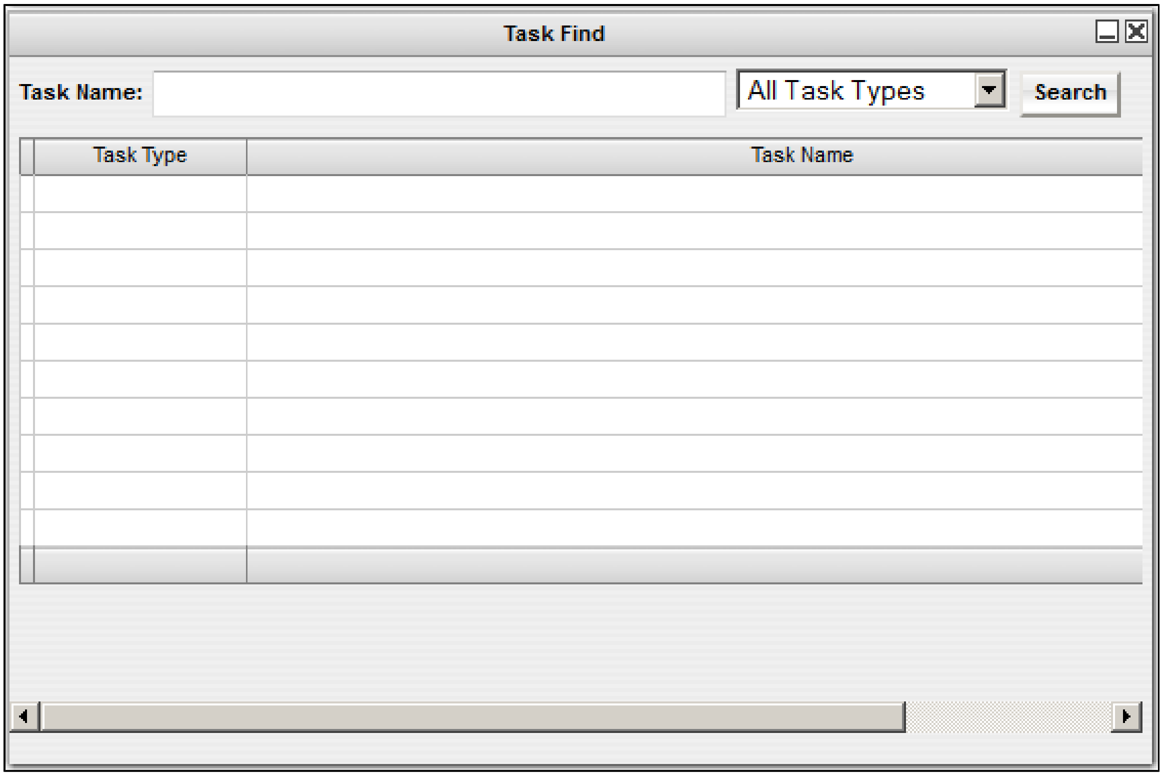
Step 4 Repeat Step 3 for Timer3 through Timer6.

Creating a Simple Workflow

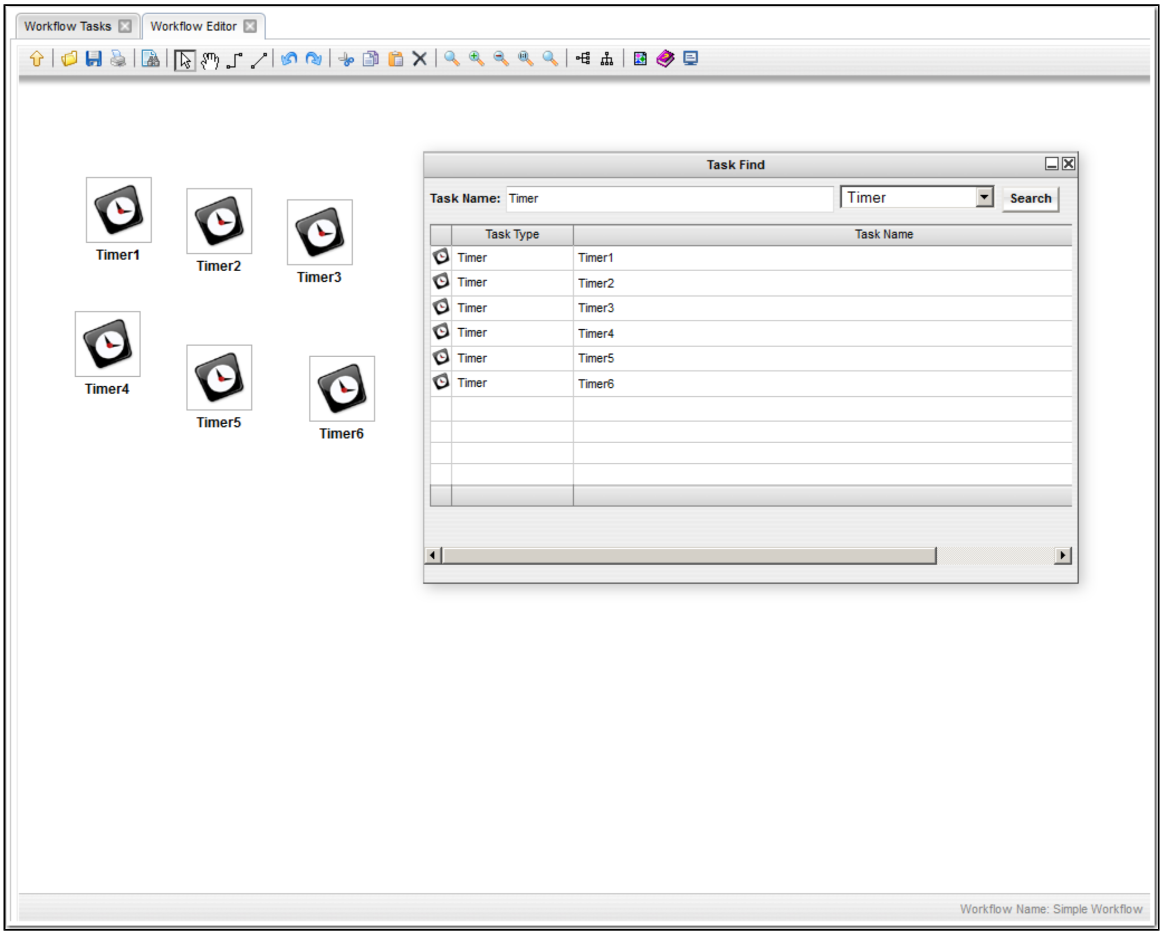
Now that we have six Timer tasks, we are ready to create a simple workflow.

(See Creating and Maintaining Workflows for detailed information on the tools and icons used in this procedure.)

Step 1	From the **Automation Center** navigation pane, select **Tasks > Workflow Tasks**. The Workflow Tasks List displays.
Step 2	In the Workflow Task Details below the list, enter **Simple Workflow** in the **Task Name** field and then click the **Save** button.
Step 3	Click the **Edit Workflow** button to display the Workflow Editor.  Workflow Name: Simple Workflow By default, the Workflow Editor displays in **Select** mode, which lets you select tasks for the Workflow. (See Workflow Editor Icons for a description of each icon on the toolbar.)

Step 4	Click the **Add Task** icon. The **Task Find** pop-up dialog displays.  Task Find Task Name: All Task Types Search Task Type Task Name
Step 5	Select **Timer** in the drop-down list and click the **Search** button. A list of all Timer tasks displays.

<table>
<tr><td><b>Step 6</b></td><td>Drag and drop the icon for Timer1 onto the Workflow Editor canvas, and repeat for Timer2 through Timer6.

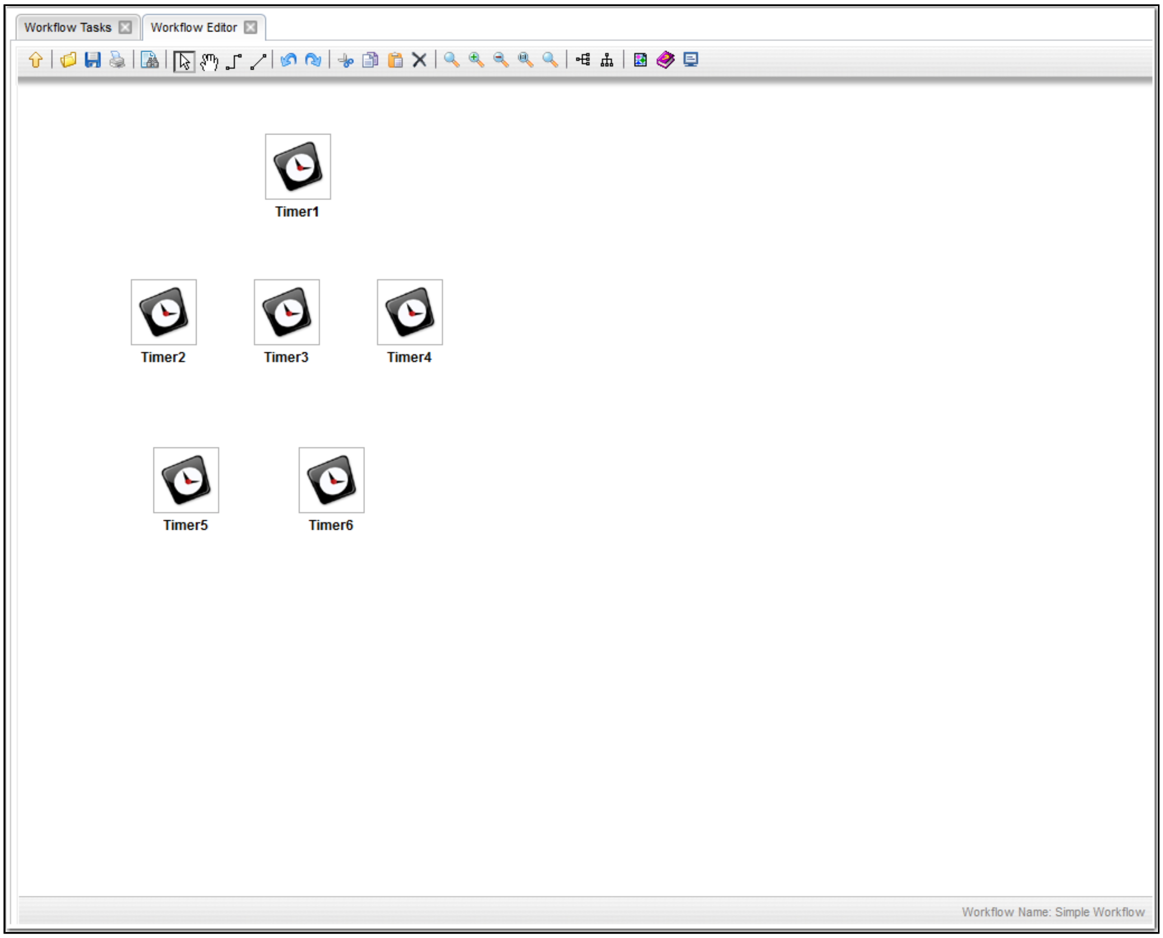


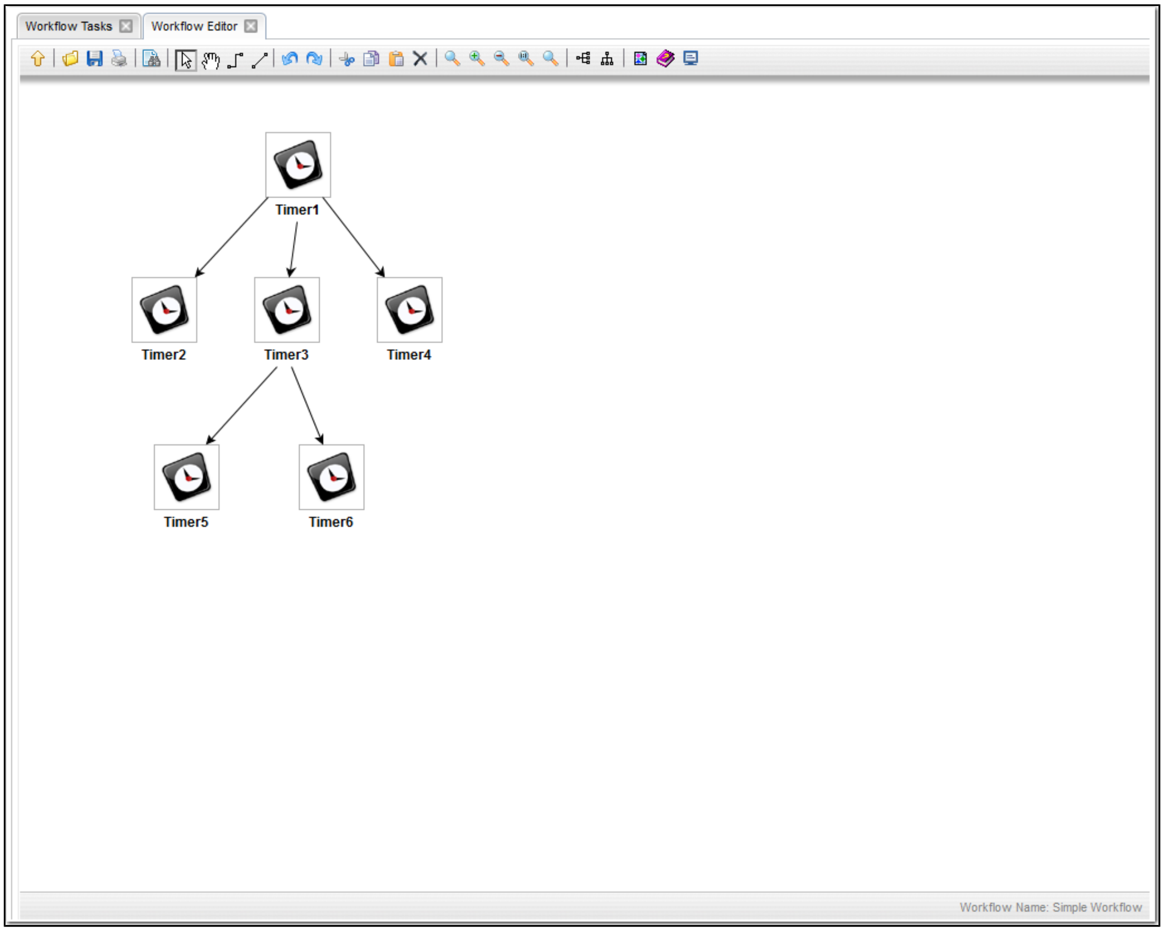
Task Name: Timer

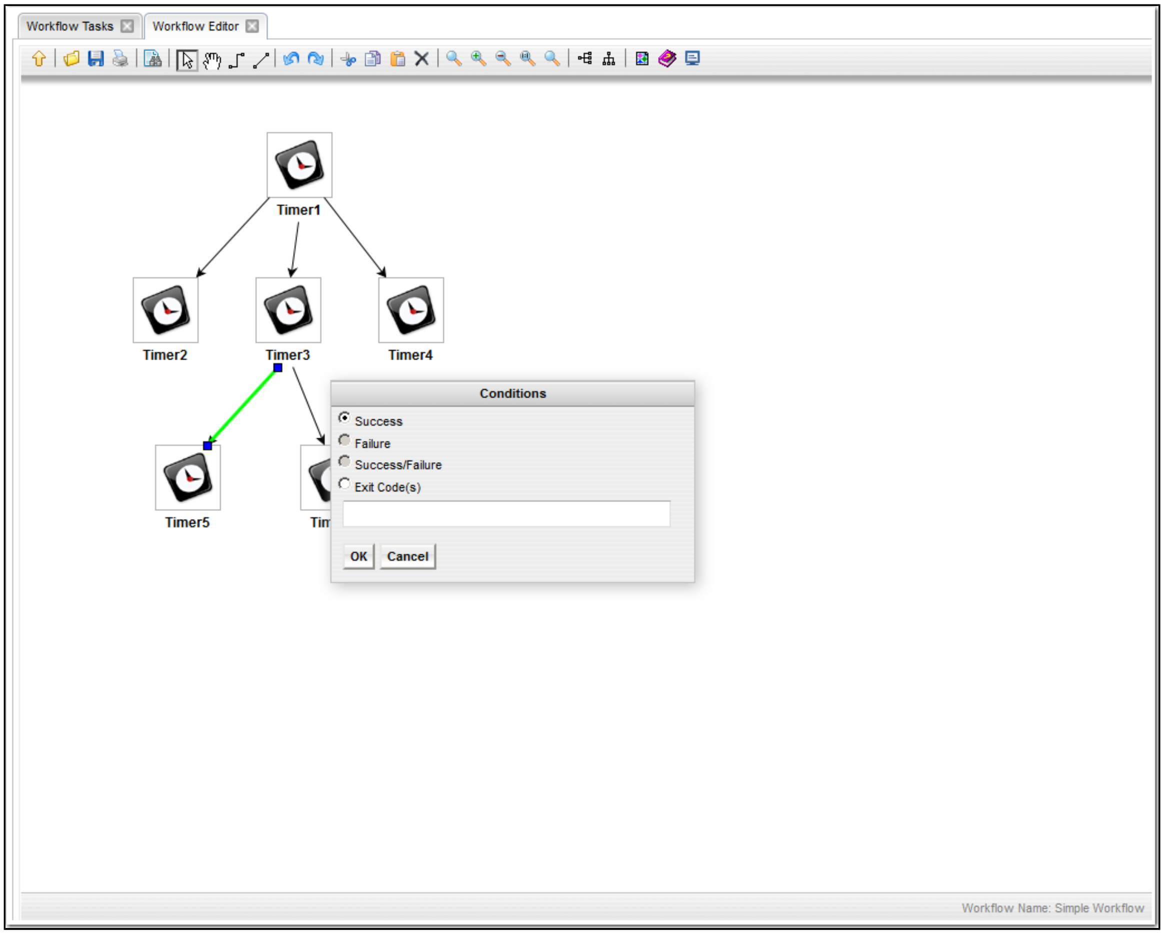
Timer

<table>
<tr><th>Task Type</th><th>Task Name</th></tr>
<tr><td>Timer</td><td>Timer1</td></tr>
<tr><td>Timer</td><td>Timer2</td></tr>
<tr><td>Timer</td><td>Timer3</td></tr>
<tr><td>Timer</td><td>Timer4</td></tr>
<tr><td>Timer</td><td>Timer5</td></tr>
<tr><td>Timer</td><td>Timer6</td></tr>
</table>

Workflow Name: Simple Workflow</td></tr>
<tr><td><b>Step 7</b></td><td>Close the <b>Task Find</b> pop-up dialog.</td></tr>
</table>

Step 8	Click and drag the tasks so that Timer1 is at the top of the canvas; Timer2, Timer3, and Timer4 are below Timer1; and Timer 5 and Timer6 are below Timer2, Timer3, and Timer4.  Workflow Tasks Workflow Editor Timer1 Timer2 Timer3 Timer4 Timer5 Timer6 Workflow Name: Simple Workflow

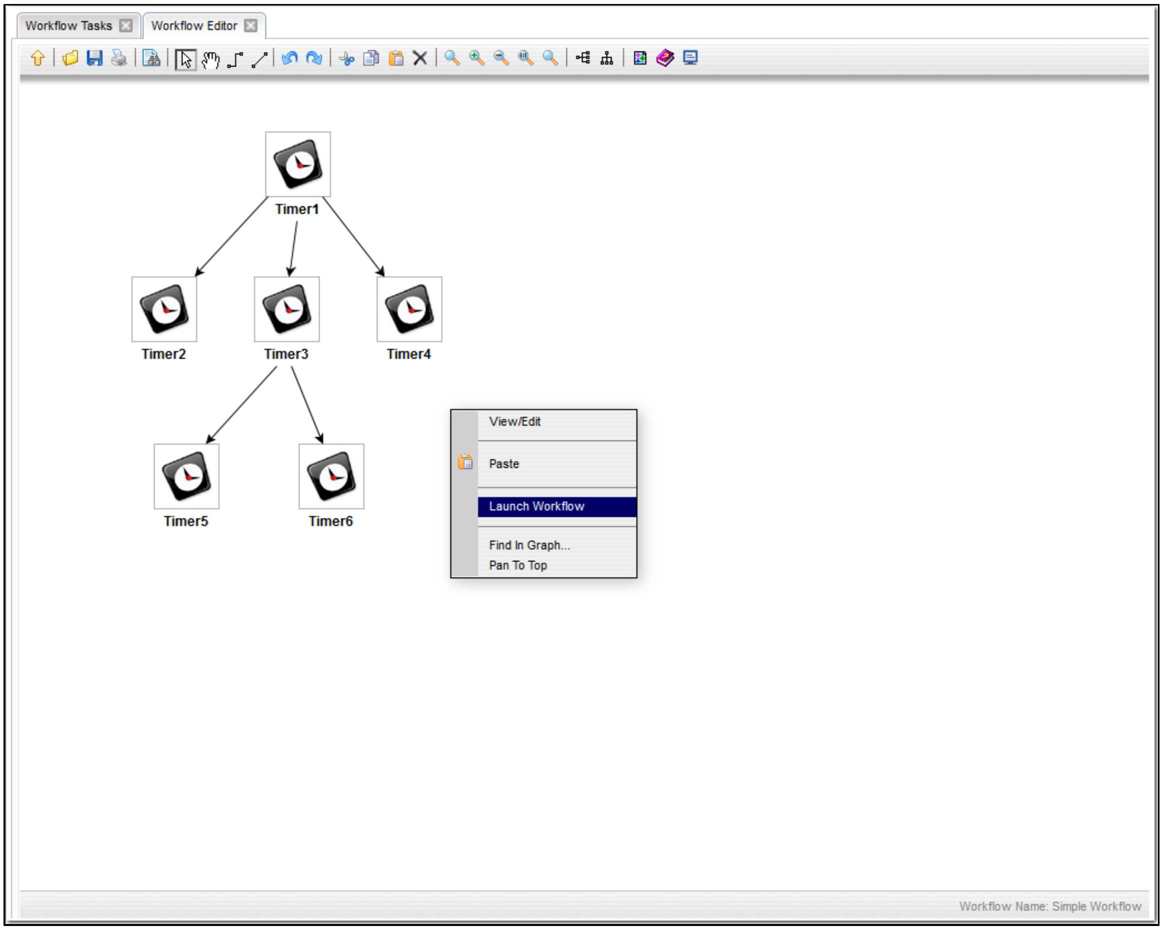
Step 9	Click a Connect Icon to connect the tasks so that Timer1 is the top-level predecessor task; Timer2, Timer3, and Timer4 are successor tasks to Timer1; and Timer5 and Timer6 are successor tasks to Timer3.  Workflow Tasks Workflow Editor Timer1 Timer2 Timer3 Timer4 Timer5 Timer6 Workflow Name: Simple Workflow

Step 10	The default condition (or dependency) for connectors is Success. That is, a successor task runs if its predecessor task goes to Success. To view the conditions for a successor task, right-click the connector between it and its predecessor task, and then click **Conditions**. The Conditions pop-up displays.  Workflow Tasks Workflow Editor Timer1 Timer2 Timer3 Timer4 Timer5 Tim OK Cancel Workflow Name: Simple Workflow Conditions ● Success ○ Failure ○ Success/Failure ○ Exit Code(s) **Note** Since a Timer task cannot go to Failure, the Failure and Success/Failure conditions are grayed out.
Step 11	Click the **Cancel** button on the Conditions pop-up, and then click the Save icon in the Workflow Editor task bar to save the Workflow.

Running the Workflow

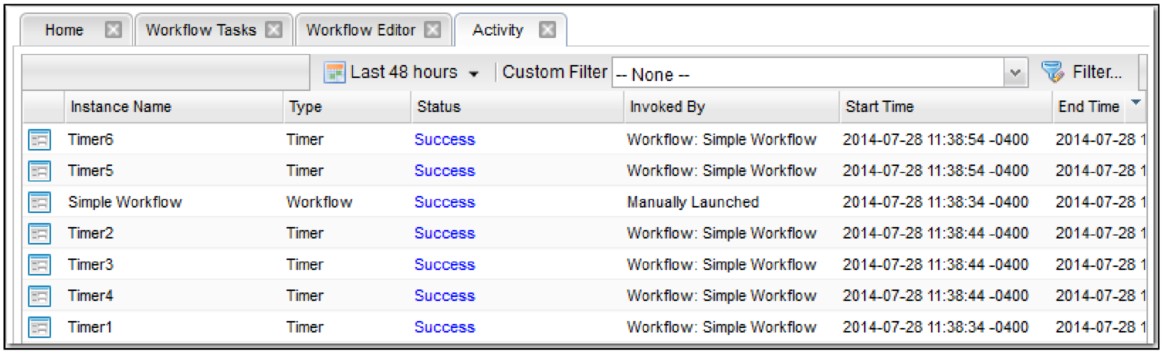
Now we will manually launch the Workflow and view it from the Activity Monitor.

Step 1 Right-click anywhere in the Workflow Editor canvas and, on the pop-up menu that displays, click **Launch Workflow**.



Workflow Name: Simple Workflow

Step 2 From the **Automation Center** navigation pane, select **Task Instances > Activity**. You will see six task instances: the Simple Workflow task, and the six Timer tasks.



Last 48 hours | Custom Filter -- None --

Instance Name	Type	Status	Invoked By	Start Time	End Time
Timer6	Timer	Success	Workflow: Simple Workflow	2014-07-28 11:38:54 -0400	2014-07-28 1
Timer5	Timer	Success	Workflow: Simple Workflow	2014-07-28 11:38:54 -0400	2014-07-28 1
Simple Workflow	Workflow	Success	Manually Launched	2014-07-28 11:38:34 -0400	2014-07-28 1
Timer2	Timer	Success	Workflow: Simple Workflow	2014-07-28 11:38:44 -0400	2014-07-28 1
Timer3	Timer	Success	Workflow: Simple Workflow	2014-07-28 11:38:44 -0400	2014-07-28 1
Timer4	Timer	Success	Workflow: Simple Workflow	2014-07-28 11:38:44 -0400	2014-07-28 1
Timer1	Timer	Success	Workflow: Simple Workflow	2014-07-28 11:38:34 -0400	2014-07-28 1

For additional information, see:

- Saving, Updating, Deleting, and Copying Records
- Creating Workflows

Tutorial - Running a Workflow with a Conditional Path

Introduction

In this exercise, we will create a short workflow of SQL tasks. We will begin with a two-minute Timer task so that we will have enough time to see what the Workflow looks like on the Activity Monitor when we launch it. We will also create a conditional path, as follows:

- The Workflow runs seven days a week and creates a new database table. If that is successful, additional SQL tasks run that insert a value, select a count, and delete a value. Each subsequent task runs if the previous is successful.
- If the first (table creation) task fails, the Workflow goes to a Manual task instead of the regular flow. This is the conditional path. The Manual task creates a pause in the Workflow and sends an Email Notification. A user is expected to check the database and fix the problem that caused the first task to fail. If the Manual task is set to a Complete status, it goes to Success and the Workflow then returns to the remaining SQL tasks. While the Manual task remains in the Action Required status, the successor tasks have a Waiting status.

We will also add an Email Notification and a Note to this Workflow.

Prerequisite

Since we are using SQL tasks in this exercise, you will first need to create a SQL Database Connection.

Create a Timer Task

We will add a Timer task at the beginning of our Workflow so that we will have a chance to view it when Opswise Controller loads it into the Activity Monitor.

Step 1	From the Automation Center navigation pane, select **Tasks > Timer Tasks**. The Timer Tasks list displays.
Step 2	Click **New** to display an empty Timer Task Details and enter / select the following values: • **Task Name** = Two Minute Timer • **Time in Seconds** = 120
Step 3	Click the **Save** button.

Create SQL Tasks

In this exercise, we will create SQL tasks that execute the following SQL commands:

- Create a new table in the database.
- Insert a value into the table.
- Select a count value from the table.
- Delete the value from the table.

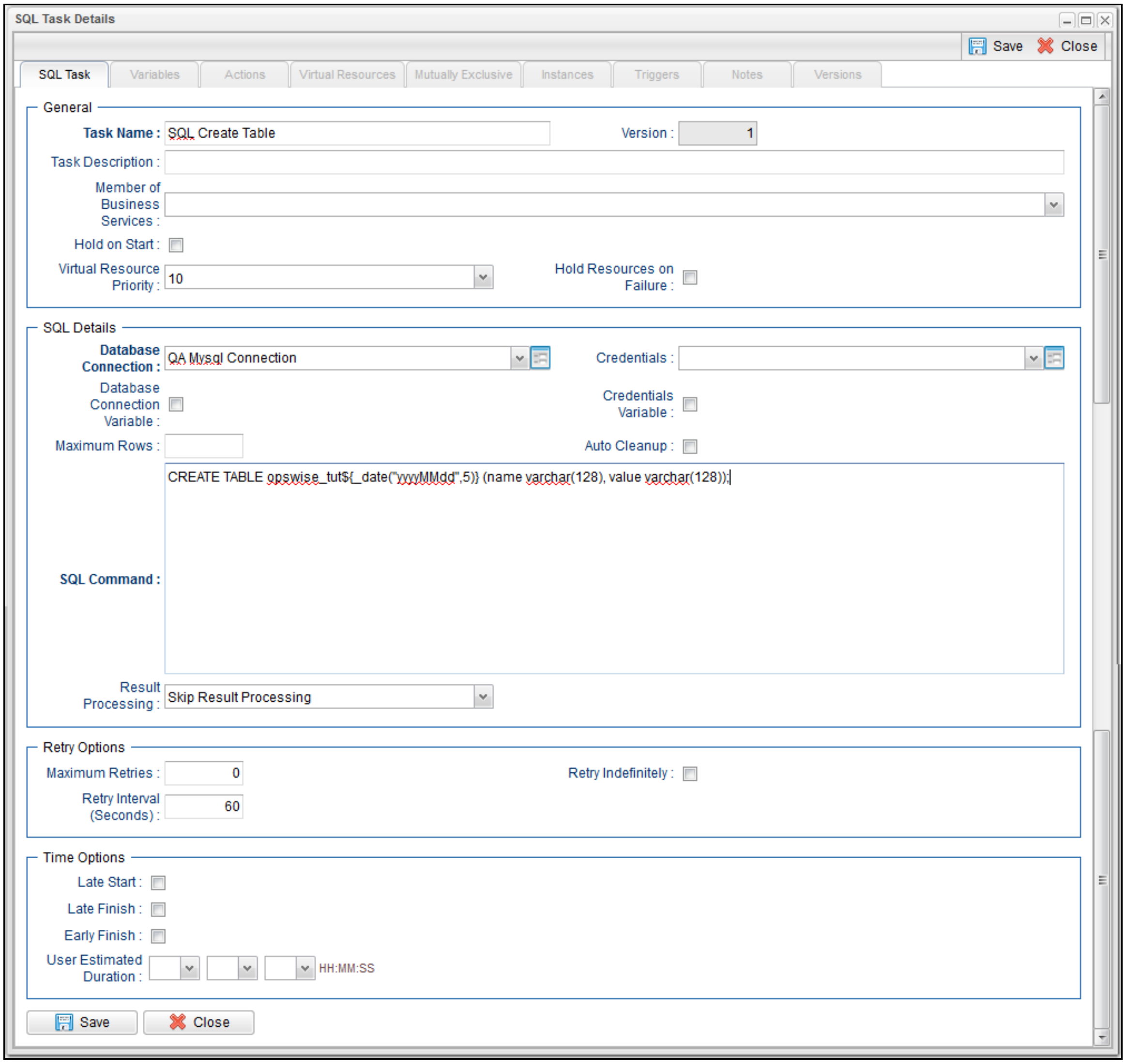
Perform the following steps to create the SQL tasks:

Step 1	From the **Automation Center** navigation pane, select **Tasks > SQL Tasks**. The SQL Tasks list displays.

Step 2 Click **New** to display an empty SQL Task Details and enter / select the following values:

- **Task Name** = SQL Create Table
- **Database Connection** = (the database connection you created as a prerequisite)
- **SQL Command** = CREATE TABLE opswise_tut${_date("yyyyMMdd",5)} (name varchar(128), value varchar(128));

Step 3 Click the **Save** button.



General

Task Name : SQL Create Table
Version : 1
Task Description :
Member of Business Services :
Hold on Start : □
Virtual Resource Priority : 10
Hold Resources on Failure : □

SQL Details

Database Connection : QA Mysql Connection
Credentials :
Database Connection Variable : □
Credentials Variable : □
Maximum Rows :
Auto Cleanup : □
SQL Command : CREATE TABLE opswise_tut${_date("yyyyMMdd",5)} (name varchar(128), value varchar(128));
Result Processing : Skip Result Processing

Retry Options

Maximum Retries : 0
Retry Indefinitely : □
Retry Interval (Seconds) : 60

Time Options

Late Start : □
Late Finish : □
Early Finish : □
User Estimated Duration : HH:MM:SS

Step 4 Create a SQL task called **SQL Insert Value** with this value:

- **SQL Command** = INSERT INTO opswise_tut${_date("yyyyMMdd",5)} (name, value) values ('A', 'F'), ('B', 'S'), ('C', 'F');

Step 5 Create a SQL task called **SQL Select Count** with this value:

- **SQL Command** = SELECT count (*) as count FROM opswise_tut${_date("yyyyMMdd",5)} WHERE value = 'F';

Step 6 Create a SQL task called **SQL Delete** with this value:

- **SQL Command** = DELETE FROM opswise_tut${_date("yyyyMMdd",5)};

Create a Manual Task

A Manual task is used within a Workflow to create a pause in processing, during which the user must perform some task. When the user task is complete, the user sets the Manual task to a completed state and processing continues.

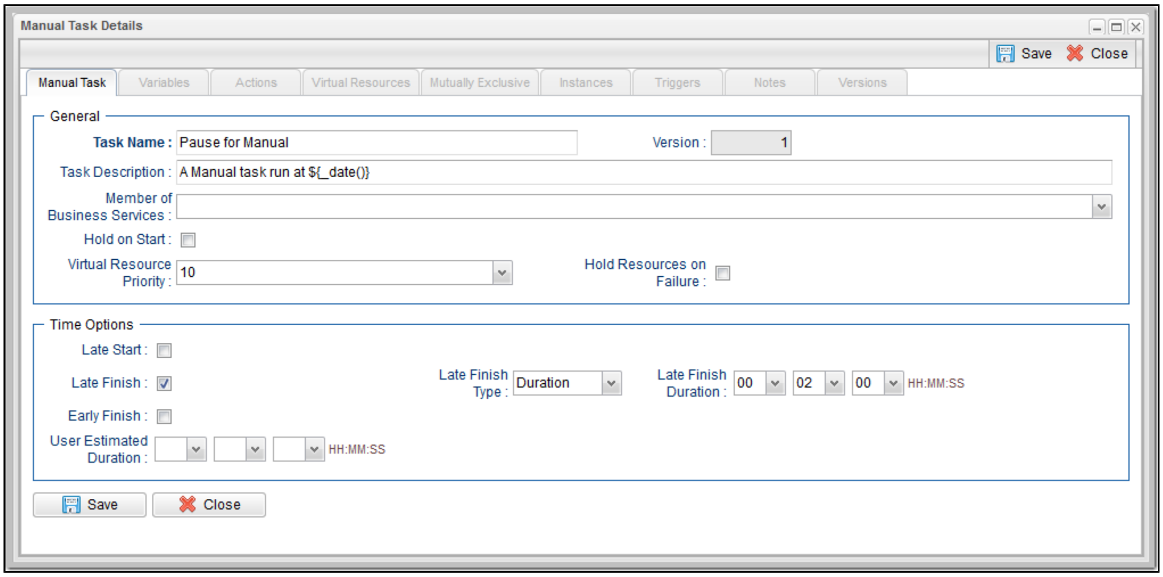
For our Manual task, we are also going to request a warning if the user takes too long to complete it.

Step 1 From the **Automation Center** navigation pane, select **Tasks > Manual Tasks** and click **New**.

Step 2 In the Manual Task Details, enter / select the following values:

- **Task Name** = Pause for Manual
- **Task Description** = A Manual task run at `${_date()}` (a variable that indicates the date and time the Manual task launches)
- **Late Finish** = enabled
- **Late Finish Type** = Duration
- **Late Finish Duration** = Hours 00 02 00 (2 minutes)

Step 3 Click the **Save** button.



Manual Task Details

General

Task Name : Pause for Manual

Version : 1

Task Description : A Manual task run at ${_date()}

Member of Business Services :

Hold on Start : ☐

Virtual Resource Priority : 10

Hold Resources on Failure : ☐

Time Options

Late Start : ☐

Late Finish : ☑

Late Finish Type : Duration

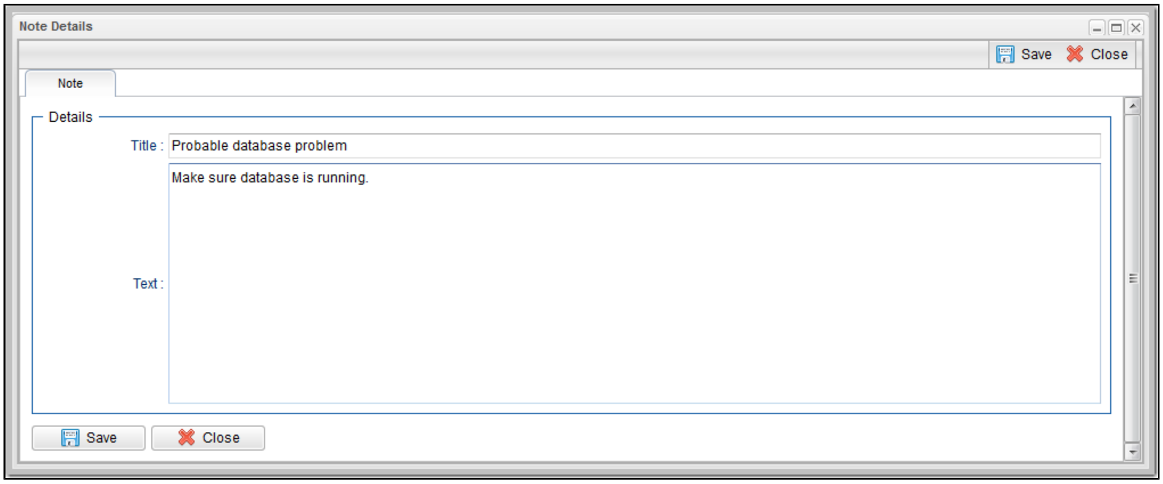
Late Finish Duration : 00 02 00 HH:MM:SS

Early Finish : ☐

User Estimated Duration : HH:MM:SS

Step 4 Add a Note:

1. Click the **Notes** tab and then click **New** to display Note Details.
2. Enter the following values:
   - **Title** = Probable database problem
   - **Text** = Make sure database is running.
3. Click **Save**.

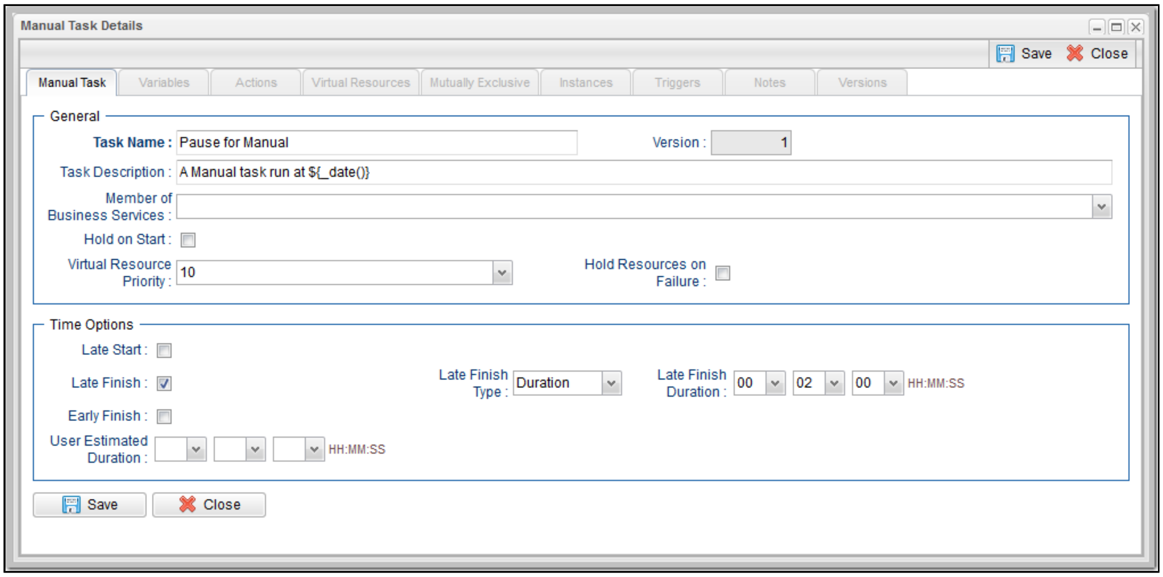


Note Details

Details

Title : Probable database problem

Text : Make sure database is running.

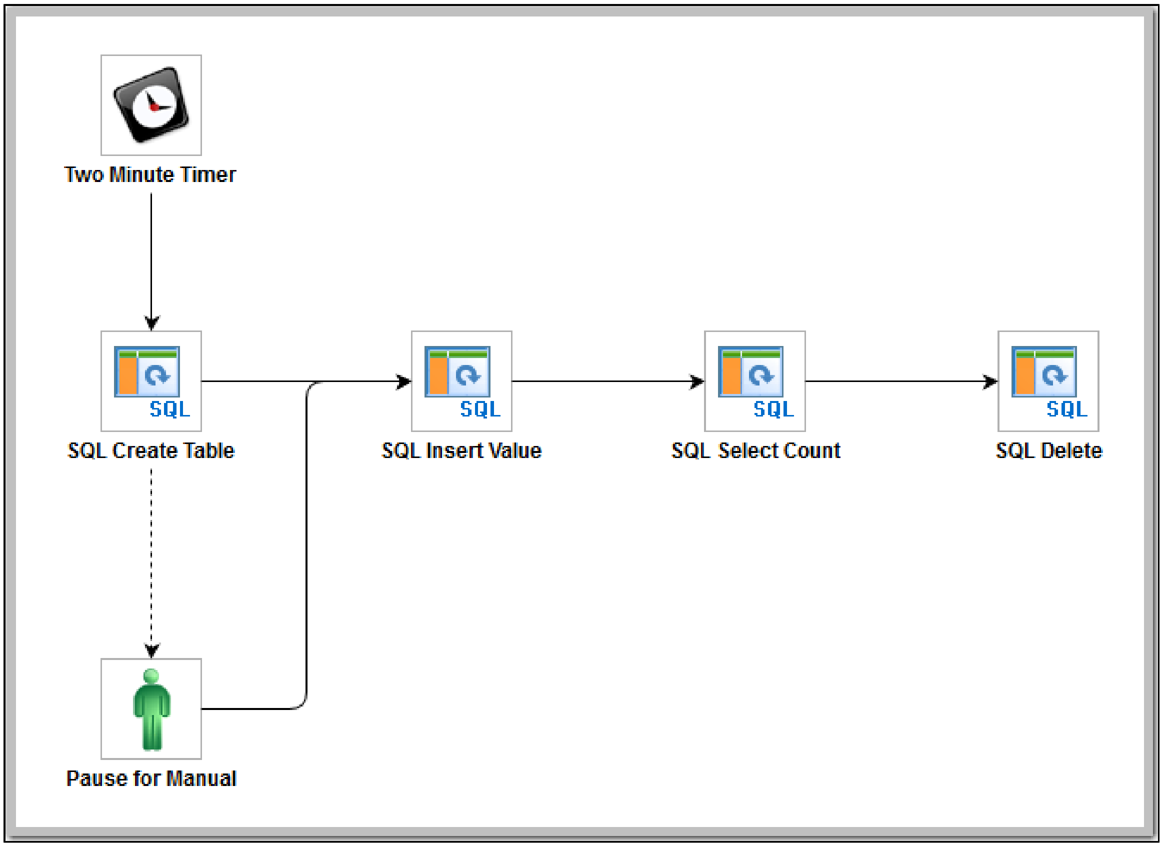
Step 5	Add an Email Notification: 1. Click the **Actions** tab. 2. Click **Email Notification** in the list of Action types. 3. Click the **New** button to display Email Notification Details for a new Email Notification. 4. Enter / select thew following values: - **Status** = ACTION REQUIRED - **Email Connection** = (the Email Connection you created earlier) - **To** = (your Email address) - **Subject** = Issue with Workflow - **Body** = ${_date} workflow failure; notification triggered by ${ops_task_name}
Step 6	Click the **Save** button.  Manual Task Details Save Close Manual Task Variables Actions Virtual Resources Mutually Exclusive Instances Triggers Notes Versions General Task Name : Pause for Manual Version : 1 Task Description : A Manual task run at ${_date()} Member of Business Services : Hold on Start : □ Virtual Resource Priority : 10 Hold Resources on Failure : □ Time Options Late Start : □ Late Finish : ☑ Late Finish Type : Duration Late Finish Duration : 00 02 00 HH:MM:SS Early Finish : □ User Estimated Duration : HH:MM:SS

Create a Workflow

Create a Workflow containing the Timer, SQL, and Manual tasks that you just created.

Step 1	From the **Automation Center** navigation pane, select **Tasks > Workflow Tasks** and click **New**.
Step 2	In the Workflow Task Details, enter the following value: - **Task Name** = SQL Workflow
Step 3	Click the **Save** button, right-click SQL Workflow on the Workflow Tasks list, and then click **Edit Workflow** on the Action menu.
Step 4	In the Workflow Editor, use the Add Task tool to drag the tasks you just created onto the canvas.
Step 5	Organize the tasks and create connections as shown in the following illustration. The Success connectors tell the Controller that if SQL Create Table goes to Success, run Insert SQL Value and the other SQL tasks.
Step 6	Create a conditional path specifying that if SQL Create Table fails, the Controller should run the Pause for Manual task: 1. Right-click the connector between SQL Create Table and Pause for Manual. 2. On the pop-up menu, click **Conditions**. 3. On the **Conditions** pop-up dialog, enable **Failure** and click the **OK** button. Note that the connector is a dotted line, which indicates a Failure connection.

Step 7 On the Workflow Editor toolbar, click the **Save** icon.

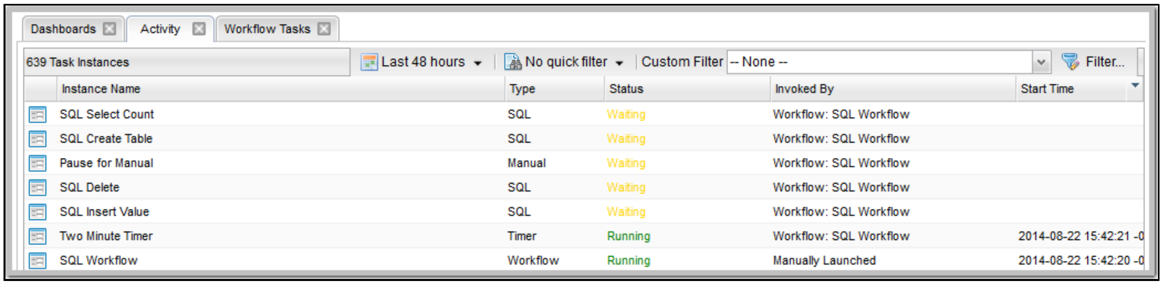


Run the Workflow to Success

We are going to launch our Workflow and view it from two different perspectives: from the Activity Monitor and the Workflow Monitor.

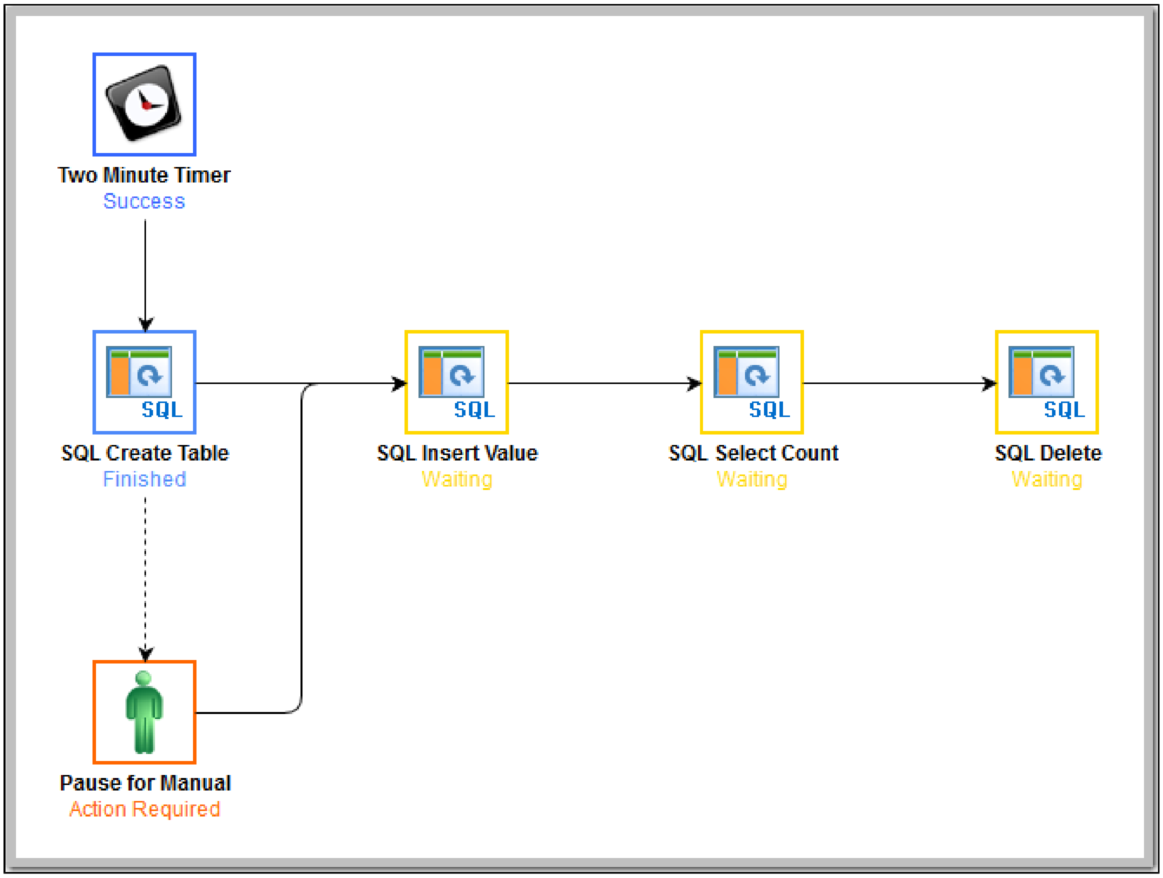
Step 1 Launch the workflow manually.

Step 2 Display the Activity Monitor. Because the Two Minute Timer task is still running, your display should look similar to this:

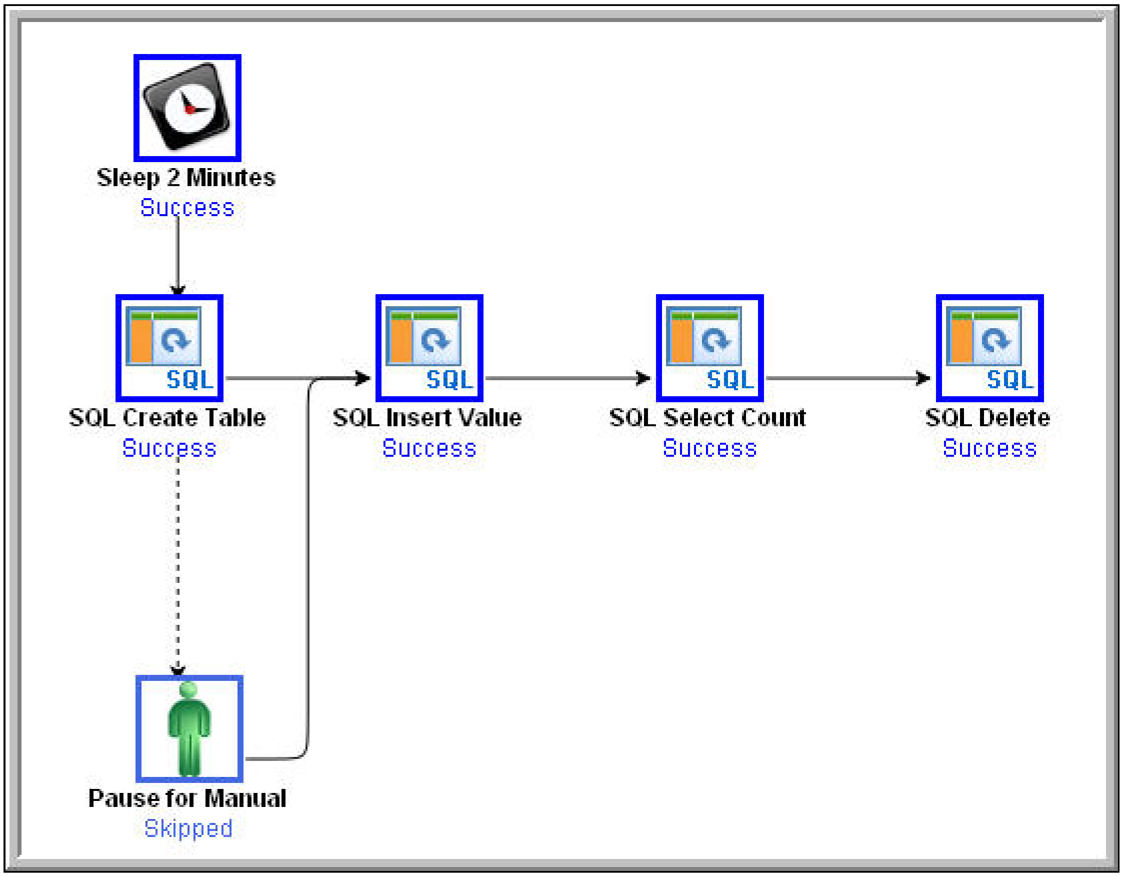


Instance Name	Type	Status	Invoked By	Start Time
SQL Select Count	SQL	Waiting	Workflow: SQL Workflow	
SQL Create Table	SQL	Waiting	Workflow: SQL Workflow	
Pause for Manual	Manual	Waiting	Workflow: SQL Workflow	
SQL Delete	SQL	Waiting	Workflow: SQL Workflow	
SQL Insert Value	SQL	Waiting	Workflow: SQL Workflow	
Two Minute Timer	Timer	Running	Workflow: SQL Workflow	2014-08-22 15:42:21 -0
SQL Workflow	Workflow	Running	Manually Launched	2014-08-22 15:42:20 -0

Step 3 Right-click SQL Workflow on the Activity Monitor list to display an Action menu and select **Workflow Task Commands > View Workflow**. The Workflow Monitor opens and shows progress on the task. The Workflow Monitor updates automatically with each status change.



When the Timer task finishes, the SQL tasks execute. All tasks go to Success and the workflow goes to Success. The only task that did not run is the conditional task, Pause for Manual.



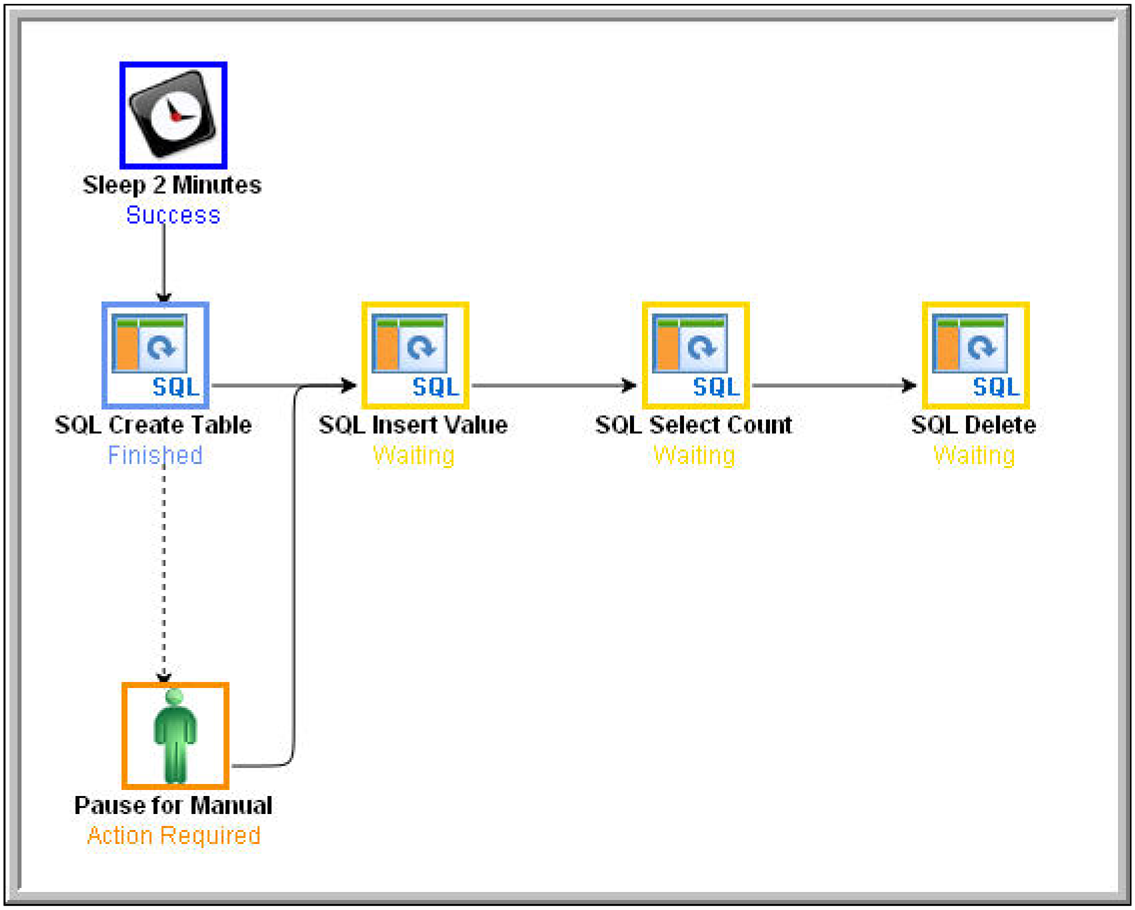
Run the Workflow Down the Conditional Path

Recall that we inserted a date variable into the INSERT TABLE command. Thus, you can run this workflow every day and get a new table name each day, based on the date. For the purposes of our exercise, assuming you are performing it on the same day you did the previous exercise, the SQL Create Table task will fail this time because the table already exists.

Step 1	Return to the Bigger Workflow task and launch it again.

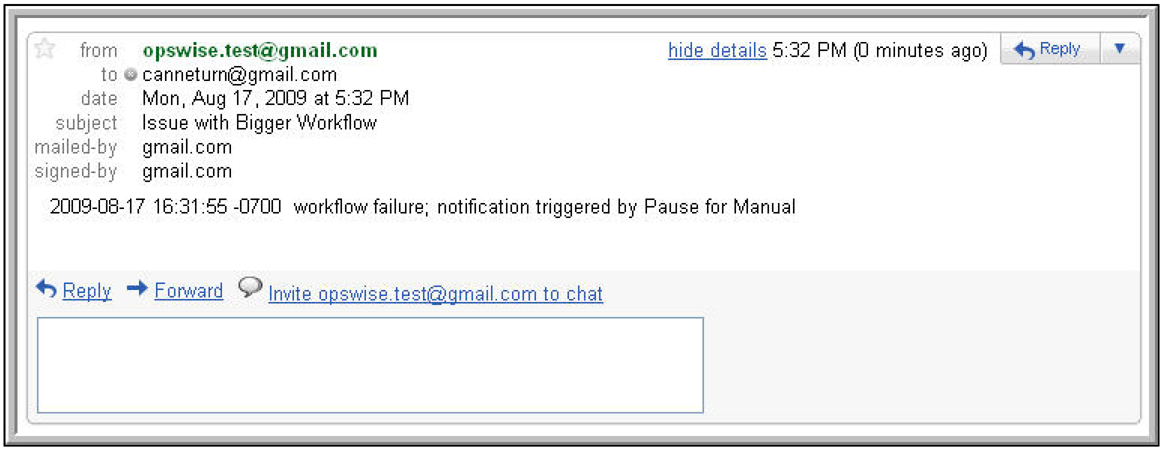
Step 2

From the Activity Monitor, click the Workflow name to view it from the canvas. This time, the workflow goes down the conditional path. N that when you set up a conditional path, what would normally be a Failure status for the SQL Create Table task becomes a status of Finished. If you ran this task as a standalone task or without the conditional path, its status would say Failed.



Step 3

When the Pause for Manual task launches, it generates the Email Notification we added earlier.



from opswise.test@gmail.com
to canneturn@gmail.com
date Mon, Aug 17, 2009 at 5:32 PM
subject Issue with Bigger Workflow
mailed-by gmail.com
signed-by gmail.com

hide details 5:32 PM (0 minutes ago)

2009-08-17 16:31:55 -0700 workflow failure; notification triggered by Pause for Manual

Step 4

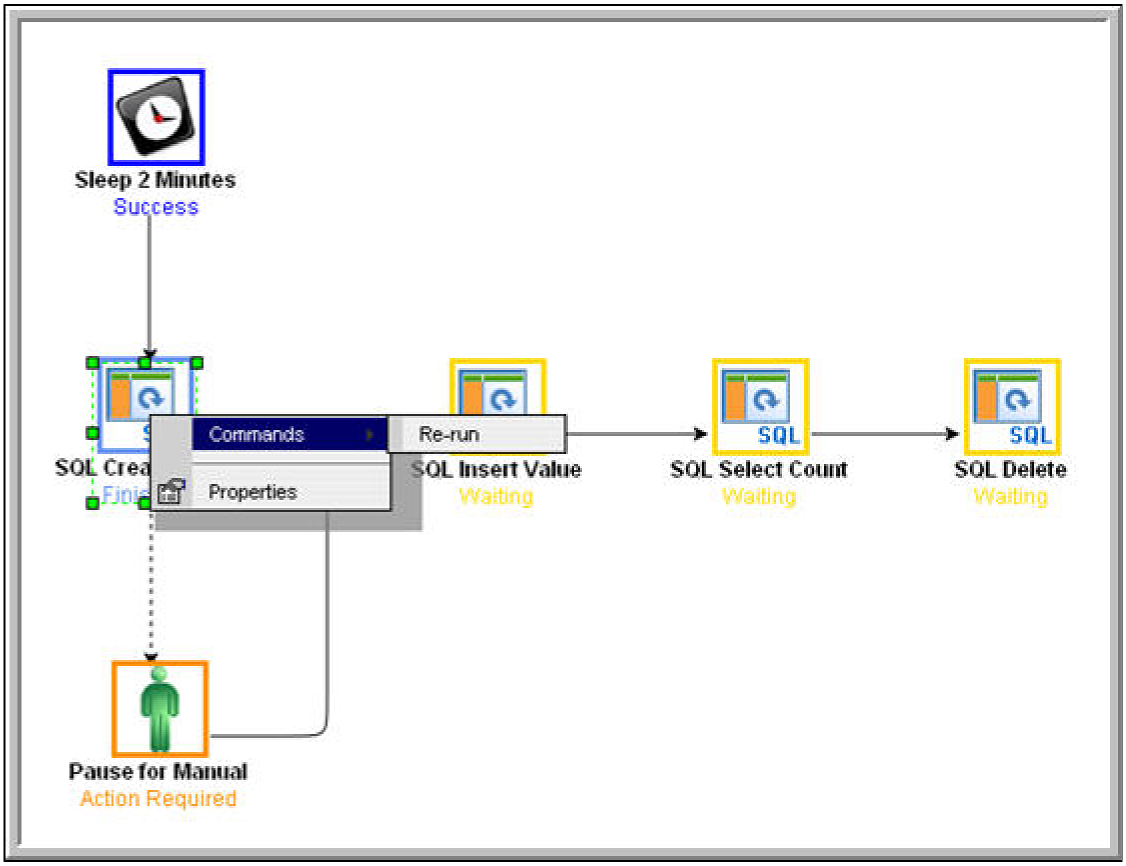
The user receives the email, which provides the name of the task that generated it (Pause for Manual in our case). The user might also I running a special Activity Monitor that displays only Manual tasks in the Action Required status. According to our scenario, the user oper the Pause for Manual task and checks the Notes to find out what action he or she is supposed to take. In our case, the Notes say to che the database and bring it back up.

Step 5

At this point, the workflow processing could continue in either of two ways:

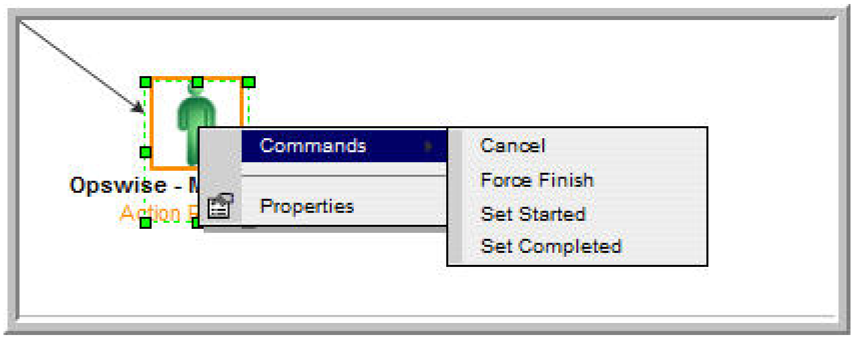
1. Re-run the task that failed and send the workflow down the success path.
2. Set the Pause for Manual task to Completed status and continue the workflow from there.
   We will try both methods.

3. Re-run the failed task; right-click the task and select **Commands > Re-run**. In a real processing situation, this is the method you would use because you need to create the table before you can continue.
    a. Right-click the task that failed and select **Commands > Re-run**.

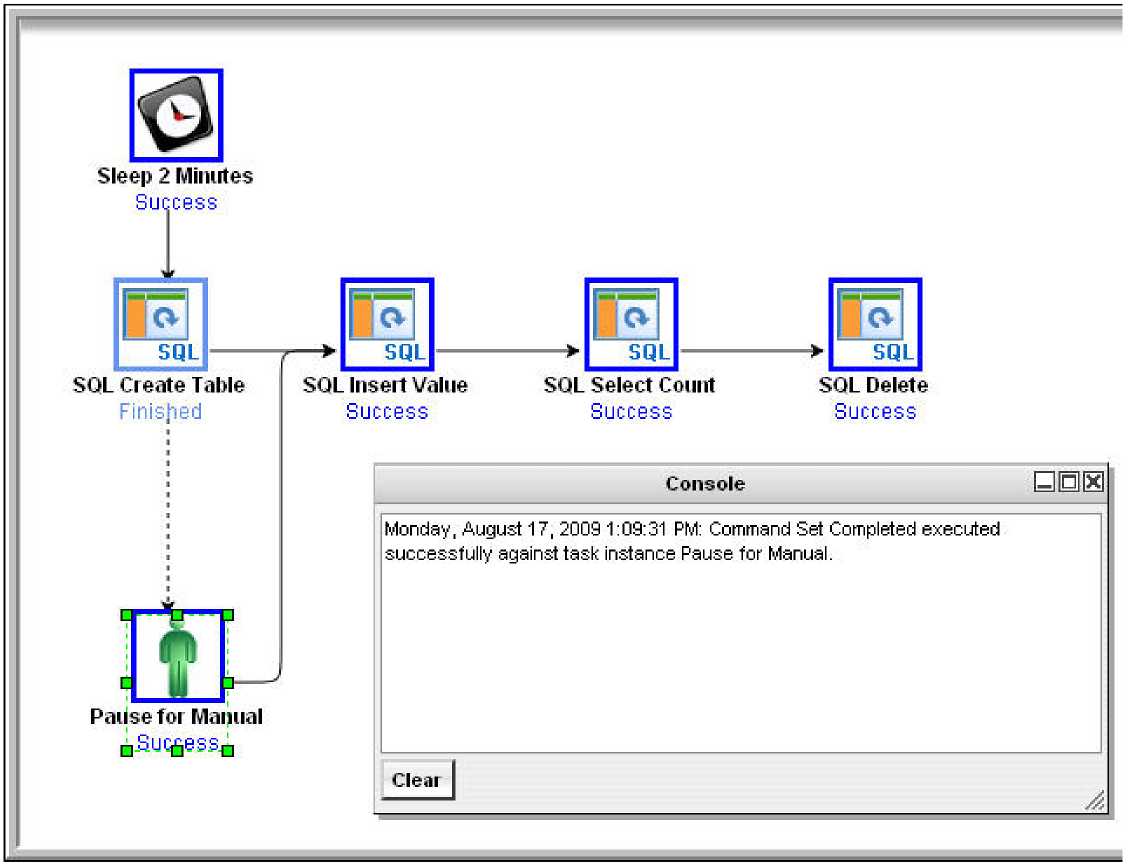


Note that we are still on the same day so the task fails again because the table already exists. In a real processing situation, the task would go to Success and the subsequent tasks would run as expected.

4. Set the Manual task to Complete status. For the purposes of our exercise, we will get the workflow going again by setting the Manual task to complete.
   a. Right-click the Manual task.
   b. Select **Commands > Set Completed**.



The Manual task goes to Success and the rest of the workflow runs.



Monday, August 17, 2009 1:09:31 PM: Command Set Completed executed successfully against task instance Pause for Manual.

   c. Because we set a two-minute Late Finish flag on our Manual task and we (presumably) took more than two minutes to complete it, the Manual task has been flagged as a late finish. To view the flag, go to the Activity Monitor and click the Manual task name. In the task instance Details, an enabled Finished Late field now displays, and the Duration field indicates the duration of the task.

For additional information, see:

- Activity Monitor
- Monitoring Workflows
- Database Connections
- SQL Task
- Manual Task
- Email Notification Actions

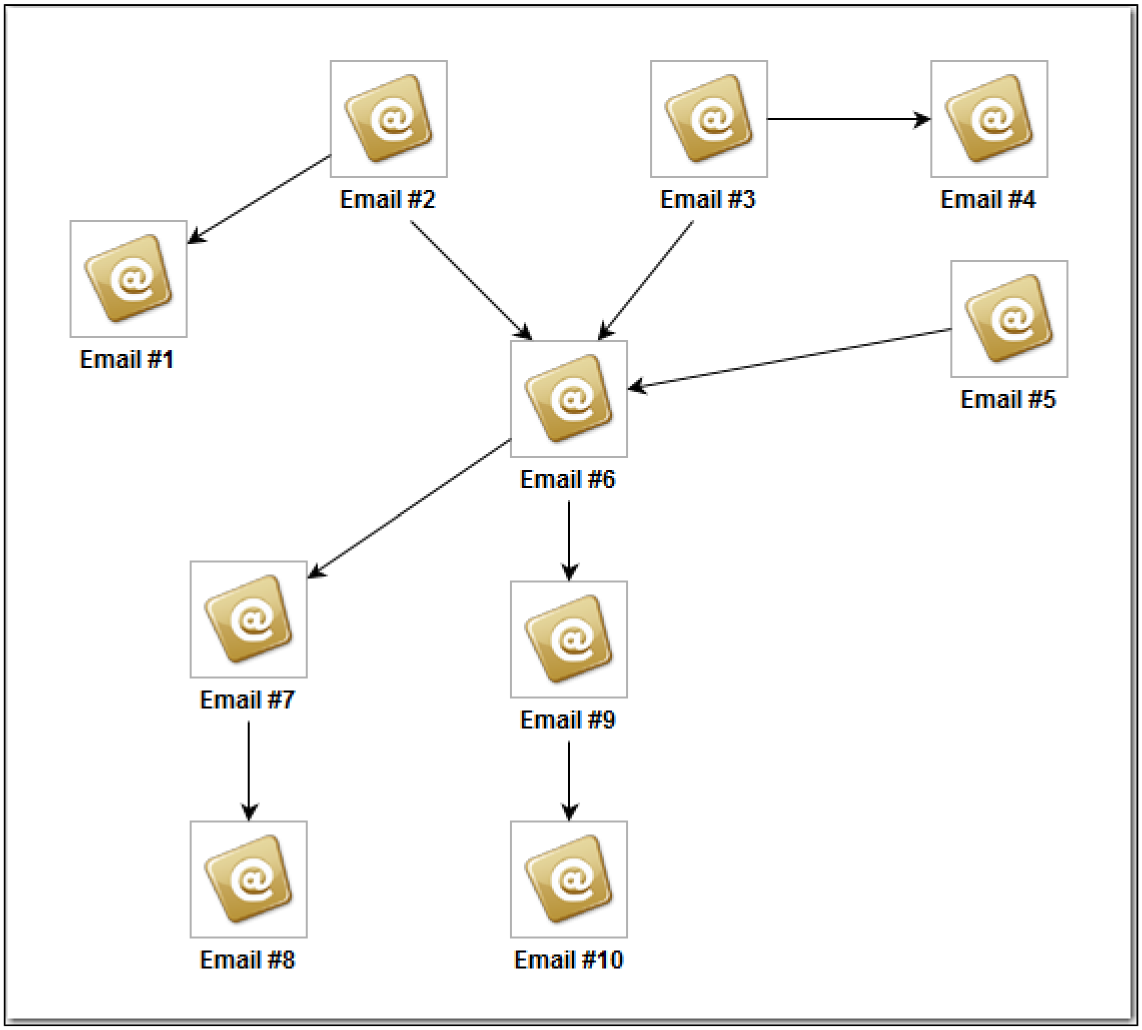
- Creating Notes
- Creating Conditional Paths
- Adding Skip/Run Criteria

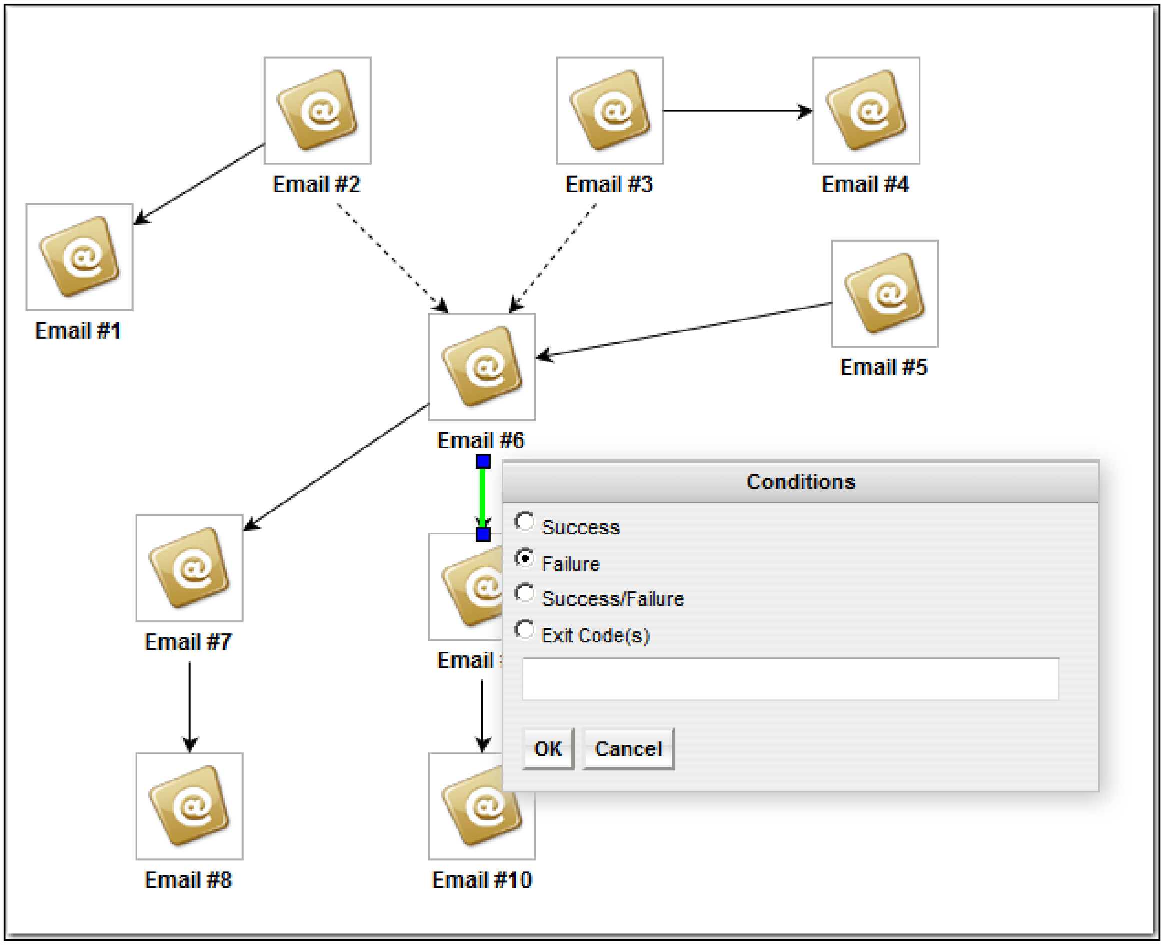
Tutorial - Running a Workflow with Multiple Conditional Paths

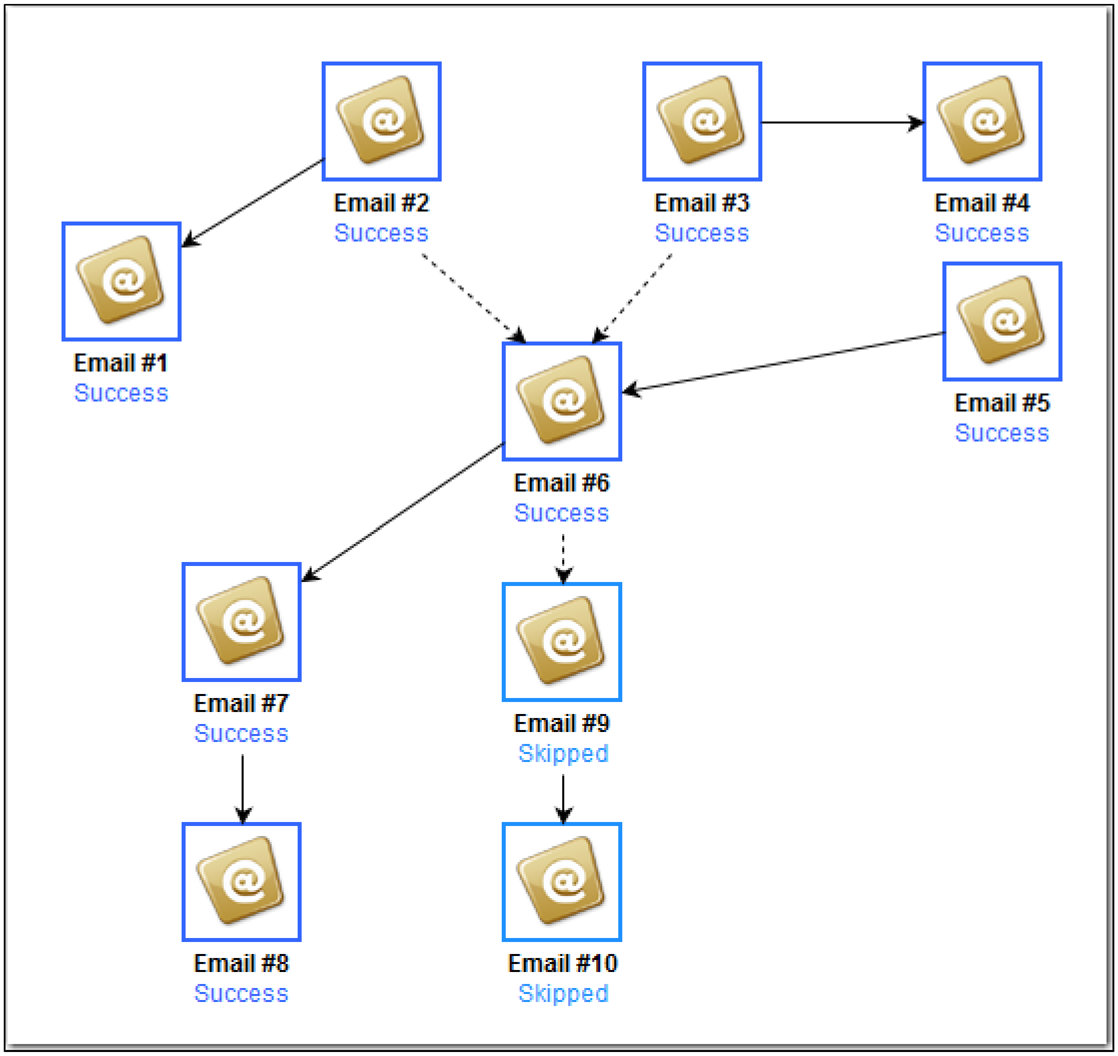
In this tutorial, we will create a Workflow containing tasks with multiple predecessors and multiple successors, and specify different conditional paths for those tasks.

The Workflow will show that:

- A successor task with multiple predecessor tasks needs only one of the predecessor tasks to be Successful in order to run.
- Tasks are skipped if they are in conditional paths not taken.

Step 1	From the Automation Center navigation pane, select **Tasks > Workflow Tasks** and click **New**.
Step 2	In the Workflow Details, name the Workflow **Multiple Paths** and click the **Save** button.
Step 3	Click the **Edit Workflow** button to display the Workflow Editor.
Step 4	Add 10 tasks to the Workflow and specify connections for them, as shown below. (In this example, Email tasks have been added, but you can add any type of task except Timer tasks, since they have only one type of Conditional path: Success.) By default, all connections define a Successful condition; if the predecessor task runs to Success, the successor task will run.  Email #2 Email #3 Email #4 Email #1 Email #5 Email #6 Email #7 Email #9 Email #8 Email #10

Step 5	Create a Failure condition between tasks #2 and #6, #3 and #6, and #6 and #9, as shown below: 1. Right-click the connection between them,. 2. Click **Conditions** on the pop-up menu. 3. Select **Failure**. 4. Click **OK**. Connections with Failure conditions displays as dotted lines.  Email #2 Email #3 Email #4 Email #1 Email #5 Email #6 Email #7 Email Email #8 Email #10 OK Cancel Conditions ○ Success ● Failure ○ Success/Failure ○ Exit Code(s)
Step 8	Launch the workflow.
Step 9	In the **Automation Center** navigation pane, select **Task Instances > Activity** to display the Activity Monitor.

Step 10	From the list of Task Instances, click **Multiple Paths**. The Workflow Monitor for that Workflow displays.  Email #1 Success Email #2 Success Email #3 Success Email #4 Success Email #5 Success Email #6 Success Email #7 Success Email #9 Skipped Email #8 Success Email #10 Skipped The Workflow Monitor shows that task #6 ran even though the conditions for two of its predecessor tasks (#2 and #3) specified that it was to run only if those two tasks failed, because the condition for its #5 predecessor task specified that it was to run if #5 ran successfully, which it did. It also shows that tasks #9 and #10 were Skipped because the Controller took the Success path for task #6 and ran Tasks #7 and #8.

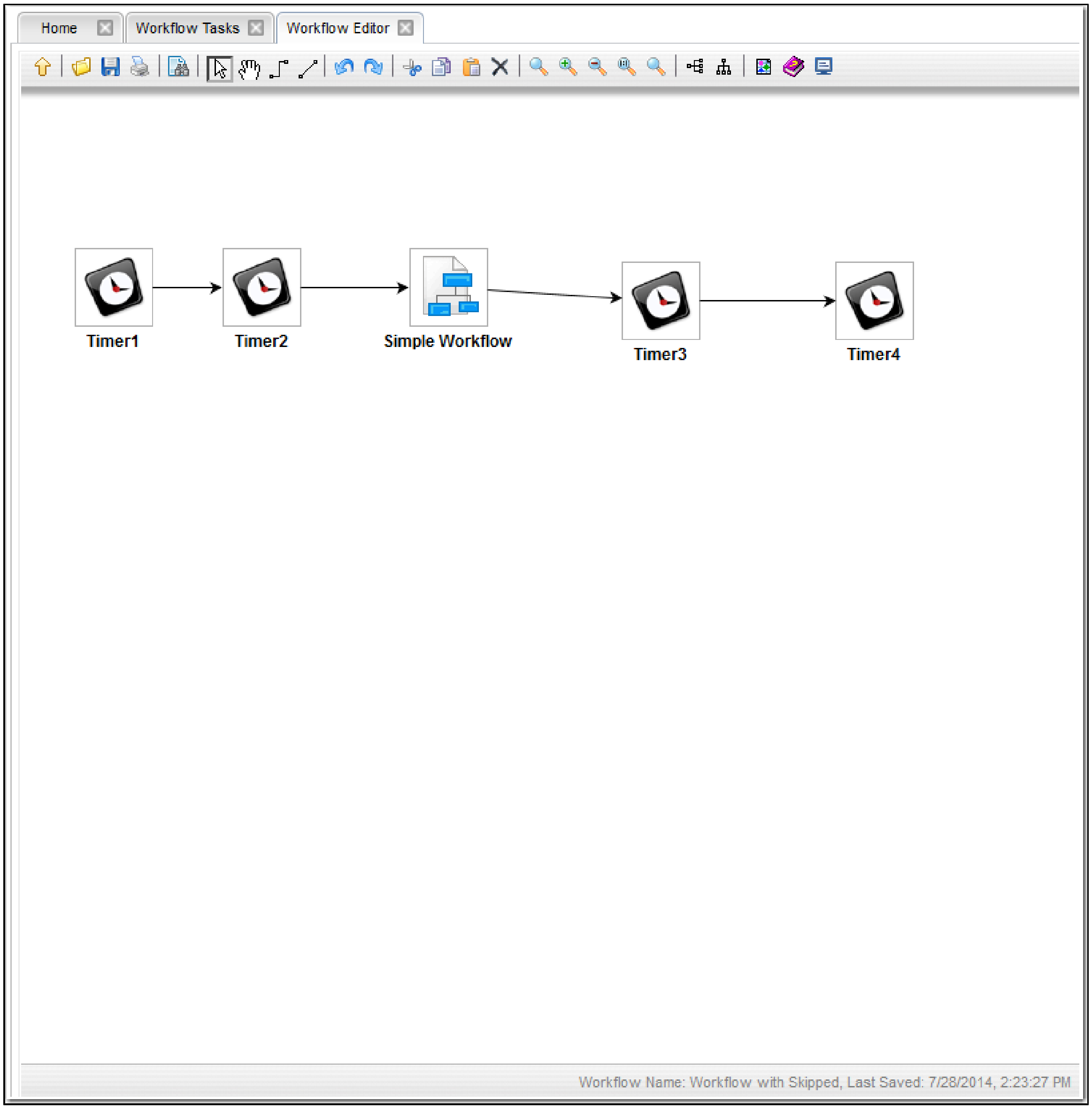
Tutorial - Running a Workflow with Skipped Criteria

Introduction

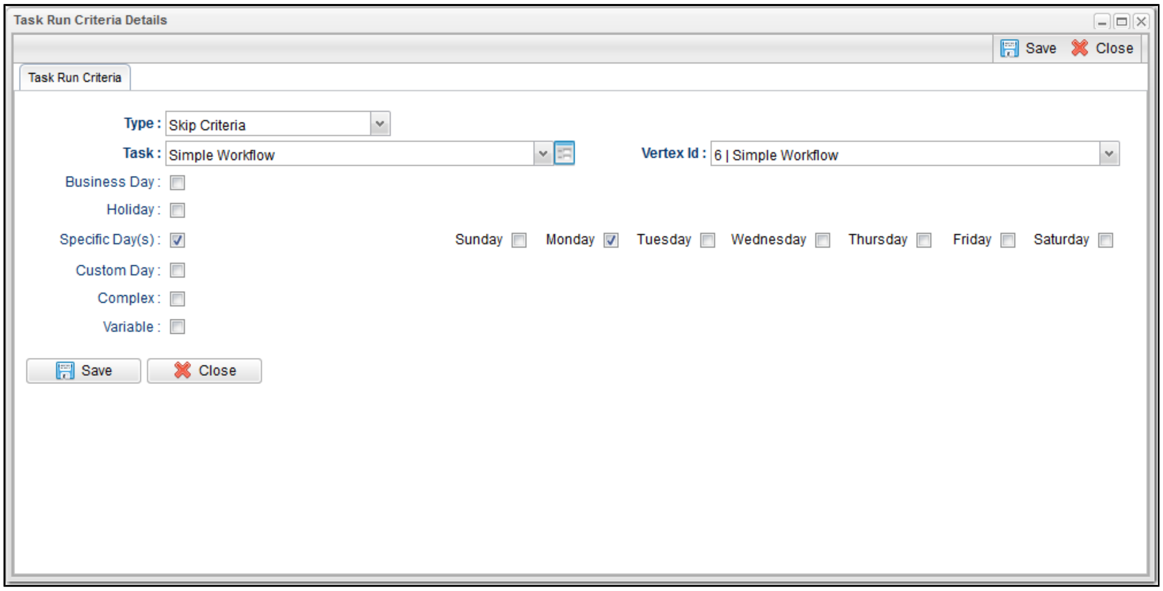
In this exercise, we will create a daily Workflow that includes a task that we want to skip on Fridays. We will also include a Workflow within a Workflow and later check the skipped status of the skipped Workflow.

Create the Daily Workflow

Step 1	Create a Workflow named **Workflow with Skipped** and add the following tasks created in the Creating a Simple Workflow tutorial: • Four Timer tasks: Timer1, Timer2, Timer3, Timer4. • One Workflow task: Simple Workflow.

Step 2	Organize the tasks in the Workflow as shown in the following illustration (using all Success conditions) and click the **Save** icon.  Home Workflow Tasks Workflow Editor Timer1 Timer2 Simple Workflow Timer3 Timer4 Workflow Name: Workflow with Skipped, Last Saved: 7/28/2014, 2:23:27 PM
Step 4	Right-click **Simple Workflow** and, on the pop-up menu, click **View/Edit Run Criteria**. The Task Run Criteria list for **Simple Workflow** displays.
Step 5	Click **New** to display Task Run Criteria Details.
Step 6	In the **Type** field, select **Skip Criteria**.
Step 7	Select **Specific Day(s)**.
Step 8	Select the current day (that is, if today is Friday, select Fri). (See Task Run Criteria Field Descriptions for more details.)

Step 9 Click **Save**.



Type : Skip Criteria

Task : Simple Workflow

Vertex Id : 6 | Simple Workflow

Business Day : ☐

Holiday : ☐

Specific Day(s) : ☑ Sunday ☐ Monday ☑ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday ☐

Custom Day : ☐

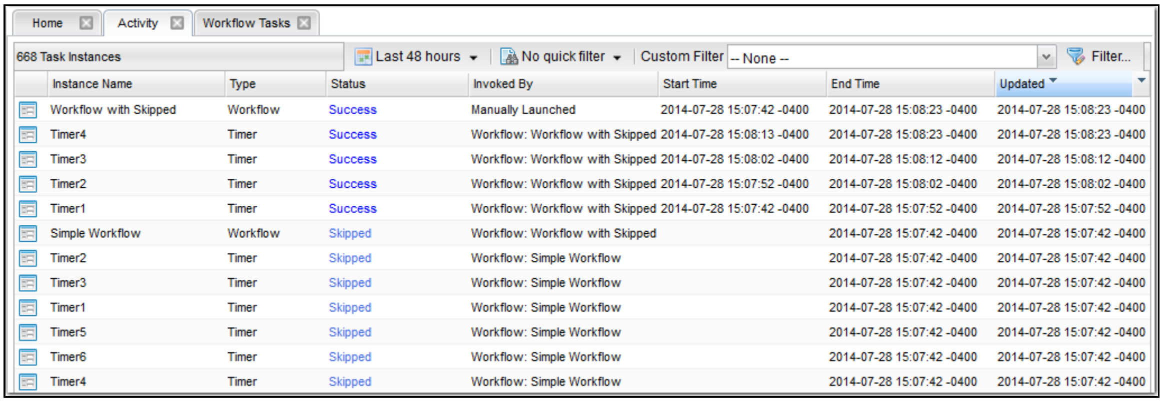
Complex : ☐

Variable : ☐

Run the Daily Workflow

Step 1 Right-click anywhere in the Workflow Editor and select **Launch Workflow**.

Step 2 Display the Activity Monitor and note that the sub-workflow (Simple Workflow) and all its sub-tasks have been skipped, as shown in the following example. Note also that this did not impact subsequent tasks, which ran as usual.



668 Task Instances

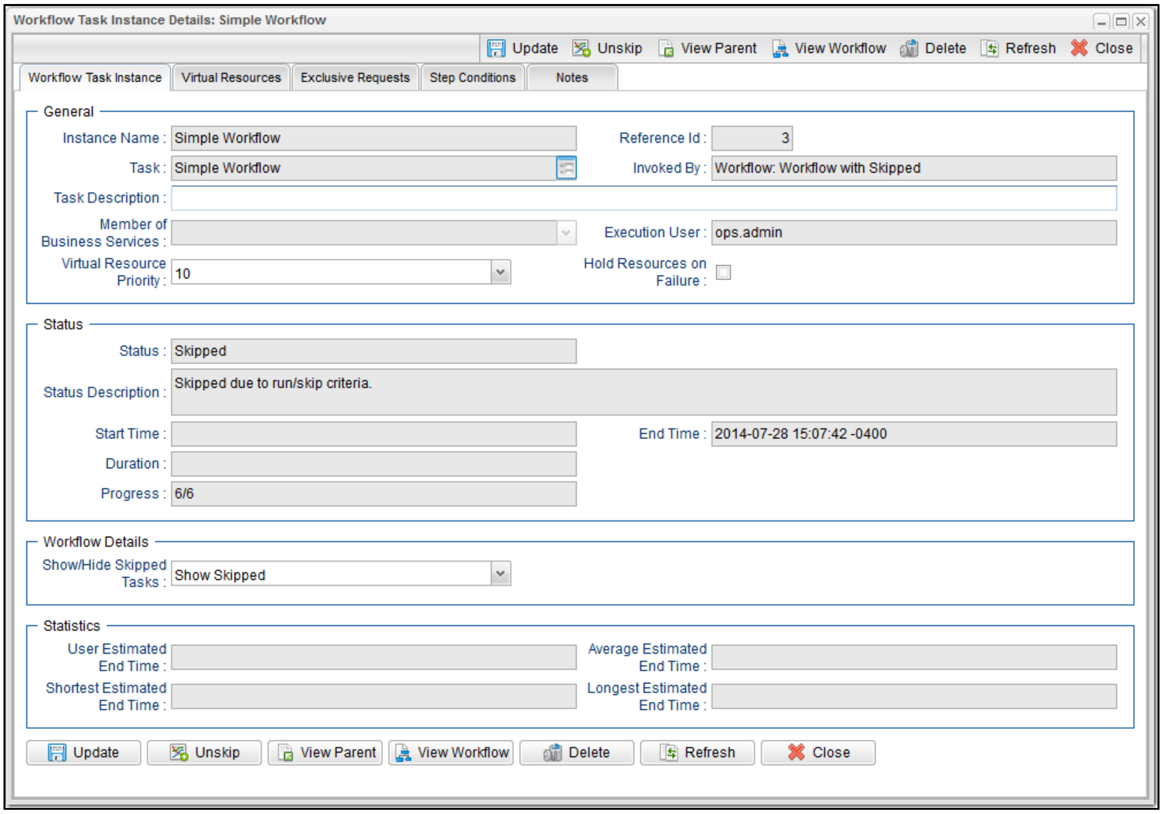
Custom Filter -- None --

Instance Name	Type	Status	Invoked By	Start Time	End Time	Updated
Workflow with Skipped	Workflow	Success	Manually Launched	2014-07-28 15:07:42 -0400	2014-07-28 15:08:23 -0400	2014-07-28 15:08:23 -0400
Timer4	Timer	Success	Workflow: Workflow with Skipped	2014-07-28 15:08:13 -0400	2014-07-28 15:08:23 -0400	2014-07-28 15:08:23 -0400
Timer3	Timer	Success	Workflow: Workflow with Skipped	2014-07-28 15:08:02 -0400	2014-07-28 15:08:12 -0400	2014-07-28 15:08:12 -0400
Timer2	Timer	Success	Workflow: Workflow with Skipped	2014-07-28 15:07:52 -0400	2014-07-28 15:08:02 -0400	2014-07-28 15:08:02 -0400
Timer1	Timer	Success	Workflow: Workflow with Skipped	2014-07-28 15:07:42 -0400	2014-07-28 15:07:52 -0400	2014-07-28 15:07:52 -0400
Simple Workflow	Workflow	Skipped	Workflow: Workflow with Skipped		2014-07-28 15:07:42 -0400	2014-07-28 15:07:42 -0400
Timer2	Timer	Skipped	Workflow: Simple Workflow		2014-07-28 15:07:42 -0400	2014-07-28 15:07:42 -0400
Timer3	Timer	Skipped	Workflow: Simple Workflow		2014-07-28 15:07:42 -0400	2014-07-28 15:07:42 -0400
Timer1	Timer	Skipped	Workflow: Simple Workflow		2014-07-28 15:07:42 -0400	2014-07-28 15:07:42 -0400
Timer5	Timer	Skipped	Workflow: Simple Workflow		2014-07-28 15:07:42 -0400	2014-07-28 15:07:42 -0400
Timer6	Timer	Skipped	Workflow: Simple Workflow		2014-07-28 15:07:42 -0400	2014-07-28 15:07:42 -0400
Timer4	Timer	Skipped	Workflow: Simple Workflow		2014-07-28 15:07:42 -0400	2014-07-28 15:07:42 -0400

Check the Skipped Workflow's History

You can view a task instance Details to find out why it has a status of Skipped. On the Activity Monitor, click the Details icon in the first column for any task instance to display its task instance Details.

For example:



Workflow Task Instance Details: Simple Workflow

General

Instance Name : Simple Workflow
Reference Id : 3
Task : Simple Workflow
Invoked By : Workflow: Workflow with Skipped
Task Description :
Member of Business Services :
Execution User : ops.admin
Virtual Resource Priority : 10
Hold Resources on Failure : □

Status

Status : Skipped
Status Description : Skipped due to run/skip criteria.
Start Time :
End Time : 2014-07-28 15:07:42 -0400
Duration :
Progress : 6/6

Workflow Details

Show/Hide Skipped Tasks : Show Skipped

Statistics

User Estimated End Time :
Average Estimated End Time :
Shortest Estimated End Time :
Longest Estimated End Time :

Note that the Status Description field indicates that **Simple Workflow** was skipped due to run/skip criteria. |

For additional information, see:

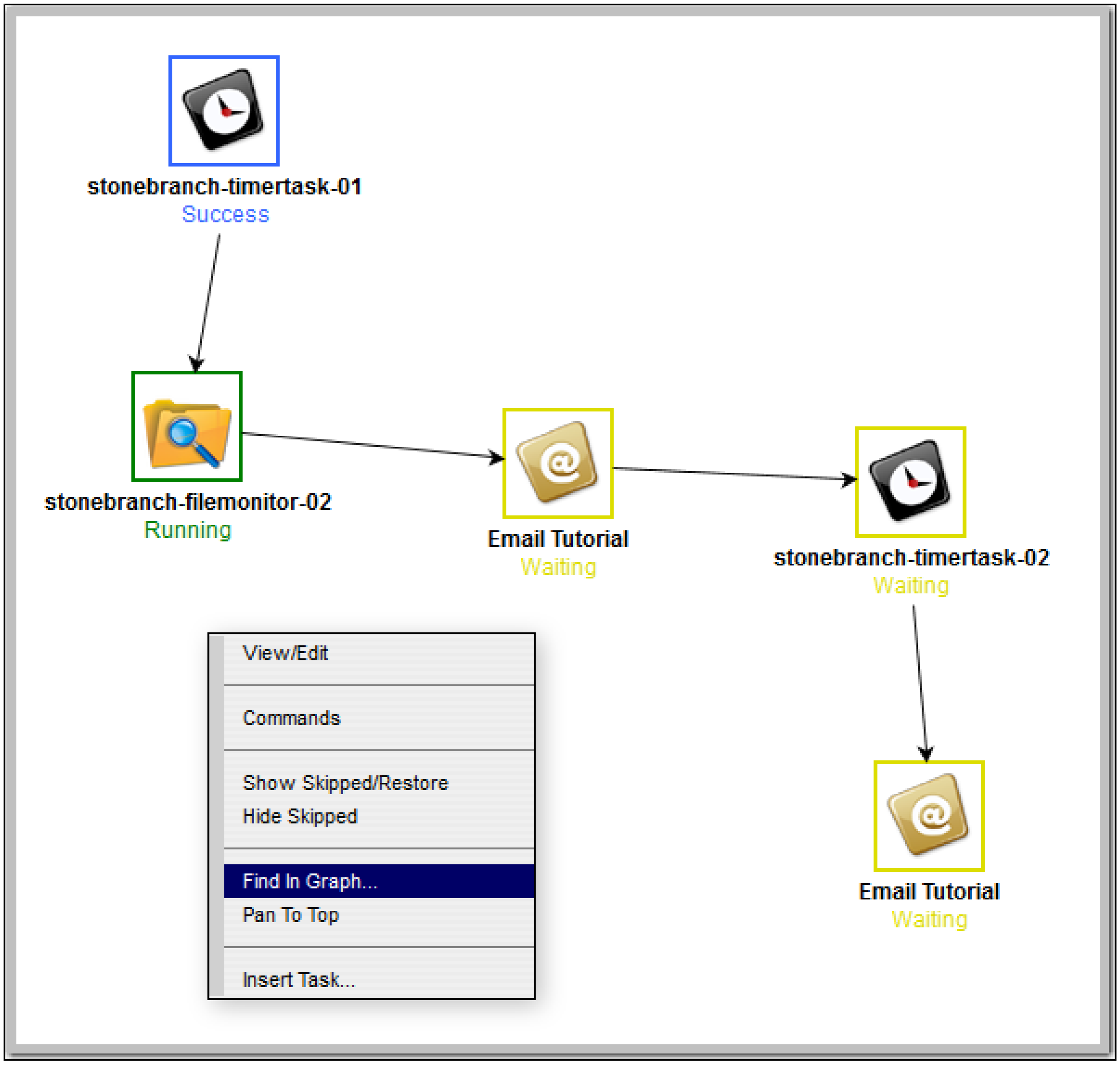
- Activity display
- Monitoring Workflows
- Adding Skip/Run Criteria

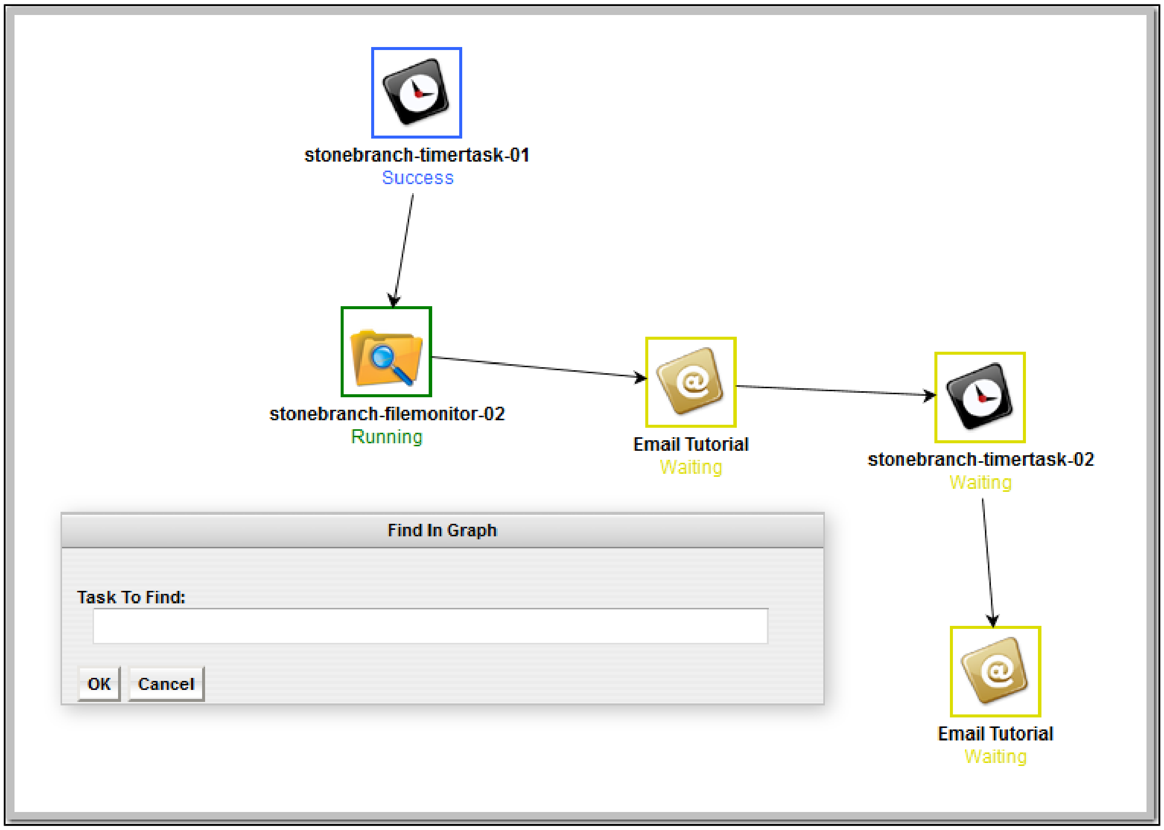
Tutorial - Finding and Inserting Tasks in an Active Workflow

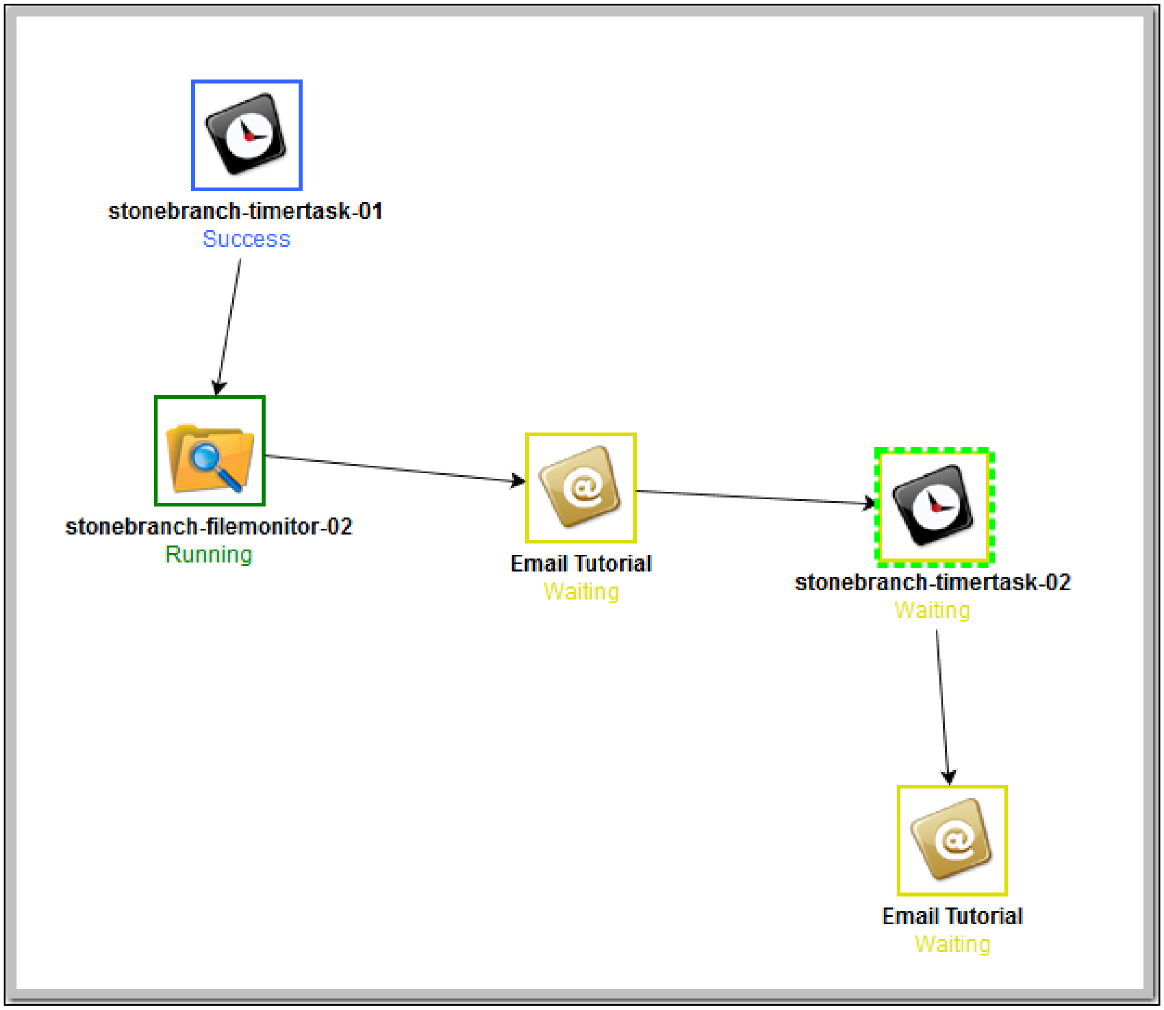
In this exercise, we will run a workflow and:

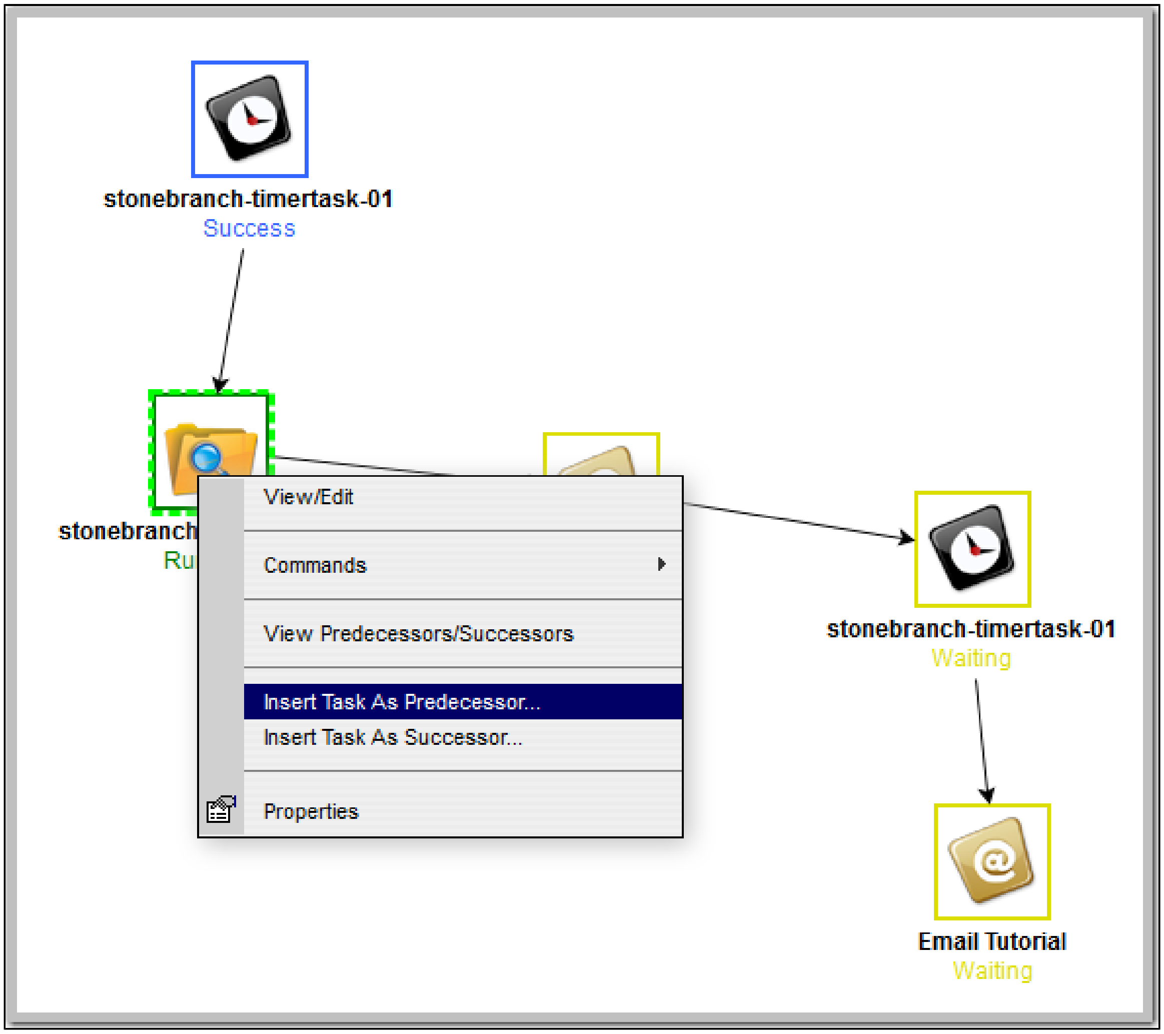
- Find a specific task within the workflow. (You also can find a task in a workflow that has not yet been launched or one that has run and completed.)
- Insert a task as a predecessor to another task in the workflow.
- Insert a task as a successor to another task in the workflow.

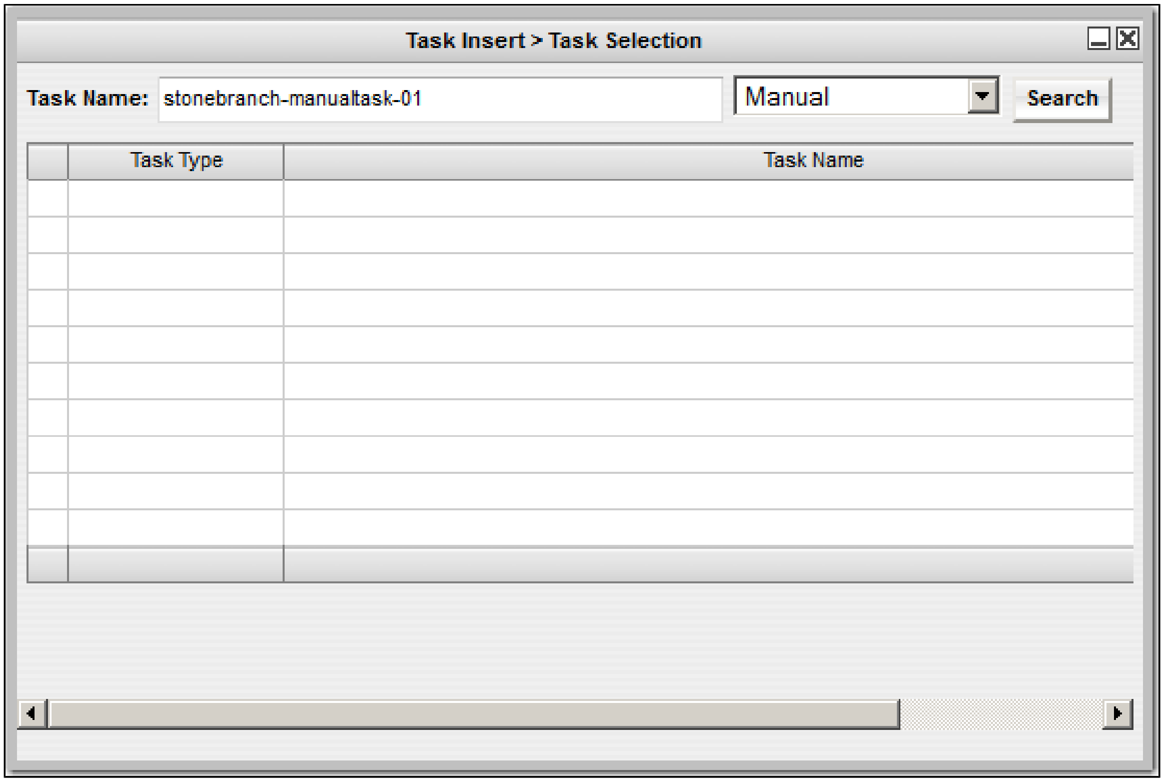
> ⚠ **Note**
> You may find it easier to run a workflow three different times, once for each step in this exercise.

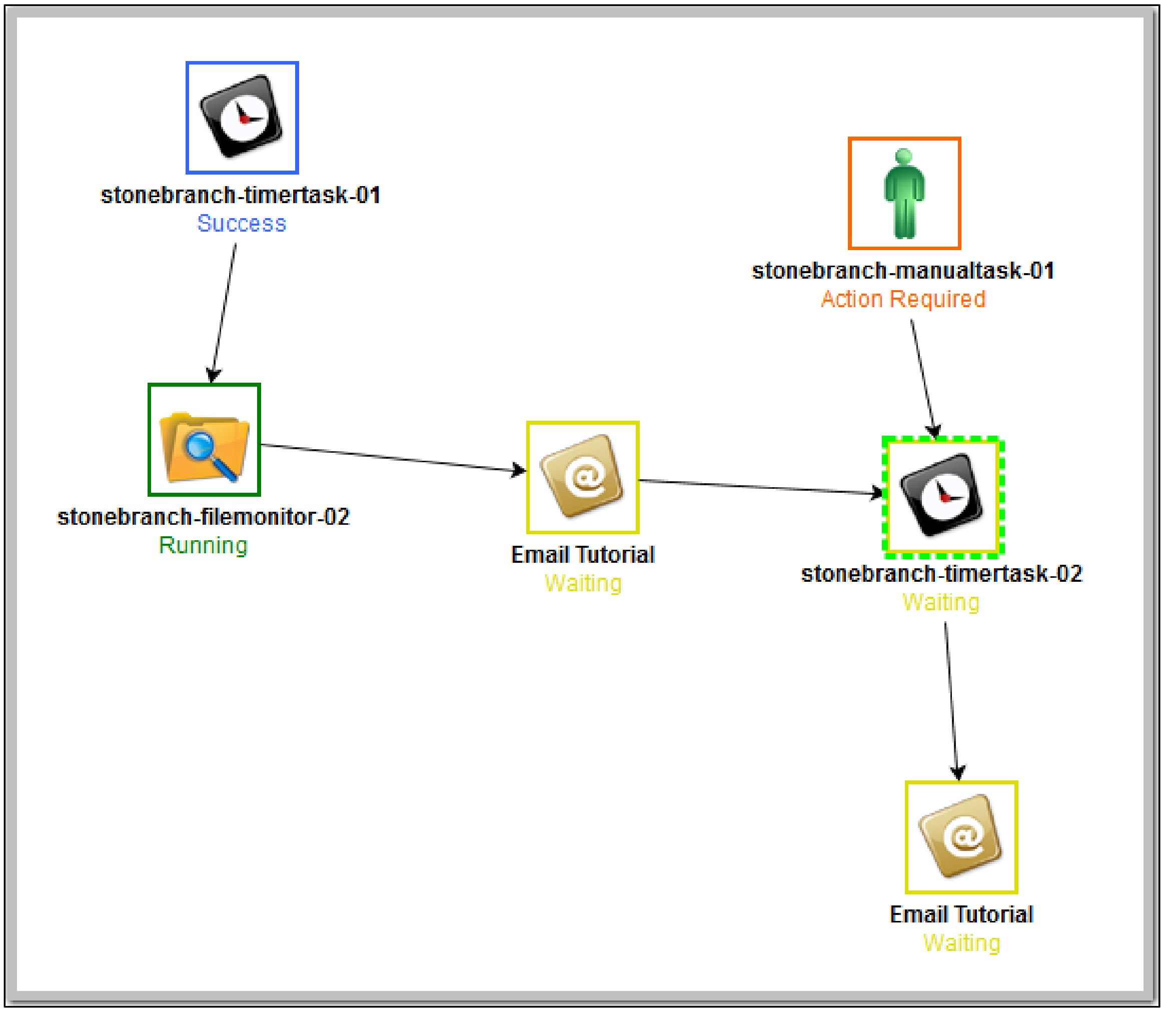
Step 1	Create a workflow so that all of its tasks cannot display on the Workflow Monitor at the same time.
Step 2	Right-click in the Workflow Monitor canvas. A pop-up menu displays.  stonebranch-timertask-01 Success stonebranch-filemonitor-02 Running Email Tutorial Waiting stonebranch-timertask-02 Waiting Email Tutorial Waiting View/Edit Commands Show Skipped/Restore Hide Skipped Find In Graph... Pan To Top Insert Task...

Step 3	Click Find in Graph... to display the Find in Graph dialog.  stonebranch-timertask-01 Success stonebranch-filemonitor-02 Running Email Tutorial Waiting stonebranch-timertask-02 Waiting Email Tutorial Waiting Find In Graph Task To Find: OK Cancel

Step 4	In the Task to Find field, enter the name of a task in the workflow that you want to find, and then click OK. Opswise Controller finds the task in the workflow, highlights the task, and moves the Workflow Monitor display so that the found task is centered on your screen.  stonebranch-timertask-01 Success stonebranch-filemonitor-02 Running Email Tutorial Waiting stonebranch-timertask-02 Waiting Email Tutorial Waiting

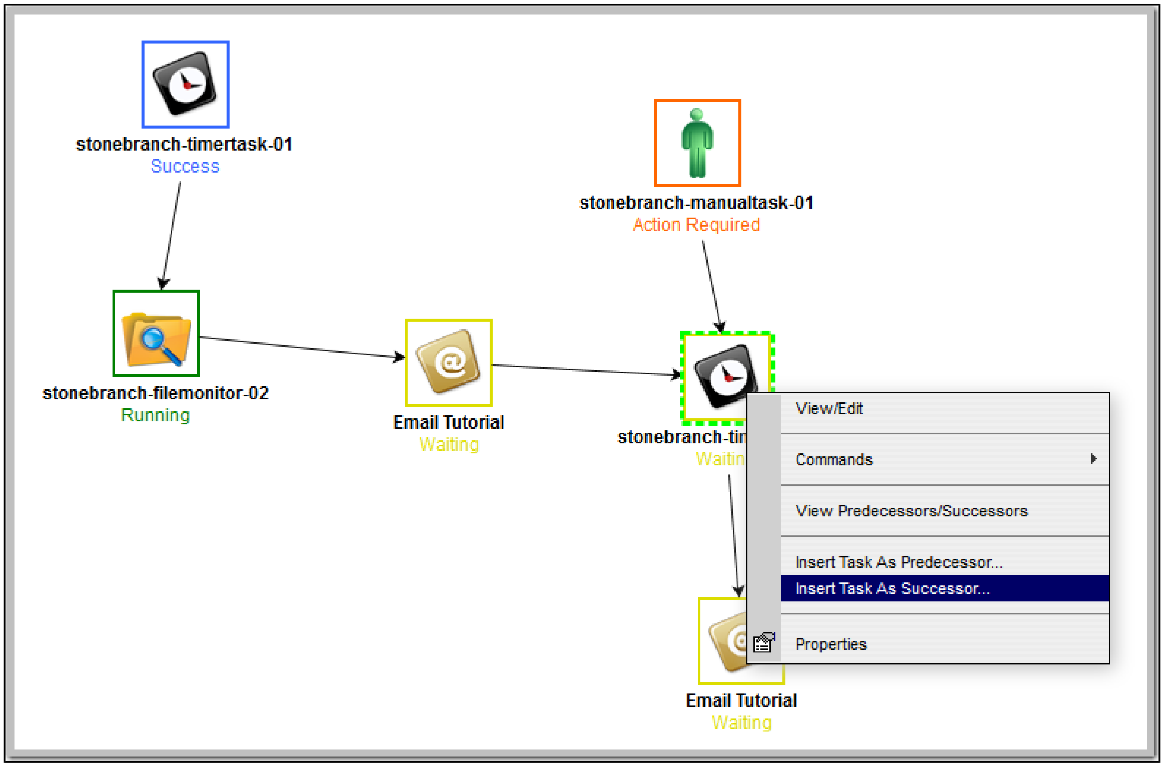
Step 5	Right-click the found task (**stonebranch-timertask-02**) to display a menu of actions available for that task.  stonebranch-timertask-01 Success stonebranch Ru View/Edit Commands View Predecessors/Successors Insert Task As Predecessor... Insert Task As Successor... Properties stonebranch-timertask-01 Waiting Email Tutorial Waiting

Step 6	Click **Insert Task As Predecessor...**. The Task Insert > Task Selection dialog displays.  Task Name: stonebranch-manualtask-01 Manual
Step 7	Find a task you want to insert and drag the task's icon to the workflow canvas. In this example, we have selected **stonebranch-manualtask-01**.

Step 8	The Controller inserts **stonebranch-manualtask-01** as a precedent to the Waiting **stonebranch-timertask-02** task, and **stonebranch-manualtask-01** begins running (as a Manual Task, it requires a user action). When **stonebranch-manualtask-01** completes, **stonebranch-timertask-02** begins running.  stonebranch-timertask-01 Success stonebranch-manualtask-01 Action Required stonebranch-filemonitor-02 Running Email Tutorial Waiting stonebranch-timertask-02 Waiting Email Tutorial Waiting

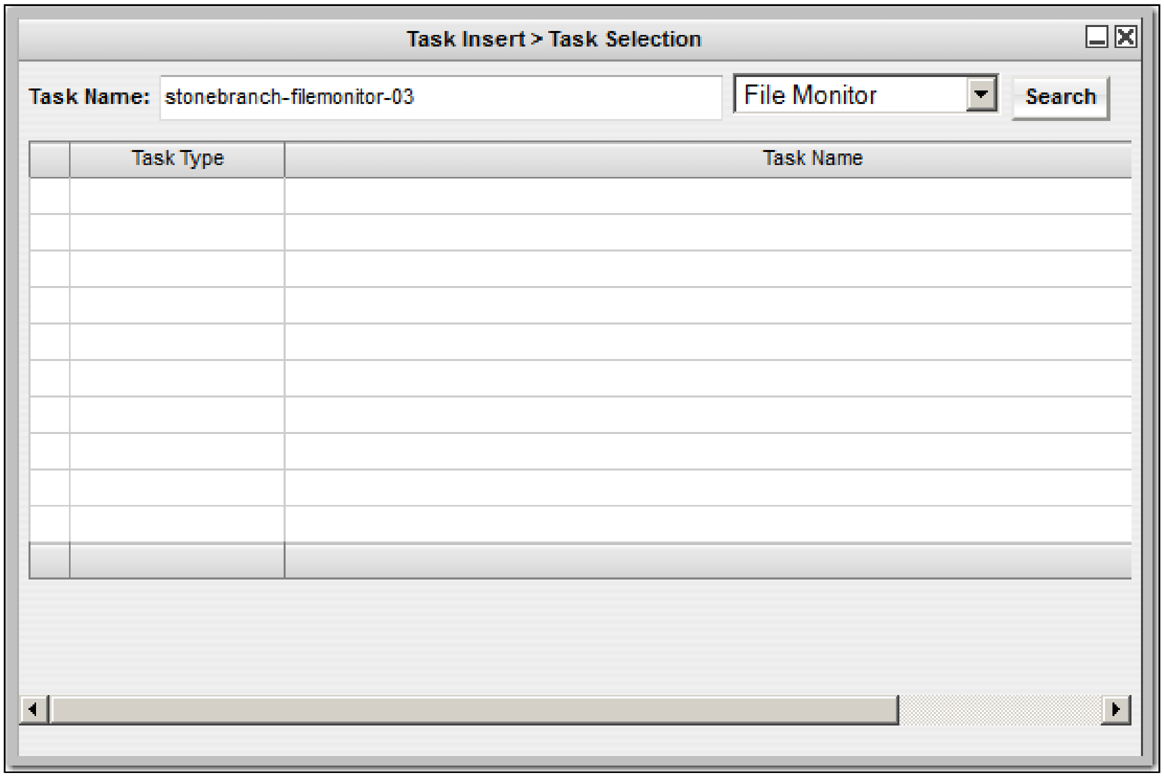
Step 9

Once again, right click **stonebranch-timertask-02** to display a menu of actions available for that task.



Step 10

Select **Insert Task As Successor...**. The Task Insert > Task Selection dialog displays.



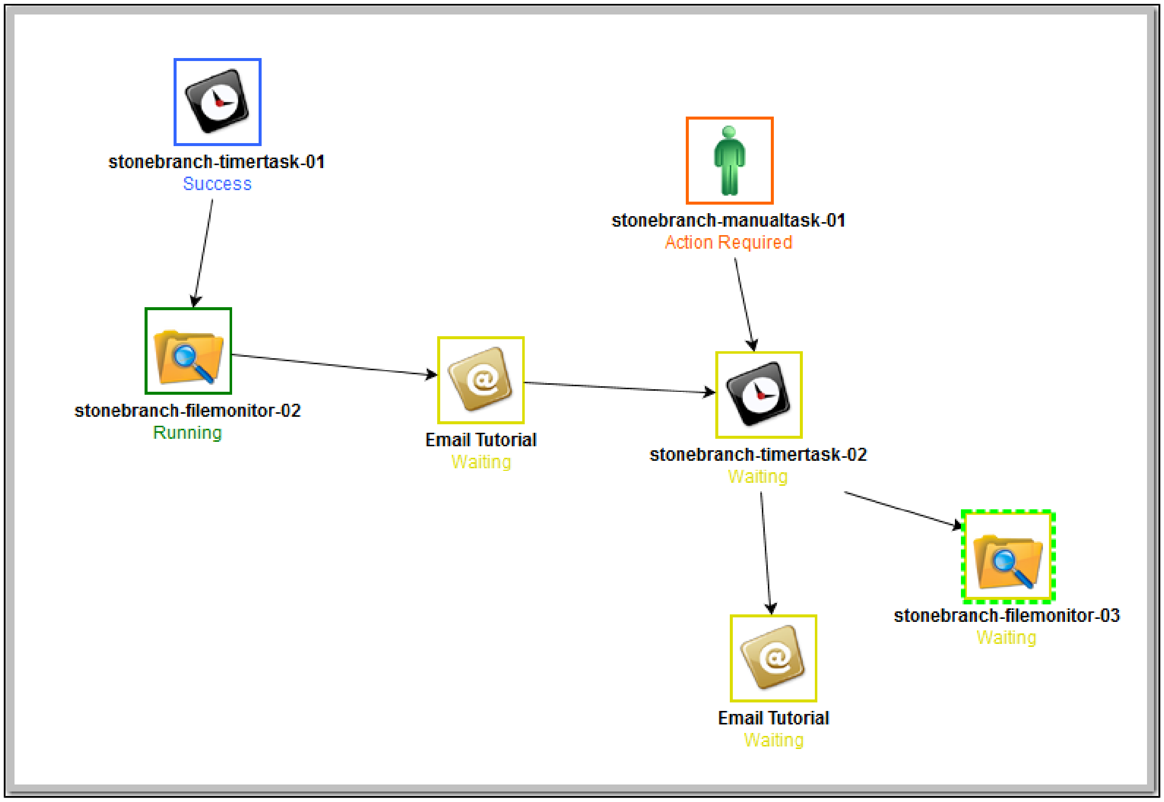
Task Insert > Task Selection

Task Name: stonebranch-filemonitor-03 | File Monitor | Search

	Task Type	Task Name

Step 11

Find the task you want to insert and drag the task's icon to the workflow canvas. In this example, we have selected **stonebranch-filemonitor-03**.

Step 12	The Controller inserts **stonebranch-filemonitor-03** as a successor to **stonebranch-timertask-02**. When **stonebranch-timertask-02** completes successfully, the inserted **stonebranch-filemonitor-03** task begins running.  stonebranch-timertask-01 Success stonebranch-manualtask-01 Action Required stonebranch-filemonitor-02 Running Email Tutorial Waiting stonebranch-timertask-02 Waiting stonebranch-filemonitor-03 Waiting Email Tutorial Waiting

For additional information, see:

- Finding a Task in a Workflow
- Inserting a Task in a Workflow
- Searching for and Adding Tasks

Tutorial - Skipping, Unskipping, and Showing-Hiding Skipped Task Instances

You can skip (and unskip) individual task instances and task instances within a workflow that have been launched but have not yet started to run. For skipped tasks within a workflow, you can choose to show or hide those tasks in the Workflow Monitor.

You also can skip a task instance so that all dependent task instances of that task instance automatically are skipped as well.

Although there are several methods for skipping, unskipping, and showing/hiding skipped task instances, in this exercise we will:

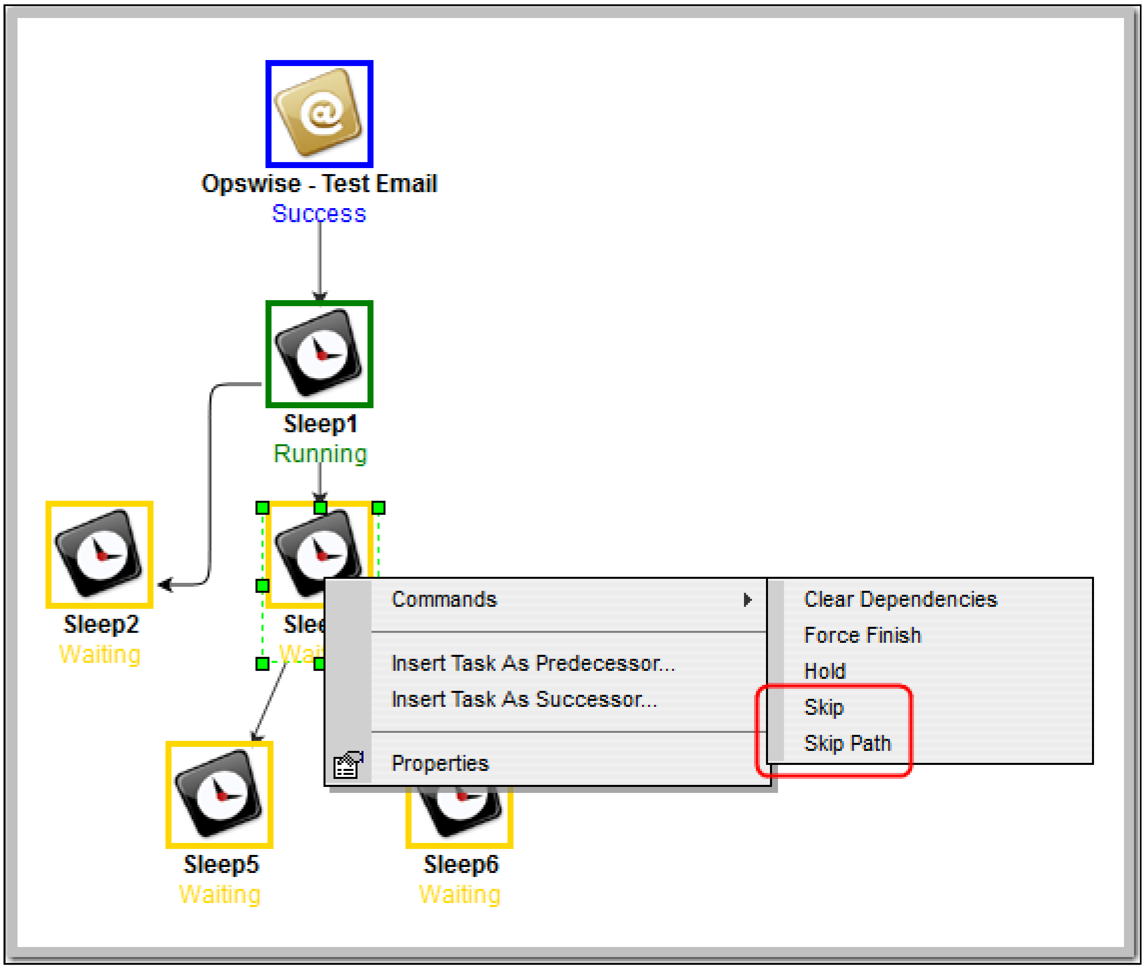
- Skip a task instance in a workflow.
- Unskip a previously skipped task instance in a workflow.
- Show and hide a skipped task instance in a workflow.

⚠ **Note**
There also are methods for skipping a task and showing/hiding a skipped task before it becomes a task instance (that is, before it or the workflow in which it resides has been launched). See the links at the bottom of this page.

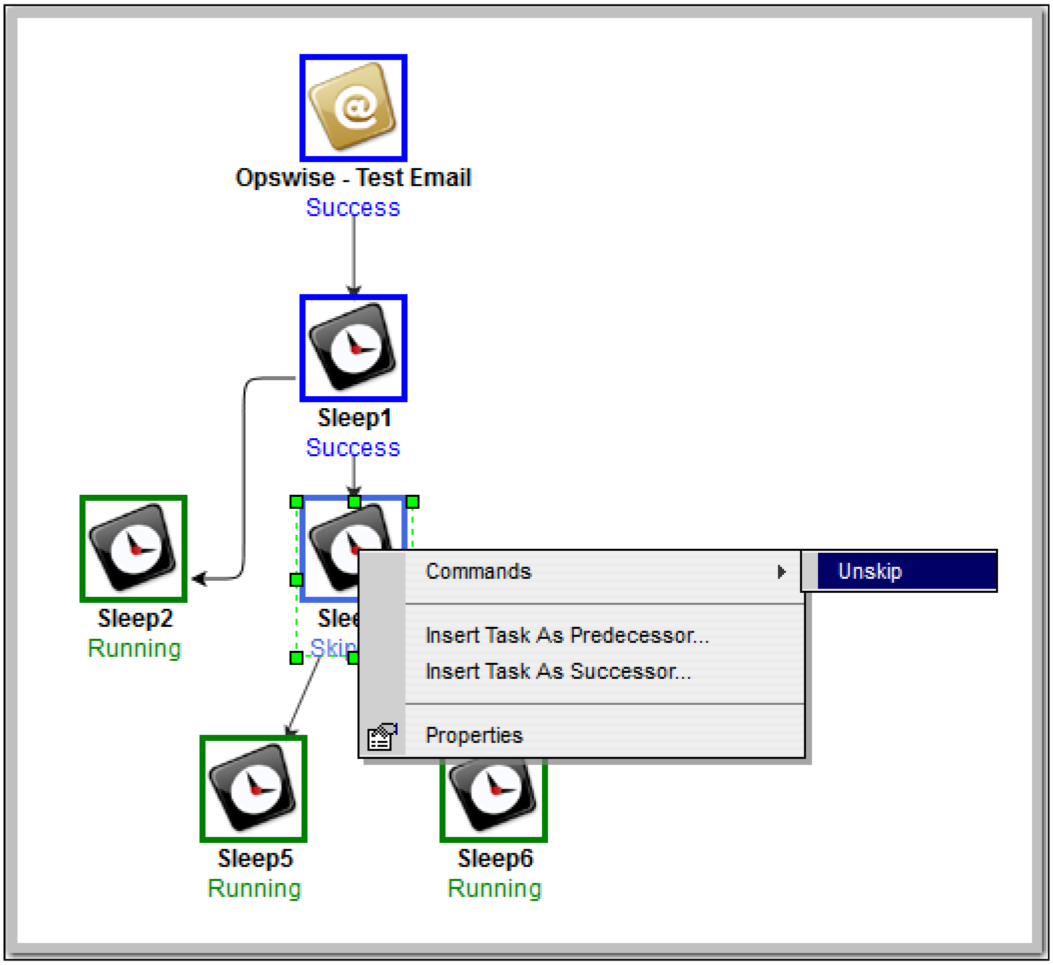
Step 1	From the Automation Center navigation pane, select **Tasks > Workflow Tasks**. The Workflow Tasks list displays a list of all workflow tasks.
Step 2	Right-click **Simple Workflow** (created in the Creating a Simple Workflow tutorial), and on the Action menu, click **Launch Task**.
Step 3	On the Activity Monitor, select Active Workflow Task Instances from the drop-down list.
Step 4	Click **Simple Workflow**. The Workflow Monitor displays for this running workflow.

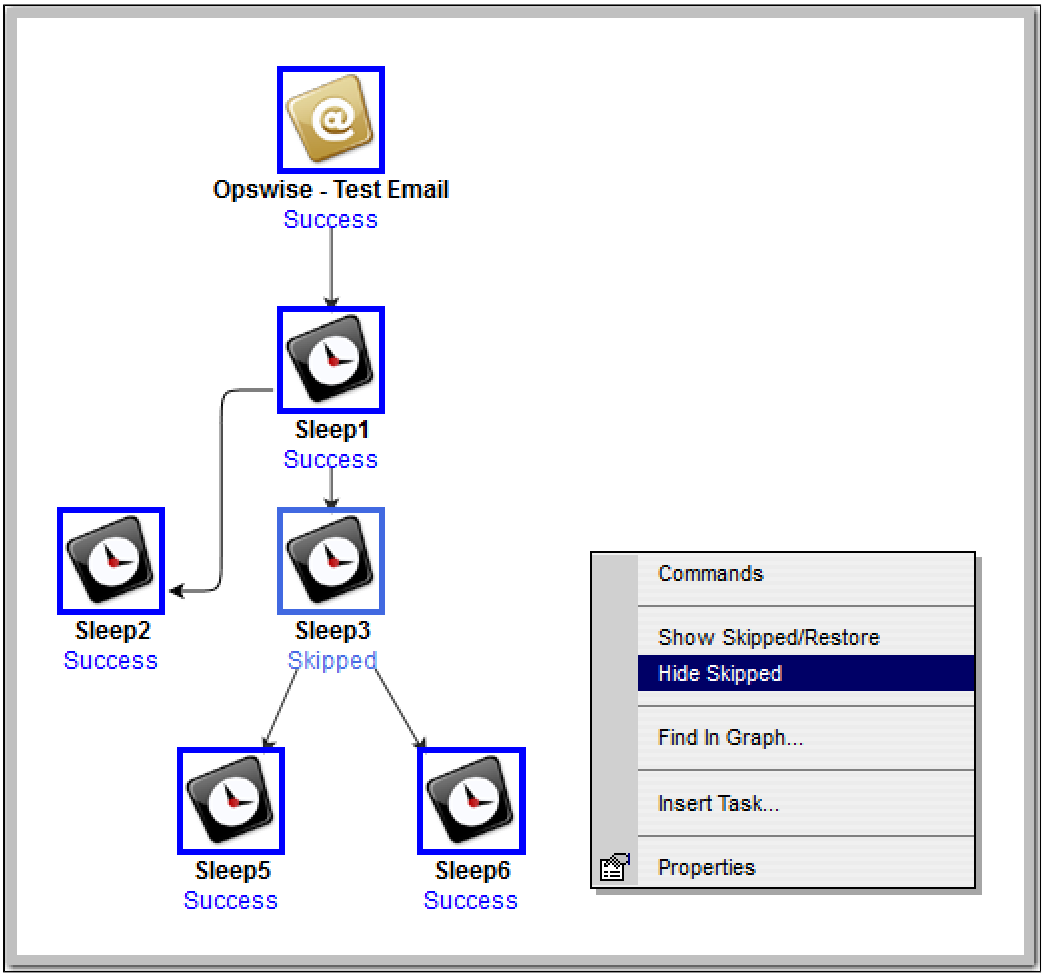
Step 5 Right-click the Sleep3 task while it is in Waiting status and, from the pop-up menu that displays, click Commands / Skip.

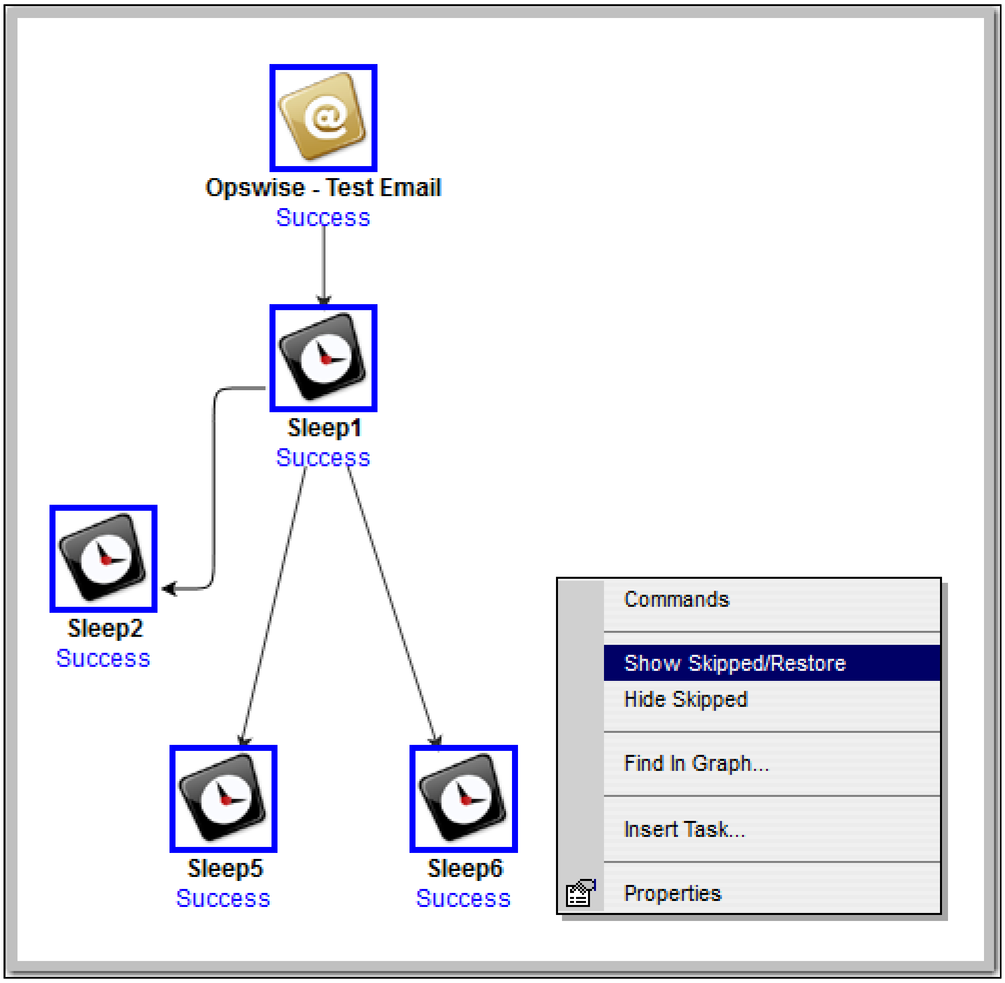
> ⚠ **Note**
> If you wanted to skip the Sleep3 task and its dependent Sleep5 and Sleep6 tasks, you would click Commands / Skip Path.



The Sleep3 status changes from Waiting to Skipped. When Sleep1 completes successfully, Opswise Controller will skip Sleep3 and start running Sleep5 and Sleep6.

Step 6	To un-skip Sleep3, right-click it and, from the pop-up menu that displays, click Commands / Unskip.  Opswise - Test Email Success Sleep1 Success Sleep2 Running Slee Skip Commands Unskip Insert Task As Predecessor... Insert Task As Successor... Properties Sleep5 Running Sleep6 Running The task status changes from Skipped to Waiting. When Sleep1 completes successfully, the Controller will not skip Sleep3.

Step 7	To hide the skipped Sleep3 task in the Workflow Editor, right-click in the Workflow Monitor canvas and click Hide Skipped.  Opswise - Test Email Success Sleep1 Success Sleep2 Success Sleep3 Skipped Sleep5 Success Sleep6 Success Commands Show Skipped/Restore Hide Skipped Find In Graph... Insert Task... Properties

Step 8	To show the skipped Sleep3 task in the Workflow Monitor, right-click in the Workflow Editor canvas and click Show Skipped/Restore.  Opswise - Test Email Success Sleep1 Success Sleep2 Success Sleep5 Success Sleep6 Success Commands Show Skipped/Restore Hide Skipped Find In Graph... Insert Task... Properties

For additional information, see:

- Skipping a Task
- Unskipping a Task
- Showing or Hiding Skipped Tasks
- Adding Skip/Run Criteria for Specific Tasks

Tutorial - Using Variables in a Simple Task

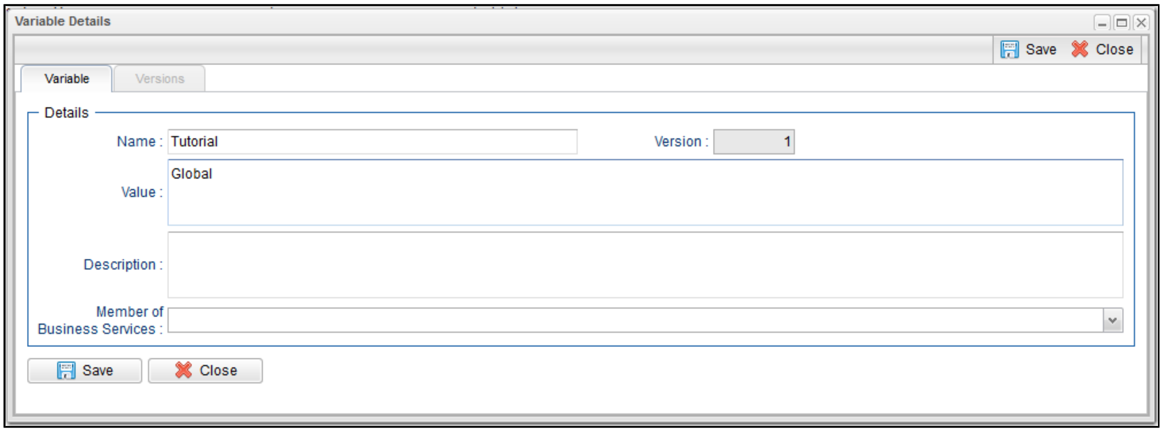
Introduction

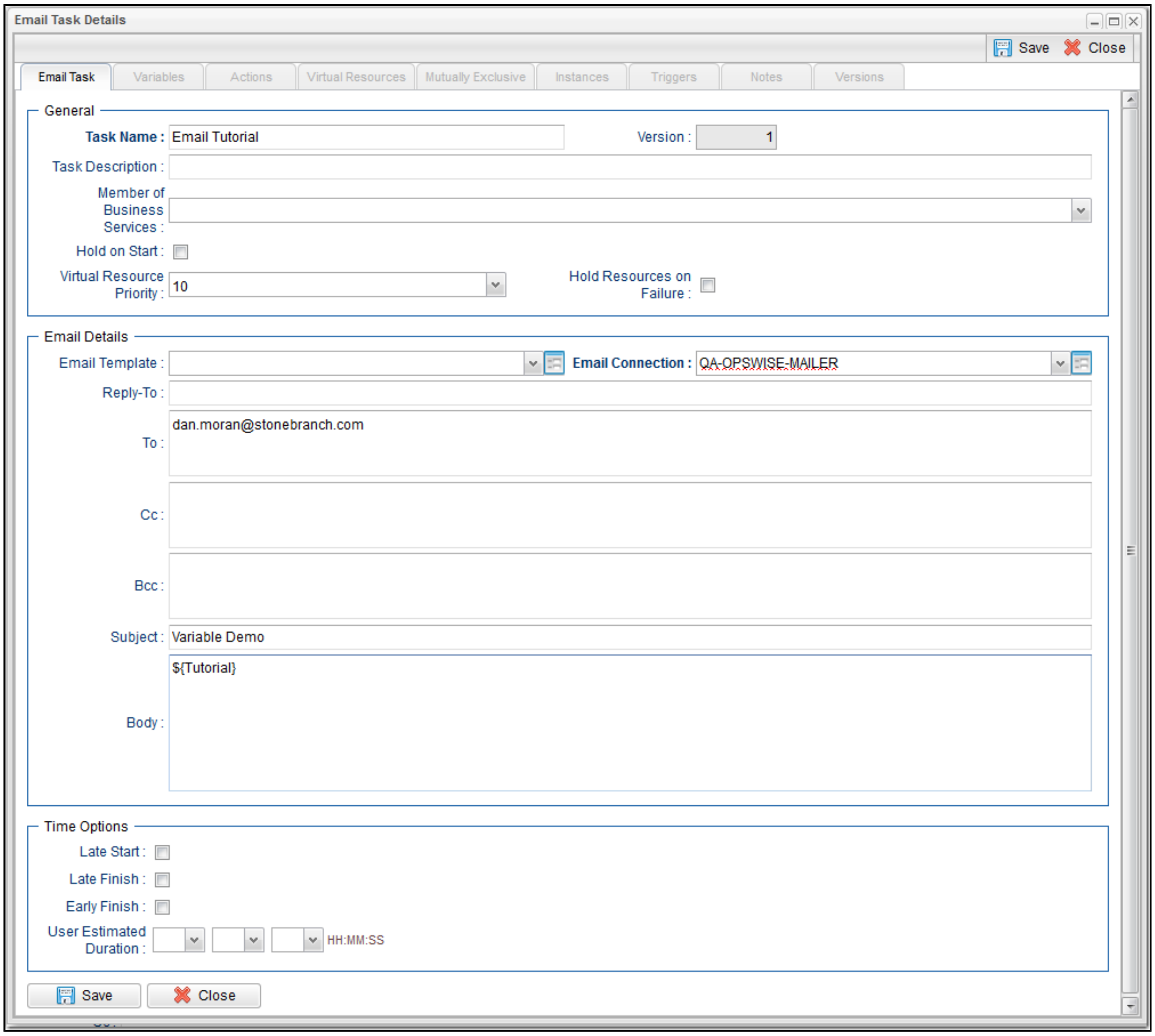
Note
You need an Email Connection to perform this exercise.

In the Launching an Email Task Based on a File Monitor tutorial, a built-in variable called `${ops_trigger_name}` and a system variable called `${_date}` were included to pass information into an Email message. Those variables were resolved using system information when the email task instance was created.

In this exercise, we will create a new user-defined variable, use it in a task, and run the task both manually and via a trigger to illustrate how such variables are resolved.

Resolving Variable Using Value from Global Variable Table

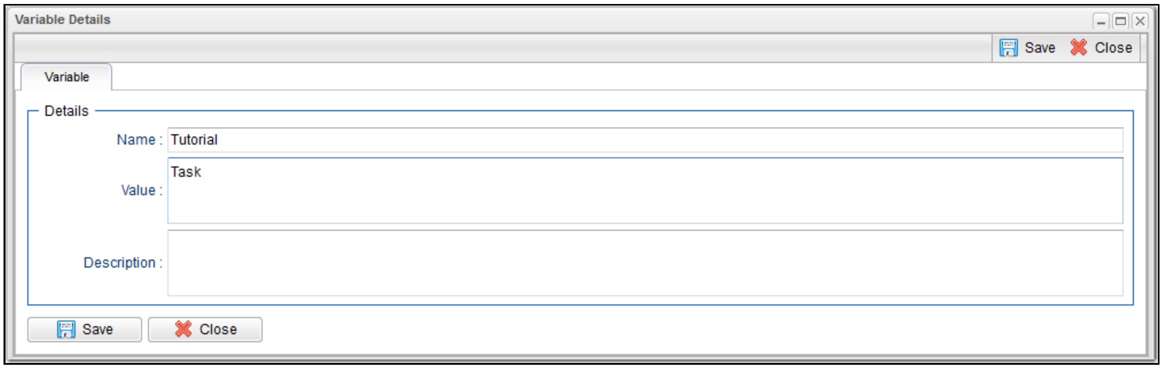
Step 1	Create a Variable with the following values: • **Name** = Tutorial • **Value** = Global
Step 2	Click the **Save** button.  Variable Details Save Close Variable Versions Details Name : Tutorial Version : 1 Value : Global Description : Member of Business Services :
Step 3	Create an Email task with the following values: • Task Name = Email Tutorial • Email Connection = your Email connection • To = your Email address • Subject = Variable demo • Body=${Tutorial}

Step 4	Click the **Save** button.  Email Task Details General Task Name : Email Tutorial Version : 1 Task Description : Member of Business Services : Hold on Start : □ Virtual Resource Priority : 10 Hold Resources on Failure : □ Email Details Email Template : Email Connection : QA-OPSWISE-MAILER Reply-To : To : dan.moran@stonebranch.com Cc : Bcc : Subject : Variable Demo Body : ${Tutorial} Time Options Late Start : □ Late Finish : □ Early Finish : □ User Estimated Duration : HH:MM:SS
Step 5	Click the **Launch Task** button.
Step 6	You should receive an email with **Global** in the body of the email.

Resolving Variable Using Value from Task

Step 1	Open the Email Tutorial task and click the **Variables** tab.
Step 2	Click the **New** button to display Variable Details for a new Variable and enter the following values: • **Name** = Tutorial • Value* = Task

Step 3 Click the **Save** button.



Variable Details

Details

Name : Tutorial

Value : Task

Description :

Step 4 In the **Email Tutorial** Details, click the **Update** button and then click the **Launch Task** button.

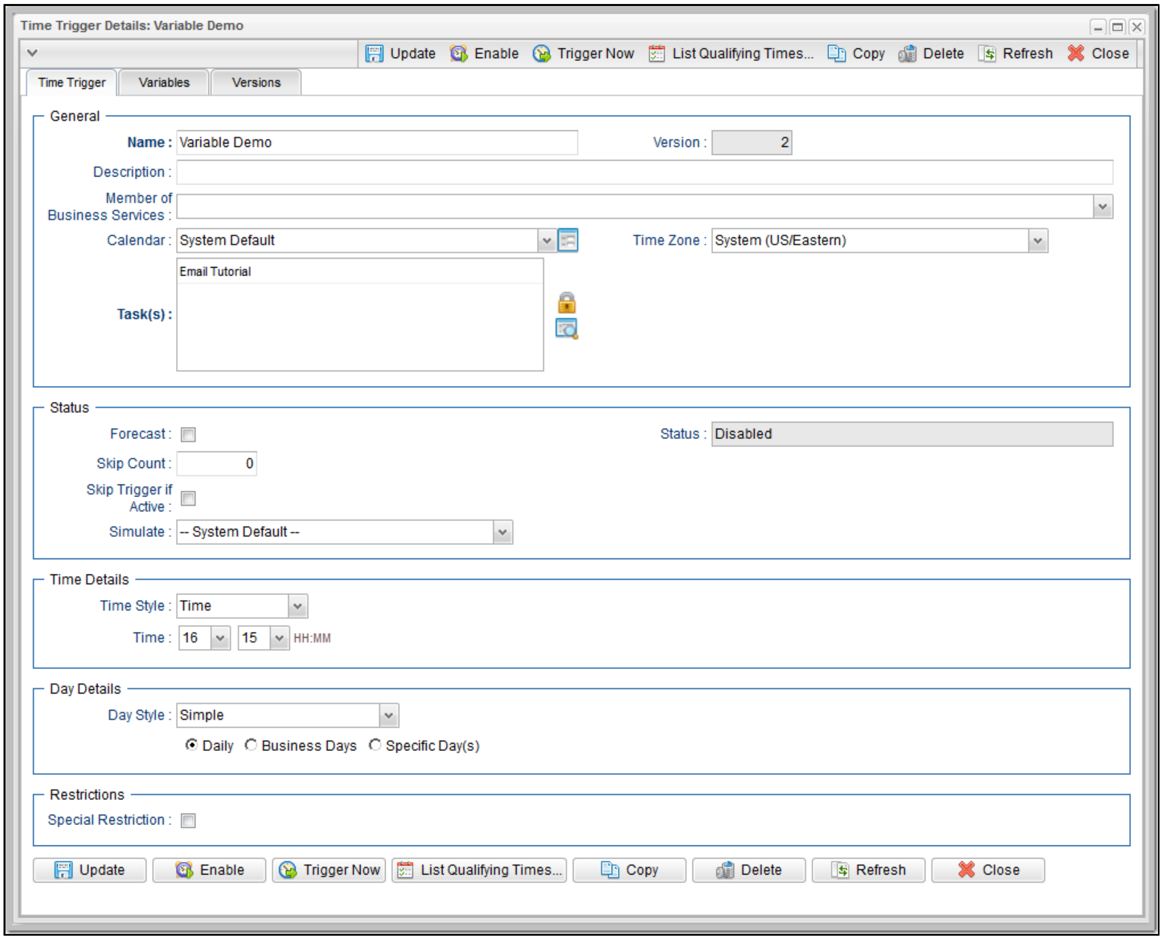
Step 5 You should receive an email with **Task** in the body of the email.

Resolving Variable Using Value from Trigger

Step 1 Create a Time trigger with the following values:

- Trigger Name = Variable Demo
- Tasks = Email Tutorial
- Time = (Five minutes from the present time.)

Step 2 Click the **Save** button.



Time Trigger Details: Variable Demo

General

Name : Variable Demo

Version : 2

Description :

Member of Business Services :

Calendar : System Default

Time Zone : System (US/Eastern)

Task(s) : Email Tutorial

Status

Forecast : ☐

Status : Disabled

Skip Count : 0

Skip Trigger if Active : ☐

Simulate : -- System Default --

Time Details

Time Style : Time

Time : 16 15 HH:MM

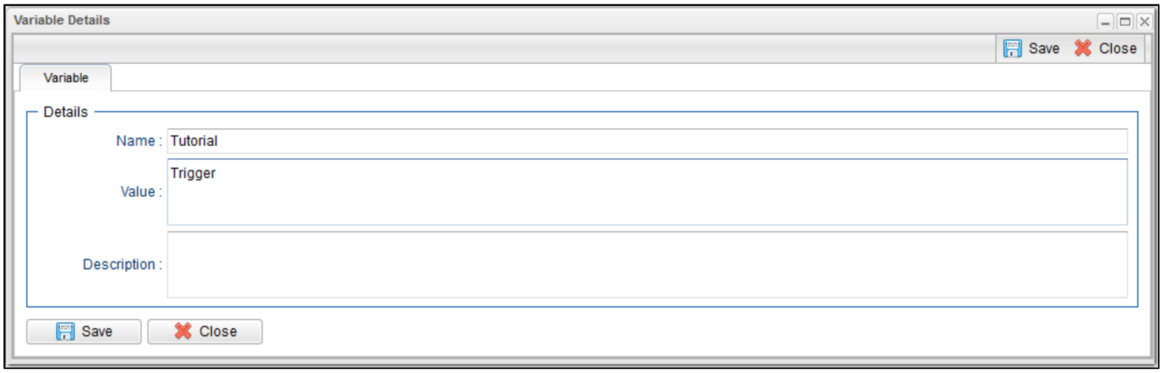
Day Details

Day Style : Simple

● Daily ○ Business Days ○ Specific Day(s)

Restrictions

Special Restriction : ☐

Step 3	Re-open the **Variable Demo** trigger and click the **Variables** tab.
Step 4	Click the **New** button to display Variable Details for a new Variable and enter the following values: - **Name** = Tutorial - Value* = Trigger
Step 5	Click the **Save** button.  Variable Details Save Close Variable Details Save Close Name : Tutorial Value : Trigger Description :
Step 6	In the trigger Details, click the **Update** button and then the **Enable** button.
Step 7	You should receive an email with **Trigger** in the body of the email.

For additional information, see:

- User-Defined Variables

Tutorial - Using Variables in a Workflow

> ⚠ **Note**
> You need a working Database Connection for this tutorial.

For tasks executing within a Workflow, the order of precedence for resolving user-defined variables differs.

As the following procedure demonstrates, the variable definition in the task takes precedence, then Opswise Controller looks within the Workflow or parent Workflow(s), with the global variable coming last.

Step 1	Create a SQL task called **SQL with Variable** with the following SQL command: `CREATE TABLE ${tutorial}${_date("yyyyMMdd",5) } (name varchar(128), value varchar(128));`
Step 2	Click the **Save** button and then re-open the task.
Step 3	Click the **Variables** tab and create a Variable with the following values: • **Name** = tutorial • *Value+ = task
Step 4	Click the **Save** button and in the task Details, click the **Update** button.
Step 4	Create a Workflow called **Variable Workflow**.
Step 5	Add the **SQL With Variable** task to the Workflow and save it.
Step 6	Launch **Variable Workflow**. and open the SQL With Variable task instance on the Activity Monitor. Note that the SQL command resembles the following, with the value from the task variable. `CREATE TABLE task20090913 (name varchar(128), value varchar(128));`
Step 7	Open the task and delete the task variable.
Step 8	Go back to Variable Workflow and add the following variable: `tutorial/workflow`
Step 9	Open the task instance. The SQL command used the variable from the workflow because the task no longer had a variable. `CREATE TABLE workflow20090913 (name varchar(128), value varchar(128));`

For additional information, see:

- User-Defined Variables

Tutorial - Creating Custom Days and Periods

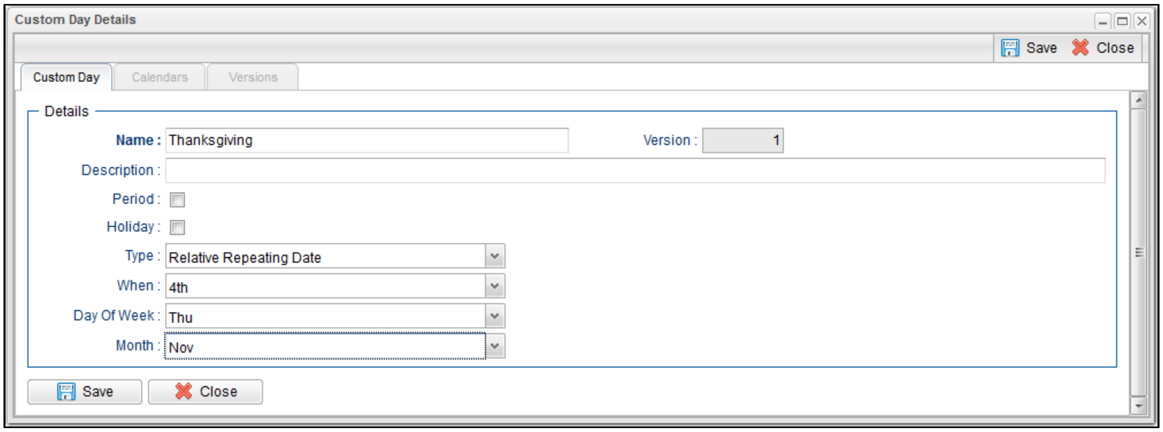
Introduction

In this tutorial, we will create a Custom Day and period for a Calendar, and assign that Calendar to a Trigger.

Create a Custom Day

In this procedure, we will create a Custom Day, which can be applied to any Calendar.

Step 1	From the Automation Center navigation pane, select **Other > Custom Days**. The Custom Days list displays.
Step 2	Click the **New** button to display Custom Day Details for a new Custom Day and enter/select the following values: - **Name** = Thanksgiving - **Holiday** is enabled - **Type** = Relative Repeating Date - **When** = 4th - **Day of Week** = Thu - **Month** = Nov
Step 3	Click the **Save** button.



Details

Name : Thanksgiving

Version : 1

Description :

Period : □

Holiday : □

Type : Relative Repeating Date

When : 4th

Day Of Week : Thu

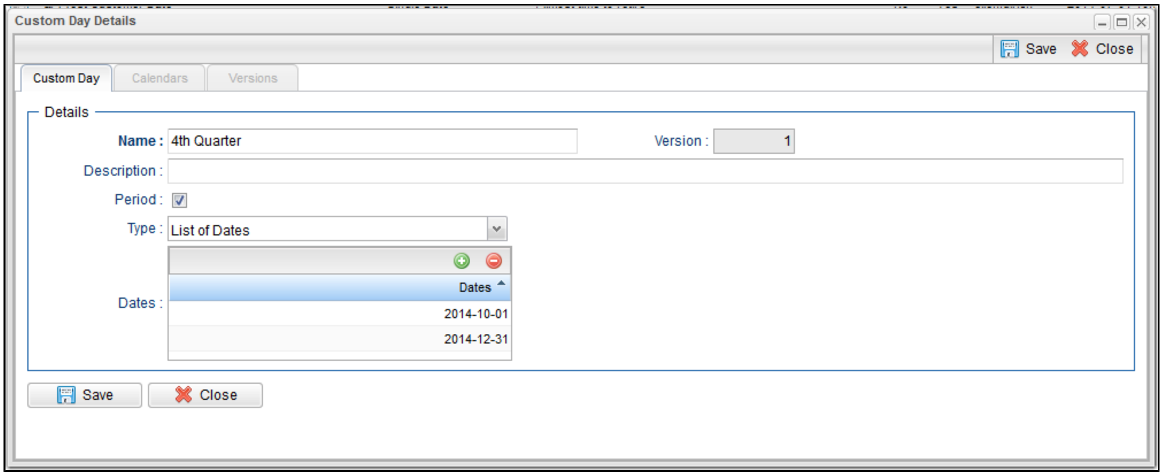
Month : Nov

Create a Custom Period

In this procedure, we will create a custom period of days, which can be applied to any calendar.

Step 1	Click the **New** button on the Custom Days list and to display Custom Day Details for a new Custom Day and enter/select the following values: - **Name** = 4th Quarter - **Period** is enabled. - **Type** = List of Dates - **Dates** = 2014-10-01 and 2014-12-31.

Step 2 Click the **Save** button.



Name : 4th Quarter

Version : 1

Description :

Period : ☑

Type : List of Dates

Dates
2014-10-01
2014-12-31

Assigning Custom Day and Custom Period to a Calendar

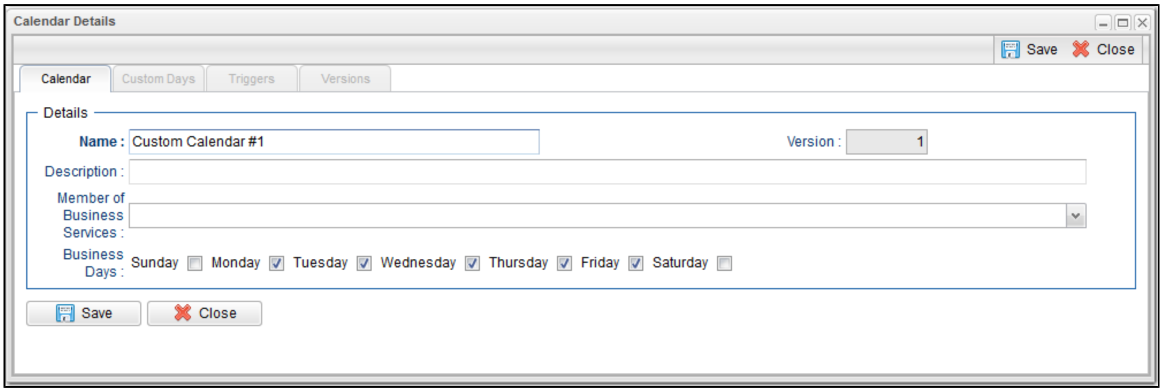
In this procedure, we will assign the custom day and custom period to a new Calendar.

Step 1 From the **Automation Center** navigation pane, select **Other > Calendars**. The Calendars list displays.

Step 2 Click the **New** button to display Calendar Details for a new Calendar and enter/select the following values:

- **Name** = Custom Calendar #1

Step 3 Click the **Save** button.



Name : Custom Calendar #1

Version : 1

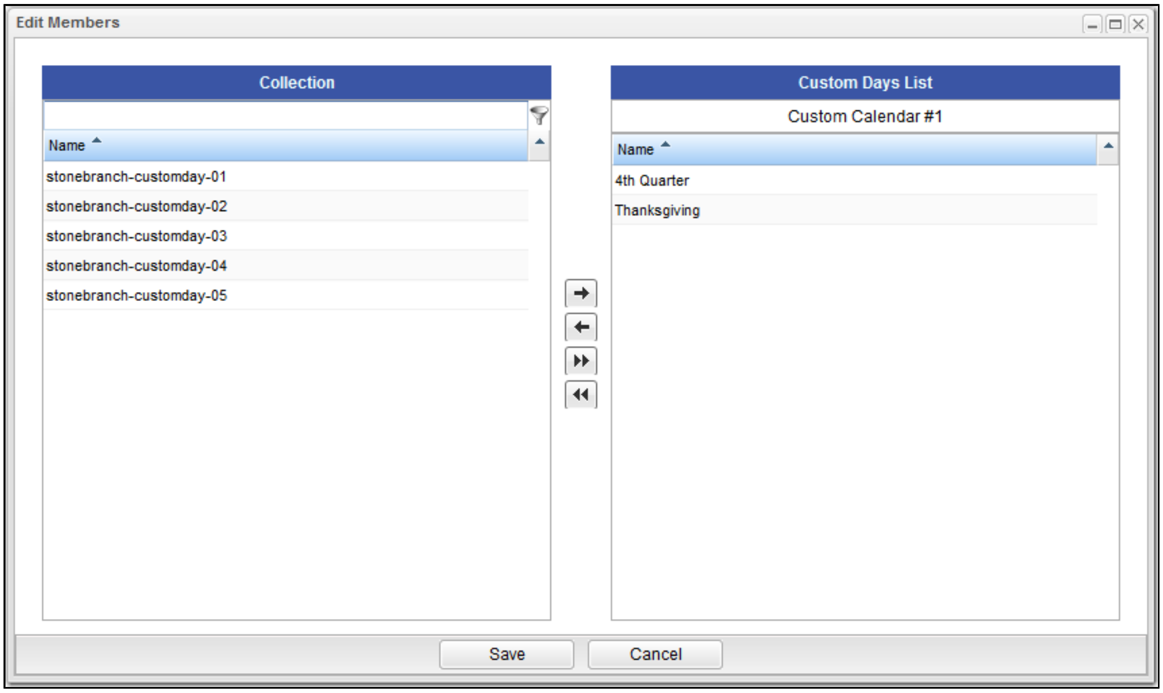
Description :

Member of Business Services :

Business Days : Sunday □ Monday ☑ Tuesday ☑ Wednesday ☑ Thursday ☑ Friday ☑ Saturday □

Step 4 Re-open **Custom Calendar #1** and click the **Custom Days** tab. The Custom Days list for this Calendar displays.

Step 5 Click the **Edit** button to display an **Edit Members** pop-up dialog of all Custom Days.

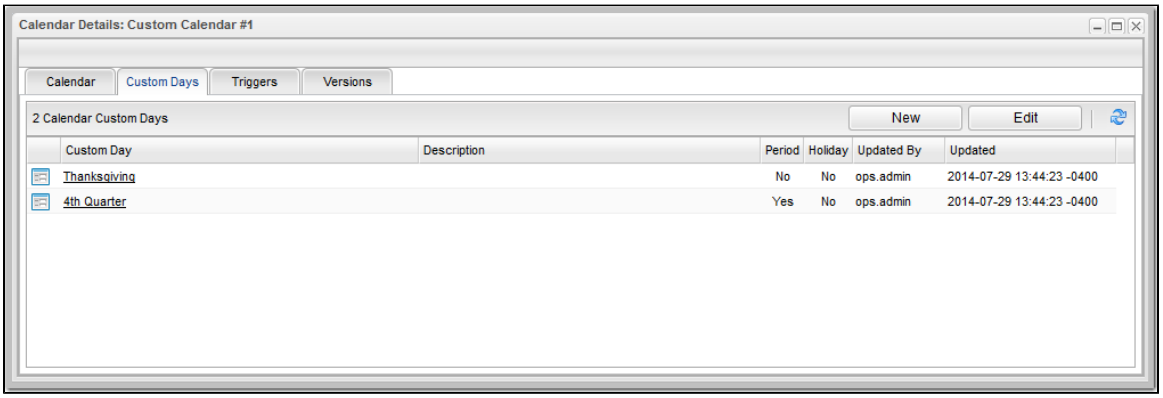


Edit Members

Collection
Name
stonebranch-customday-01
stonebranch-customday-02
stonebranch-customday-03
stonebranch-customday-04
stonebranch-customday-05

Custom Days List
Custom Calendar #1
Name
4th Quarter
Thanksgiving

Step 6 Select **Thanksgiving** and **4th Quarter**, and then click the **Save** button. Those two Custom Days now appear on the Custom Days list for **Custom Calendar #1**.



Calendar Details: Custom Calendar #1

2 Calendar Custom Days

	Custom Day	Description	Period	Holiday	Updated By	Updated
	Thanksgiving		No	No	ops.admin	2014-07-29 13:44:23 -0400
	4th Quarter		Yes	No	ops.admin	2014-07-29 13:44:23 -0400

Step 7 In the Calendar Details, click the **Update** button.

Note
You also can assign a Custom Day to a Calendar by clicking the Calendars tab in the Custom Day Details.

Selecting a Custom Calendar for a Trigger

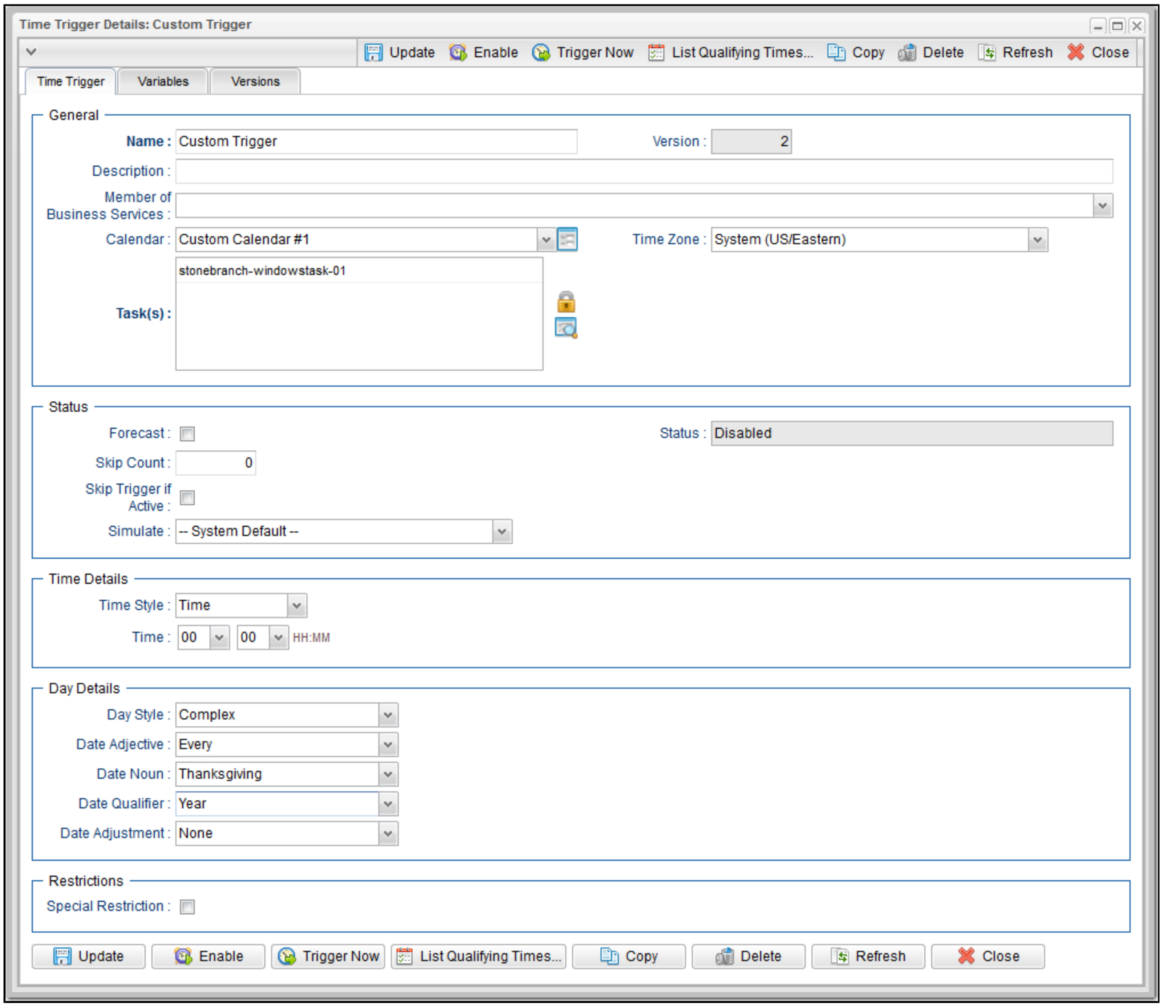
In this procedure, we will assign the custom calendar to a trigger.

Step 1 From the **Automation Center** navigation pane, click **Triggers > Time Triggers**. The Time Triggers list displays.

Step 2 Click the **New** button to display Time Trigger Details for a new Time Trigger and enter/select the following values:

- **Name** = Custom Trigger
- **Calendar** = Custom Calendar #1
- **Task(s)** = (any task)
- **Day Style** = Complex
- **Date Noun** = Thanksgiving (a Custom Day created for Custom Calendar #1)

Step 3 Click the **Save** button.



Time Trigger Details: Custom Trigger

General

Name : Custom Trigger
Version : 2
Description :
Member of Business Services :
Calendar : Custom Calendar #1
Time Zone : System (US/Eastern)
Task(s) : stonebranch-windowstask-01

Status

Forecast : □
Status : Disabled
Skip Count : 0
Skip Trigger if Active : □
Simulate : -- System Default --

Time Details

Time Style : Time
Time : 00 00 HH:MM

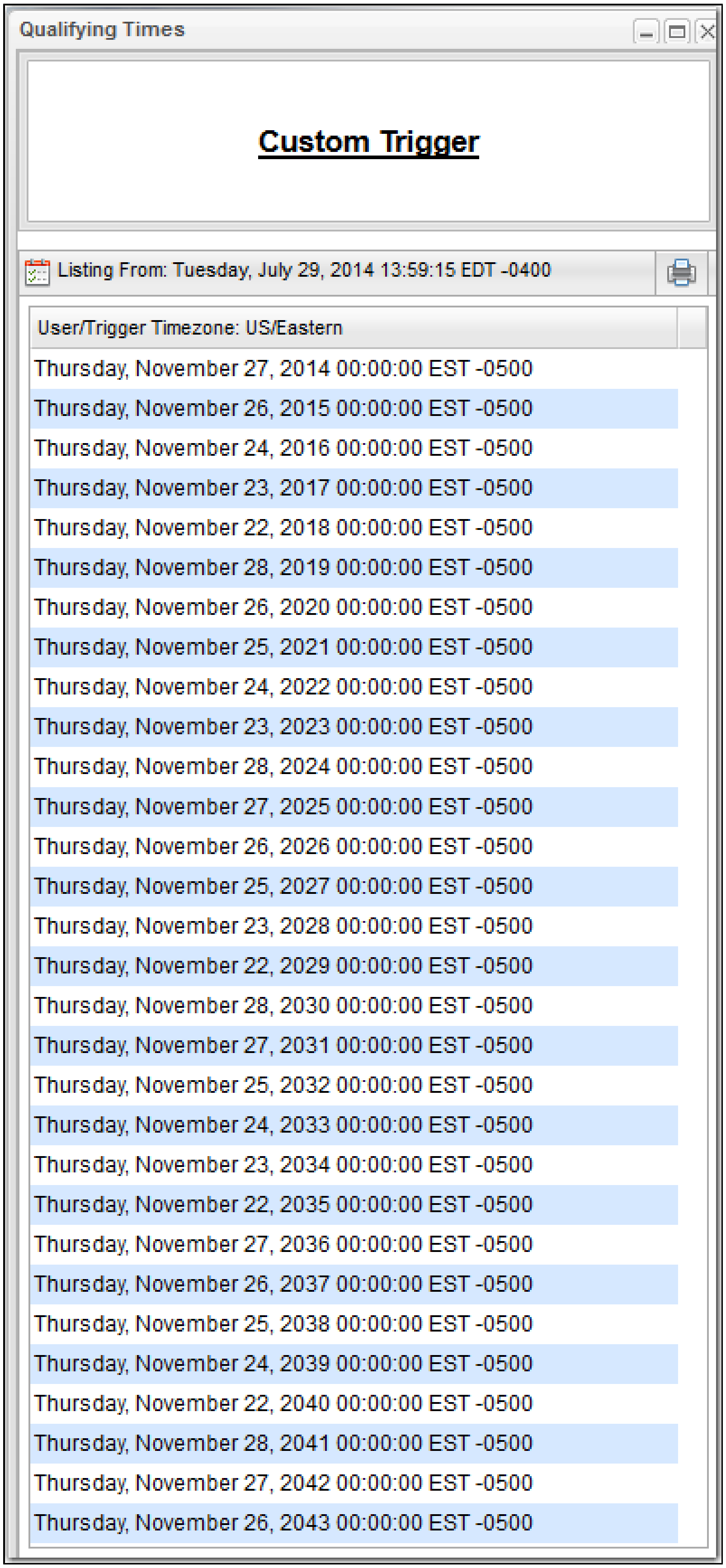
Day Details

Day Style : Complex
Date Adjective : Every
Date Noun : Thanksgiving
Date Qualifier : Year
Date Adjustment : None

Restrictions

Special Restriction : □

Step 4 Re-open **Custom Trigger** and click the **List Qualifying Times** button to see that the trigger will run the task every year on Thanksgiving.



Custom Trigger

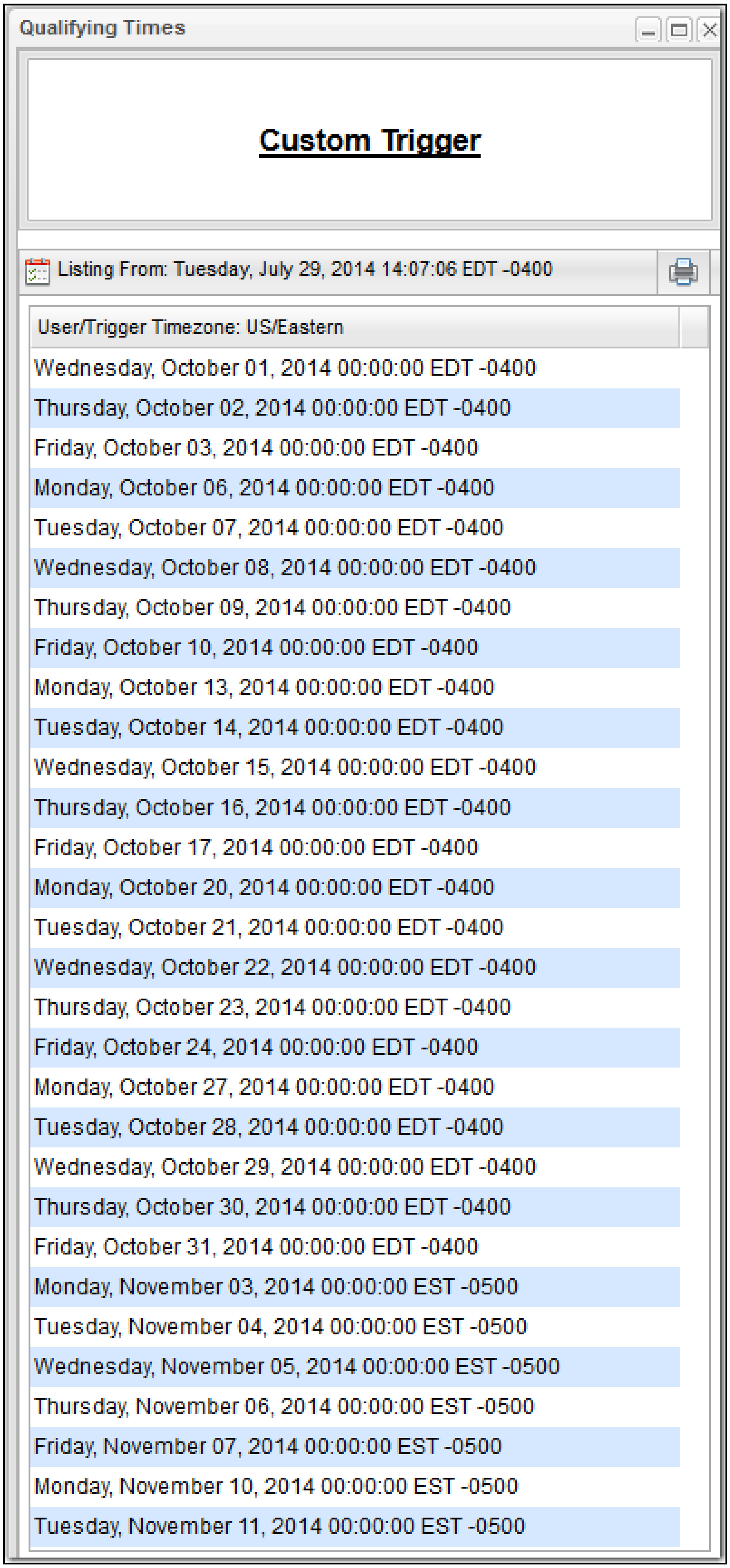
Listing From: Tuesday, July 29, 2014 13:59:15 EDT -0400

User/Trigger Timezone: US/Eastern

Thursday, November 27, 2014 00:00:00 EST -0500
Thursday, November 26, 2015 00:00:00 EST -0500
Thursday, November 24, 2016 00:00:00 EST -0500
Thursday, November 23, 2017 00:00:00 EST -0500
Thursday, November 22, 2018 00:00:00 EST -0500
Thursday, November 28, 2019 00:00:00 EST -0500
Thursday, November 26, 2020 00:00:00 EST -0500
Thursday, November 25, 2021 00:00:00 EST -0500
Thursday, November 24, 2022 00:00:00 EST -0500
Thursday, November 23, 2023 00:00:00 EST -0500
Thursday, November 28, 2024 00:00:00 EST -0500
Thursday, November 27, 2025 00:00:00 EST -0500
Thursday, November 26, 2026 00:00:00 EST -0500
Thursday, November 25, 2027 00:00:00 EST -0500
Thursday, November 23, 2028 00:00:00 EST -0500
Thursday, November 22, 2029 00:00:00 EST -0500
Thursday, November 28, 2030 00:00:00 EST -0500
Thursday, November 27, 2031 00:00:00 EST -0500
Thursday, November 25, 2032 00:00:00 EST -0500
Thursday, November 24, 2033 00:00:00 EST -0500
Thursday, November 23, 2034 00:00:00 EST -0500
Thursday, November 22, 2035 00:00:00 EST -0500
Thursday, November 27, 2036 00:00:00 EST -0500
Thursday, November 26, 2037 00:00:00 EST -0500
Thursday, November 25, 2038 00:00:00 EST -0500
Thursday, November 24, 2039 00:00:00 EST -0500
Thursday, November 22, 2040 00:00:00 EST -0500
Thursday, November 28, 2041 00:00:00 EST -0500
Thursday, November 27, 2042 00:00:00 EST -0500
Thursday, November 26, 2043 00:00:00 EST -0500

Step 5	In the **Custom Trigger** Details, change the following values: • **Date Noun** = Business Day. • **Date Qualifier** = 4th Quarter (a Custom Day period created for Custom Calendar #1)
Step 6	Click the **Update** button.

Step 7 Re-open **Custom Trigger** and click the **List Qualifying Times** button to see that the trigger will run the task every business day during the custom period, October 1 to December 31.



Qualifying Times

Custom Trigger

Listing From: Tuesday, July 29, 2014 14:07:06 EDT -0400

User/Trigger Timezone: US/Eastern

```
Wednesday, October 01, 2014 00:00:00 EDT -0400
Thursday, October 02, 2014 00:00:00 EDT -0400
Friday, October 03, 2014 00:00:00 EDT -0400
Monday, October 06, 2014 00:00:00 EDT -0400
Tuesday, October 07, 2014 00:00:00 EDT -0400
Wednesday, October 08, 2014 00:00:00 EDT -0400
Thursday, October 09, 2014 00:00:00 EDT -0400
Friday, October 10, 2014 00:00:00 EDT -0400
Monday, October 13, 2014 00:00:00 EDT -0400
Tuesday, October 14, 2014 00:00:00 EDT -0400
Wednesday, October 15, 2014 00:00:00 EDT -0400
Thursday, October 16, 2014 00:00:00 EDT -0400
Friday, October 17, 2014 00:00:00 EDT -0400
Monday, October 20, 2014 00:00:00 EDT -0400
Tuesday, October 21, 2014 00:00:00 EDT -0400
Wednesday, October 22, 2014 00:00:00 EDT -0400
Thursday, October 23, 2014 00:00:00 EDT -0400
Friday, October 24, 2014 00:00:00 EDT -0400
Monday, October 27, 2014 00:00:00 EDT -0400
Tuesday, October 28, 2014 00:00:00 EDT -0400
Wednesday, October 29, 2014 00:00:00 EDT -0400
Thursday, October 30, 2014 00:00:00 EDT -0400
Friday, October 31, 2014 00:00:00 EDT -0400
Monday, November 03, 2014 00:00:00 EST -0500
Tuesday, November 04, 2014 00:00:00 EST -0500
Wednesday, November 05, 2014 00:00:00 EST -0500
Thursday, November 06, 2014 00:00:00 EST -0500
Friday, November 07, 2014 00:00:00 EST -0500
Monday, November 10, 2014 00:00:00 EST -0500
Tuesday, November 11, 2014 00:00:00 EST -0500
```

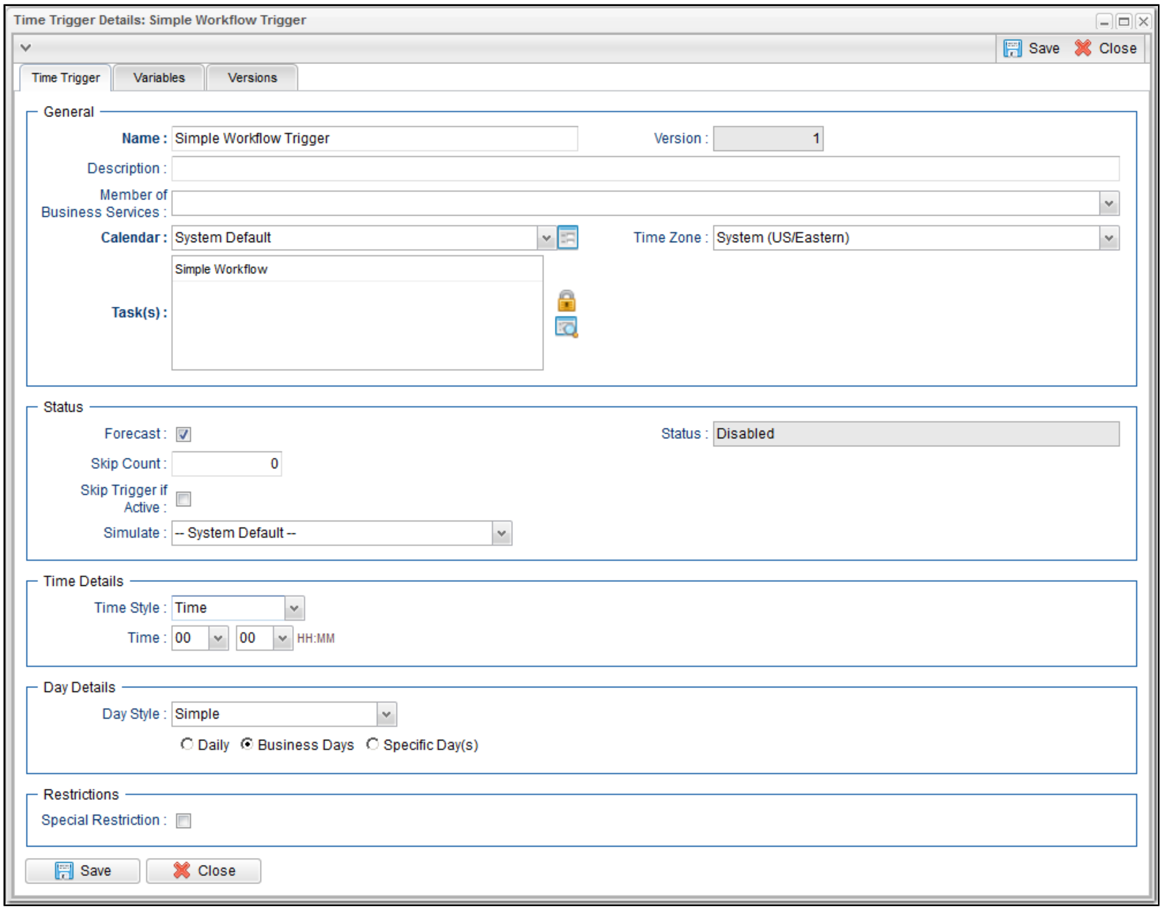
For additional information, see:

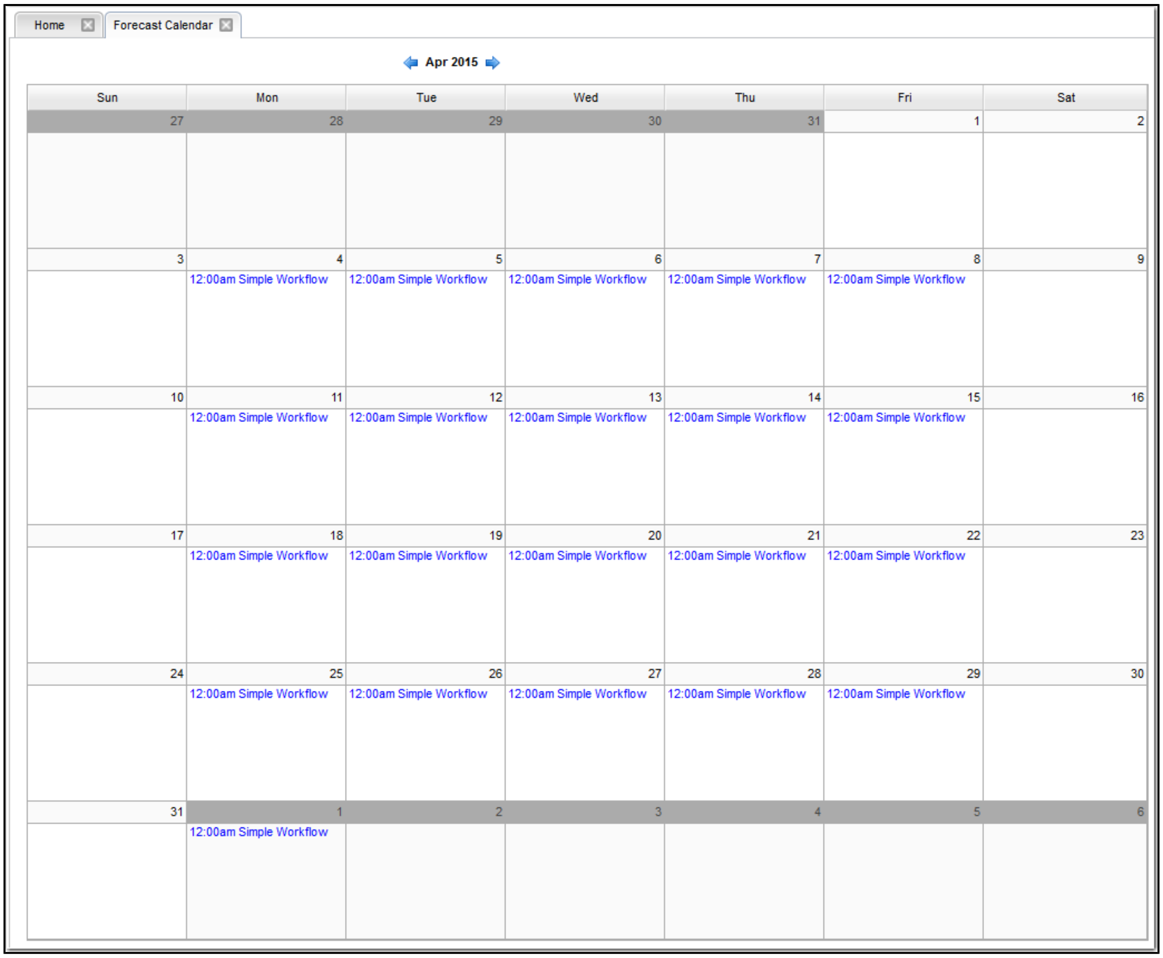
- Triggers Overview
- Creating Calendars
- Creating Custom Days

Tutorial - Generating Forecast Data

In this exercise, we will:

- Add a workflow and its tasks to the Forecast calendar.
- Run the workflow and display its forecast information.
- Update a task in the workflow and then re-run the workflow.
- Recalculate the forecast information for the workflow.

Step 1	Create a Time trigger and enter/select the following values: • **Name** = Simple Workflow Trigger. • **Task(s)** = Simple Workflow • **Forecast** = enabled • **Business Days** = enabled  Time Trigger Details: Simple Workflow Trigger Save Close Time Trigger | Variables | Versions General **Name :** Simple Workflow Trigger Version : 1 Description : Member of Business Services : **Calendar :** System Default Time Zone : System (US/Eastern) **Task(s) :** Simple Workflow Status Forecast : ☑ Status : Disabled Skip Count : 0 Skip Trigger if Active : □ Simulate : -- System Default -- Time Details Time Style : Time Time : 00 00 HH:MM Day Details Day Style : Simple ○ Daily ● Business Days ○ Specific Day(s) Restrictions Special Restriction : □ Save Close
Step 2	Save the trigger and then enable it. A trigger must be enabled in order to generate forecast data for it.
Step 3	From the Automation Center navigation pane, select **Triggers > Forecast Calendar**. The Forecast Calendar identifies Simple Workflow on the days in the forecast period, for the current month, when it will be launched by Simple Workflow Trigger. (By default, tasks within a Workflow are not displayed.)

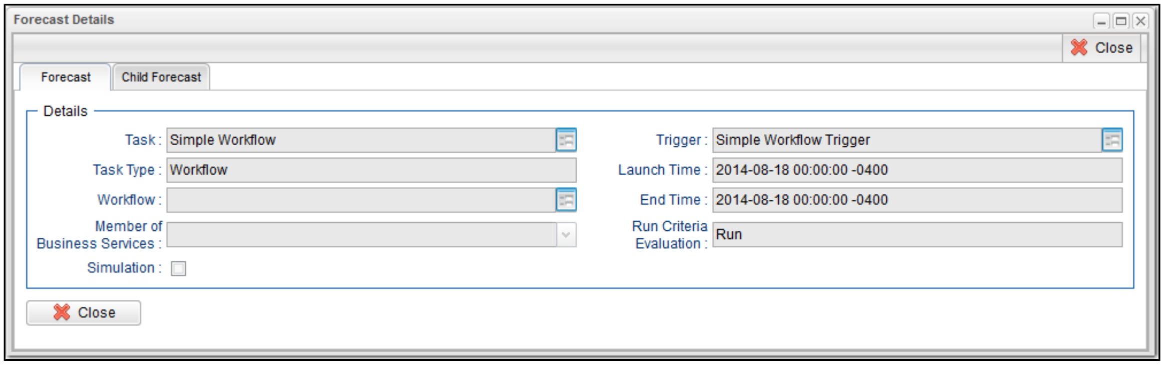


Apr 2015

Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30	31	1	2
3	4 12:00am Simple Workflow	5 12:00am Simple Workflow	6 12:00am Simple Workflow	7 12:00am Simple Workflow	8 12:00am Simple Workflow	9
10	11 12:00am Simple Workflow	12 12:00am Simple Workflow	13 12:00am Simple Workflow	14 12:00am Simple Workflow	15 12:00am Simple Workflow	16
17	18 12:00am Simple Workflow	19 12:00am Simple Workflow	20 12:00am Simple Workflow	21 12:00am Simple Workflow	22 12:00am Simple Workflow	23
24	25 12:00am Simple Workflow	26 12:00am Simple Workflow	27 12:00am Simple Workflow	28 12:00am Simple Workflow	29 12:00am Simple Workflow	30
31	1 12:00am Simple Workflow	2	3	4	5	6

Step 4

Click any Simple Workflow link in the Forecast Calendar to display a Forecast Details pop-up. Note that the Launch Time and End Time are identical; since the workflow has never been run, there is no data to support estimated times.



Details

Task : Simple Workflow

Task Type : Workflow

Workflow :

Member of Business Services :

Simulation : □

Trigger : Simple Workflow Trigger

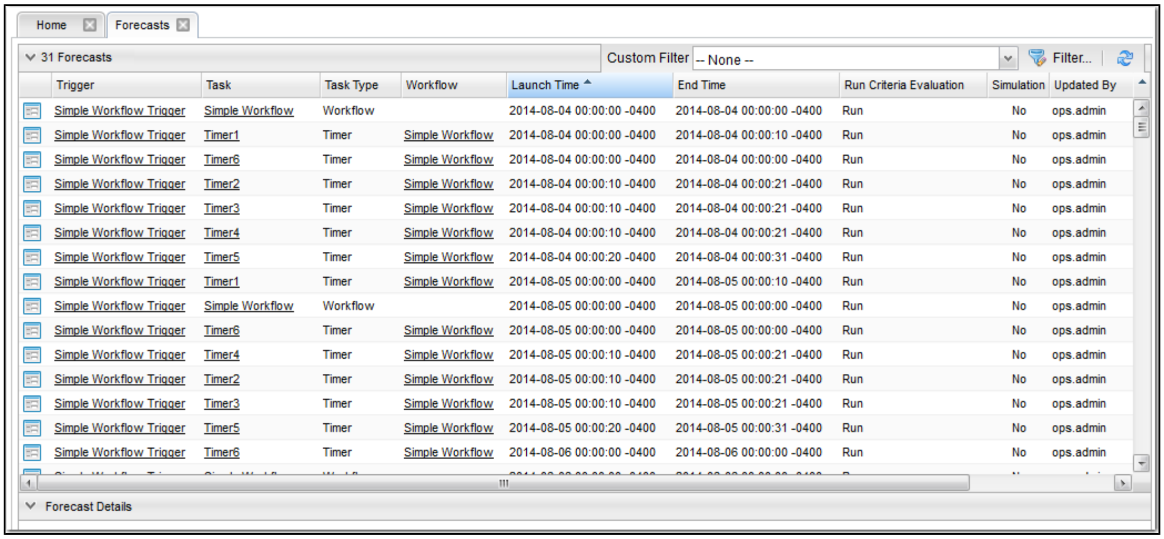
Launch Time : 2014-08-18 00:00:00 -0400

End Time : 2014-08-18 00:00:00 -0400

Run Criteria Evaluation : Run

Step 5

From the Automation Center navigation pane, select **Triggers > Forecasts**. The Forecasts list identifies Simple Workflow and every task in Simple Workflow, as well as their Launch Times and End Times, for every day in the forecast period when Simple Workflow will be launched by Simple Workflow Trigger.



31 Forecasts

Trigger	Task	Task Type	Workflow	Launch Time	End Time	Run Criteria Evaluation	Simulation	Updated By
Simple Workflow Trigger	Simple Workflow	Workflow		2014-08-04 00:00:00 -0400	2014-08-04 00:00:00 -0400	Run	No	ops.admin
Simple Workflow Trigger	Timer1	Timer	Simple Workflow	2014-08-04 00:00:00 -0400	2014-08-04 00:00:10 -0400	Run	No	ops.admin
Simple Workflow Trigger	Timer6	Timer	Simple Workflow	2014-08-04 00:00:00 -0400	2014-08-04 00:00:00 -0400	Run	No	ops.admin
Simple Workflow Trigger	Timer2	Timer	Simple Workflow	2014-08-04 00:00:10 -0400	2014-08-04 00:00:21 -0400	Run	No	ops.admin
Simple Workflow Trigger	Timer3	Timer	Simple Workflow	2014-08-04 00:00:10 -0400	2014-08-04 00:00:21 -0400	Run	No	ops.admin
Simple Workflow Trigger	Timer4	Timer	Simple Workflow	2014-08-04 00:00:10 -0400	2014-08-04 00:00:21 -0400	Run	No	ops.admin
Simple Workflow Trigger	Timer5	Timer	Simple Workflow	2014-08-04 00:00:20 -0400	2014-08-04 00:00:31 -0400	Run	No	ops.admin
Simple Workflow Trigger	Timer1	Timer	Simple Workflow	2014-08-05 00:00:00 -0400	2014-08-05 00:00:10 -0400	Run	No	ops.admin
Simple Workflow Trigger	Simple Workflow	Workflow		2014-08-05 00:00:00 -0400	2014-08-05 00:00:00 -0400	Run	No	ops.admin
Simple Workflow Trigger	Timer6	Timer	Simple Workflow	2014-08-05 00:00:00 -0400	2014-08-05 00:00:00 -0400	Run	No	ops.admin
Simple Workflow Trigger	Timer4	Timer	Simple Workflow	2014-08-05 00:00:10 -0400	2014-08-05 00:00:21 -0400	Run	No	ops.admin
Simple Workflow Trigger	Timer2	Timer	Simple Workflow	2014-08-05 00:00:10 -0400	2014-08-05 00:00:21 -0400	Run	No	ops.admin
Simple Workflow Trigger	Timer3	Timer	Simple Workflow	2014-08-05 00:00:10 -0400	2014-08-05 00:00:21 -0400	Run	No	ops.admin
Simple Workflow Trigger	Timer5	Timer	Simple Workflow	2014-08-05 00:00:20 -0400	2014-08-05 00:00:31 -0400	Run	No	ops.admin
Simple Workflow Trigger	Timer6	Timer	Simple Workflow	2014-08-06 00:00:00 -0400	2014-08-06 00:00:00 -0400	Run	No	ops.admin

Step 6

Re-display the Time Triggers list, right-click Simple Workflow Trigger, and then click Trigger Now to launch Simple Workflow.

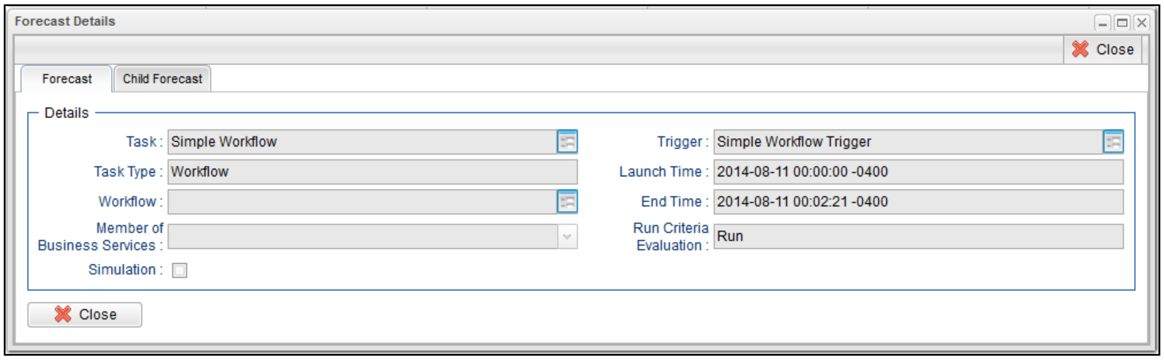
Step 7

When Simple Workflow has completed, re-display the Time Triggers list, right-click Simple Workflow Trigger, and then click Recalculate Forecast.

> ⚠ **Note**
> You also can recalculate the forecast by right-clicking Simple Workflow on the Workflow Tasks list and then clicking Recalculate Forecast.

Step 8

Re-display the Forecast Calendar and click any Simple Workflow link in the Forecast Calendar to display a Forecast Details pop-up, which now contains estimated Launch Time and End Time information based on the Workflow run just completed.



Task : Simple Workflow

Task Type : Workflow

Workflow :

Member of Business Services :

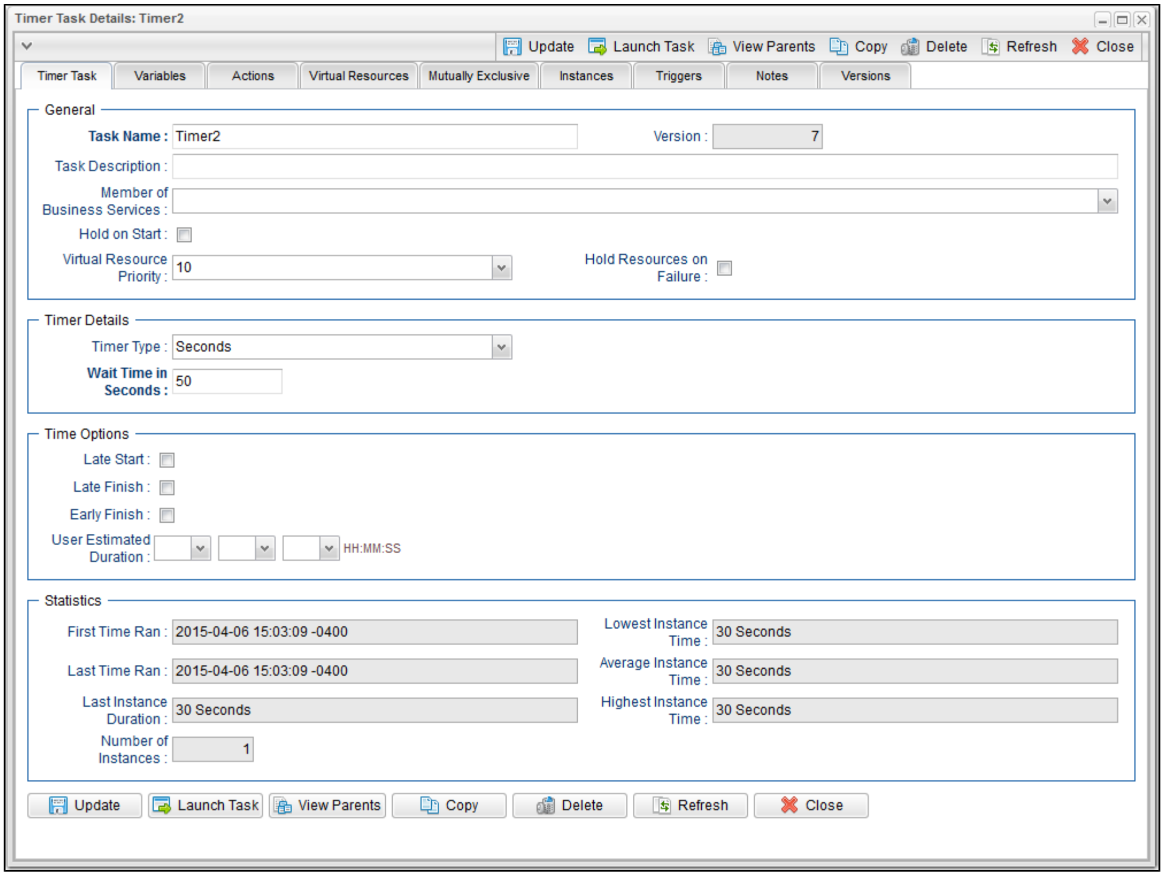
Simulation : □

Trigger : Simple Workflow Trigger

Launch Time : 2014-08-11 00:00:00 -0400

End Time : 2014-08-11 00:02:21 -0400

Run Criteria Evaluation : Run

Step 9	Open the Timer Task and change the **Time in Seconds** value from 10 to 50, and then click Update.  Update Launch Task View Parents Copy Delete Refresh Close Timer Task Variables Actions Virtual Resources Mutually Exclusive Instances Triggers Notes Versions Timer Task Details: Timer2 General **Task Name :** Timer2 Version : 7 Task Description : Member of Business Services : Hold on Start : □ Virtual Resource Priority : 10 Hold Resources on Failure : □ Timer Details Timer Type : Seconds **Wait Time in Seconds :** 50 Time Options Late Start : □ Late Finish : □ Early Finish : □ User Estimated Duration : HH:MM:SS Statistics First Time Ran : 2015-04-06 15:03:09 -0400 Lowest Instance Time : 30 Seconds Last Time Ran : 2015-04-06 15:03:09 -0400 Average Instance Time : 30 Seconds Last Instance Duration : 30 Seconds Highest Instance Time : 30 Seconds Number of Instances : 1
Step 10	Re-run Simple Workflow.
Step 11	When Simple Workflow has completed, re-calculate its Forecast; since the updated time for the Timer1 task affected the Simple Workflow End Time (the time it took to run the Workflow), the Forecast information for Simple Workflow is now obsolete.
Step 12	Re-open the Forecast Calendar and click any Simple Workflow link to see that 20 seconds has been added to the End Time.

For additional information, see:

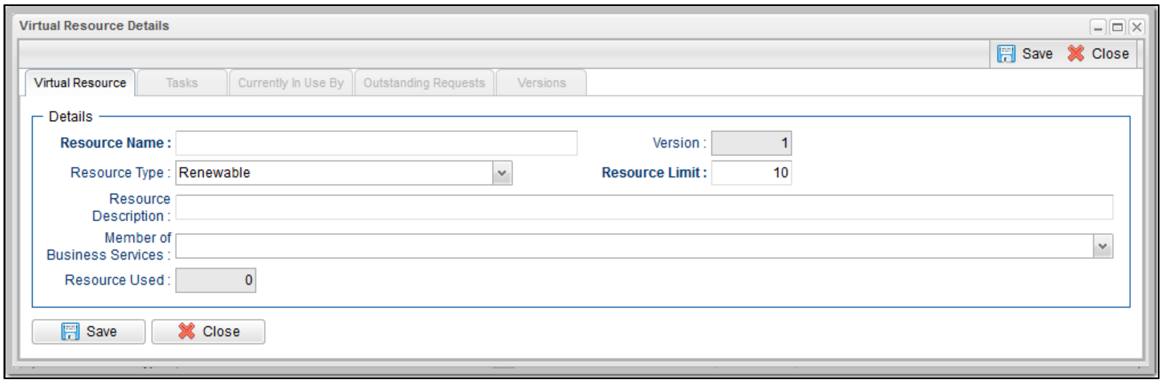
- Creating and Maintaining Workflows
- Triggers Overview
- Displaying Trigger Forecast Information

Tutorial - Setting Up a Virtual Resource

In this exercise, we will set up an imaginary resource and three imaginary tasks.

In this scenario, two of our tasks are resource-intensive, and they run on the same machine. Therefore, if one is already running when the other is launched, we want the second task to wait until the first is finished before running. However, our third task is not so resource-intensive, so we will allow this one to run at the same time as either of the other two.

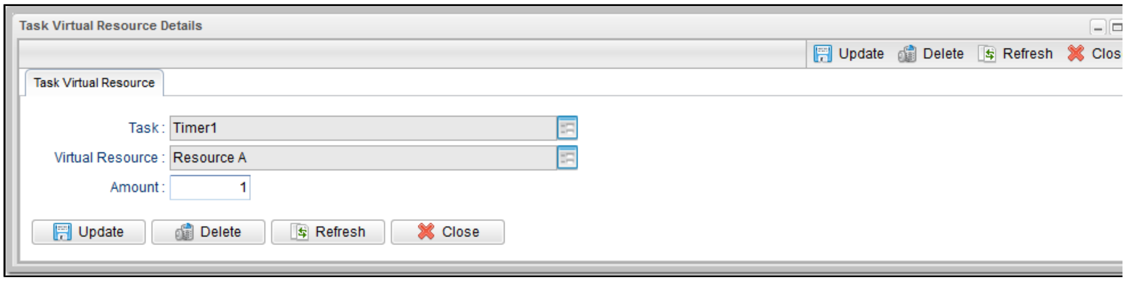
To simplify the exercise, we will use Timer tasks.

Step 1	From the Automation Center navigation pane, click **Other > Virtual Resources**. The Virtual Resources list displays.
Step 2	Click the **New** button to display an empty Virtual Resource Details and enter the following values: • **Resource Name** = Resource A • **Resource Limit** = 5
Step 3	Click the **Save** button.  Virtual Resource Details Details Resource Name : Version : 1 Resource Type : Renewable Resource Limit : 10 Resource Description : Member of Business Services : Resource Used : 0

Step 4 Update the Timer1, Timer2, and Timer3 tasks that you created in the Creating a Simple Workflow tutorial.

For Timer1:

1. Change **Time in Seconds** to 60.
2. Click the Virtual Resources tab to display the Virtual Resources list for Timer1:
   a. Click the **Edit** button, add **Resource A** to the Virtual Resources list, and click **Save**.
   b. Click the Details icon for Resource A to display its Task Virtual Resource Details.



Task Virtual Resource Details

Task : Timer1
Virtual Resource : Resource A
Amount : 1

   c. Change the **Amount** (number of resource units required from the virtual resource) from 1 to 4 and click the **Update** but

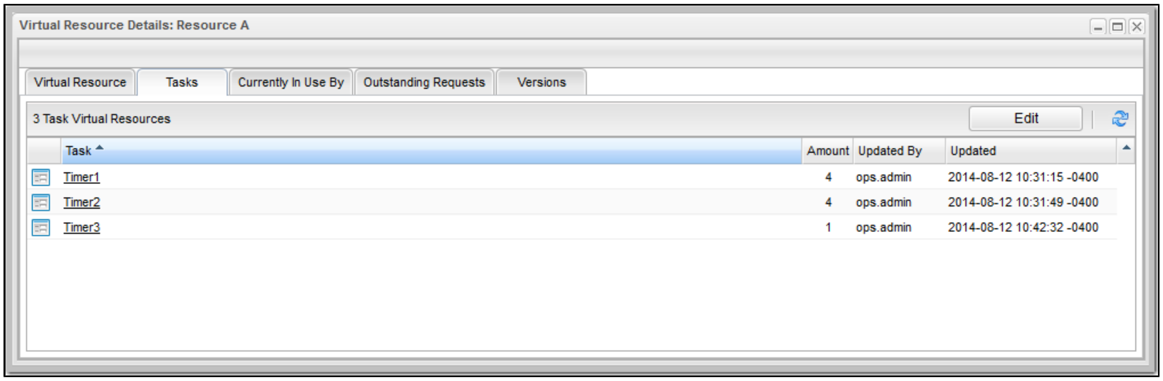
For Timer2:

1. Change **Time in Seconds** to 30.
2. Add Resource A and change the **Amount** to 4.

For Timer3:

1. Change **Time in Seconds** to 20.
2. Add Resource A and keep the **Amount** at 1.

Step 5 Open Resource A and click the Tasks tab to see that Timer1, Timer2, and Timer3 are listed.



Virtual Resource Details: Resource A

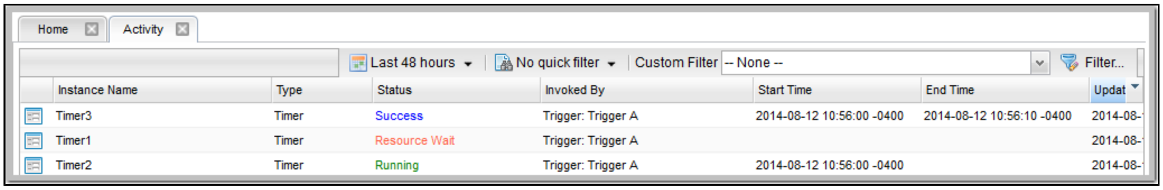
3 Task Virtual Resources

Task	Amount	Updated By	Updated
Timer1	4	ops.admin	2014-08-12 10:31:15 -0400
Timer2	4	ops.admin	2014-08-12 10:31:49 -0400
Timer3	1	ops.admin	2014-08-12 10:42:32 -0400

Step 6 Create a Time Trigger called **Trigger A**, and select Task1, Task2, and Task 3 in the **Task(s)** field, and enter a **Time** three minutes from current time.

Step 7 Click the **Save** button, right-click Trigger A on the Triggers list, and click **Enable**.

Step 8 When the trigger is satisfied, only Timer1 or Timer 2 will run, along with Timer3. When Timer1 or Timer 2 finishes, the other will run run. Display the Activity Monitor and note that Timer1 or Timer 2 is waiting in **Resource Wait** status.



Custom Filter -- None --

Instance Name	Type	Status	Invoked By	Start Time	End Time	Updat
Timer3	Timer	Success	Trigger: Trigger A	2014-08-12 10:56:00 -0400	2014-08-12 10:56:10 -0400	2014-08-
Timer1	Timer	Resource Wait	Trigger: Trigger A			2014-08-
Timer2	Timer	Running	Trigger: Trigger A	2014-08-12 10:56:00 -0400		2014-08-

Step 9 In the Virtual Resource Details, click the **Currently In Use By** tab and observe which tasks are running on this virtual resource. Note tha this display does not automatically refresh.

For additional information, see:

Virtual Resources

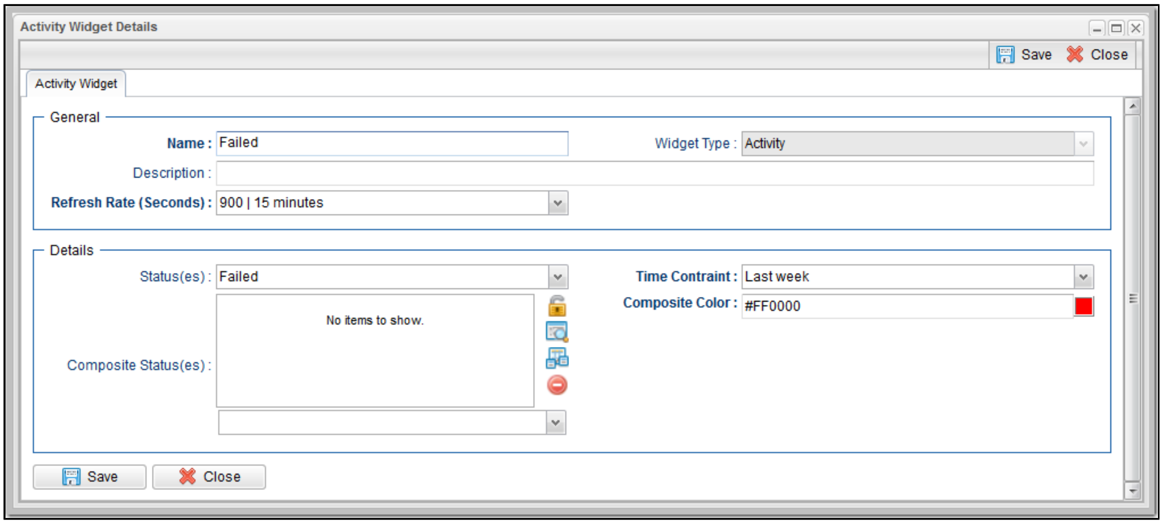
Tutorial - Creating a Widget

There are three types of Widgets, all of which can be placed on one or more Dashboards:

- System
- Activity
- Report

In this exercise, we will create an Activity Widget that identifies any failed task instances in the past week.

(You cannot create, modify, or delete a System Widget; they are provided by the Controller.)

Step 1	From the Reporting navigation pane, select **Widgets**. The Widgets list displays.
Step 2	Click the **New** button and then click **Activity Widget**. An Activity Widget Details pop-up displays.
Step 3	Enter / select the following values: • **Name** = Failed • **Refresh Rate (Seconds)** = 900 | 15 minutes • **Status(es)** = Failed • **Time Constraint** = Last week • **Composite Color** = Red  Activity Widget Details General Name : Failed Widget Type : Activity Description : Refresh Rate (Seconds) : 900 | 15 minutes Details Status(es) : Failed Time Contraint : Last week Composite Color : #FF0000 🟥 Composite Status(es) : No items to show.
Step 4	Click the **Save** button. This Widget can now be added to any Dashboard and can be selected for any Composite Widget.

For additional information, see:

- Widgets

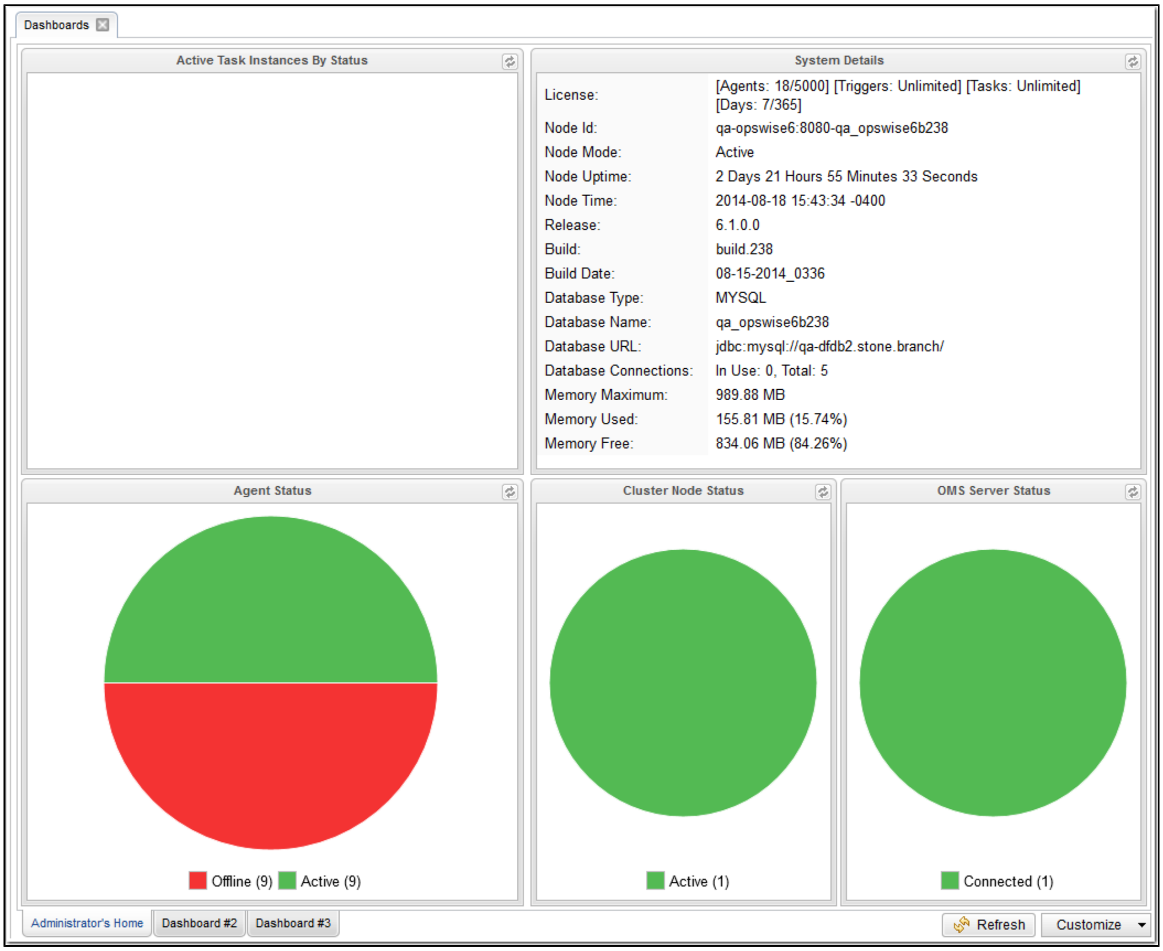
Tutorial - Creating a Dashboard and Adding Widgets

Creating a Dashboard and Adding Widgets

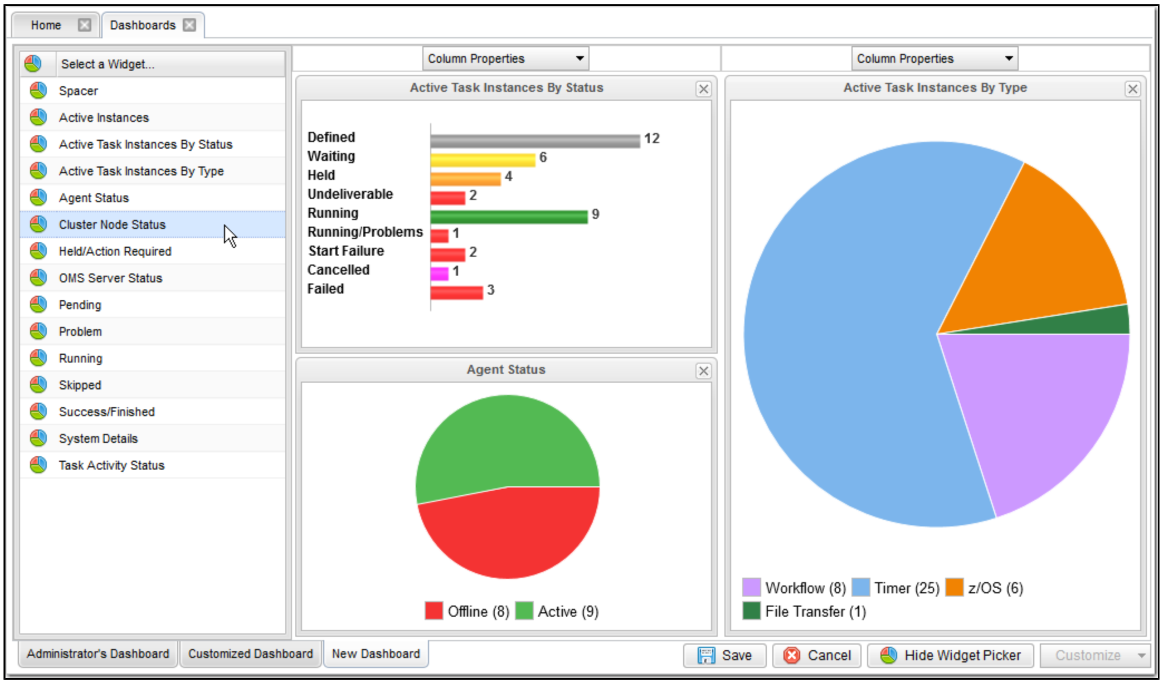
Opswise Controller provides a default Dashboard containing multiple Widgets that displays as the Home Dashboard when you log in to Opswise Controller.

You can create your own Dashboards containing any available Widgets.

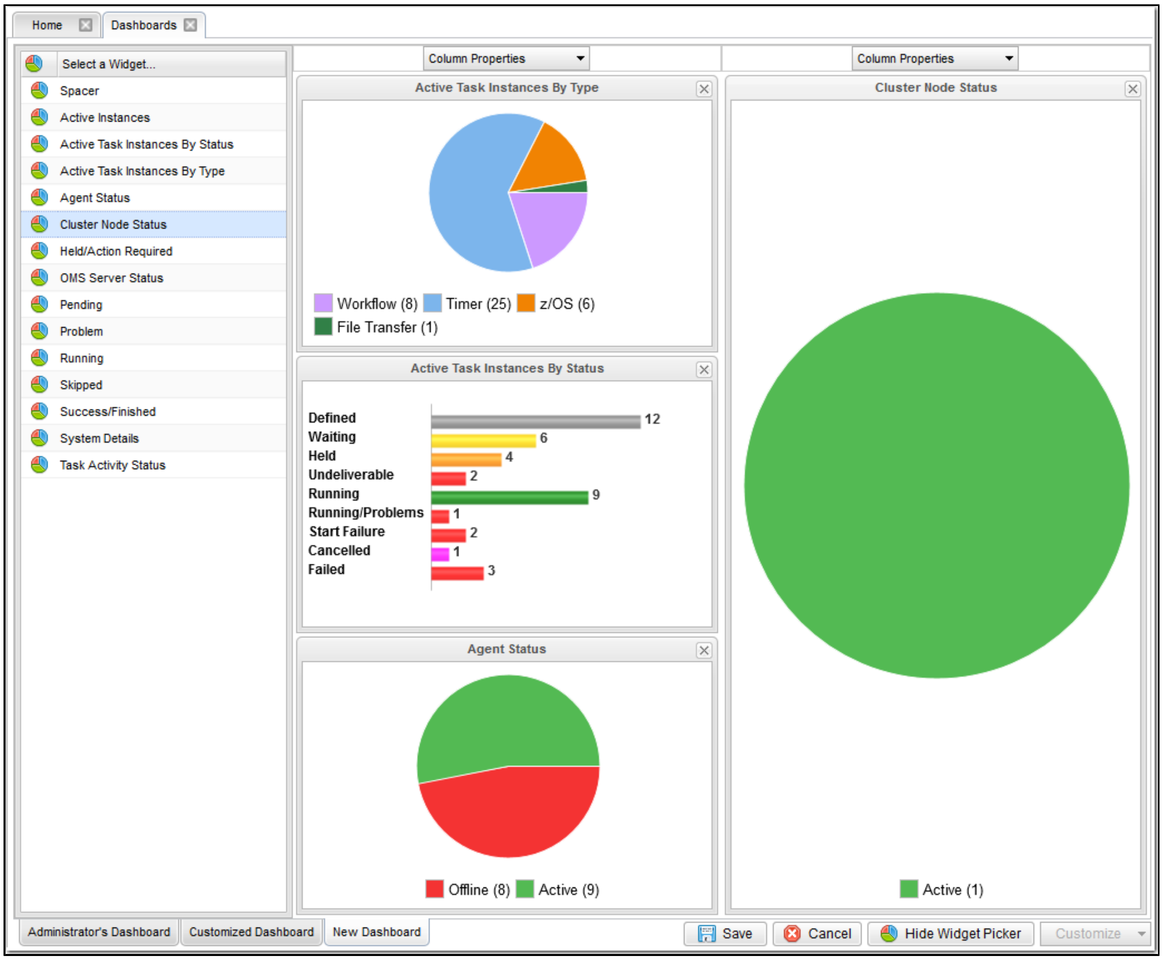
In this exercise, we are going to create a Dashboard and select Widgets for the Dashboard.

Step 1	Click the Home icon in the top right corner of any page to display the Home dashboard.  Dashboards Active Task Instances By Status System Details Agent Status 🟥 Offline (9) 🟩 Active (9) Cluster Node Status 🟩 Active (1) OMS Server Status 🟩 Connected (1) Administrator's Home Dashboard #2 Dashboard #3 Refresh Customize License: [Agents: 18/5000] [Triggers: Unlimited] [Tasks: Unlimited] [Days: 7/365] Node Id: qa-opswise6:8080-qa_opswise6b238 Node Mode: Active Node Uptime: 2 Days 21 Hours 55 Minutes 33 Seconds Node Time: 2014-08-18 15:43:34 -0400 Release: 6.1.0.0 Build: build.238 Build Date: 08-15-2014_0336 Database Type: MYSQL Database Name: qa_opswise6b238 Database URL: jdbc:mysql://qa-dfdb2.stone.branch/ Database Connections: In Use: 0, Total: 5 Memory Maximum: 989.88 MB Memory Used: 155.81 MB (15.74%) Memory Free: 834.06 MB (84.26%)
Step 2	On the **Customize** drop-down list at the bottom of the Home Page, click **New**.
Step 3	Select a name for the new Dashboard on the New Dashboard pop-up and click **OK**. A new, empty Dashboard displays.

Step 4 From the list of Widgets to the left of the Dashboard, drag and drop any of the Widgets into either column. (If you want to add more columns, click either **Column Properties** drop-down list and then click **Add Column**.)



Step 5 After you have added Widgets to your new Dashboard, you can click the **x** icon in the top right corner of any Widget to remove it from the Dashboard, or drag and drop any Widget to a new location in the Dashboard.



Step 6	Click the **Save** button to add the Dashboard.

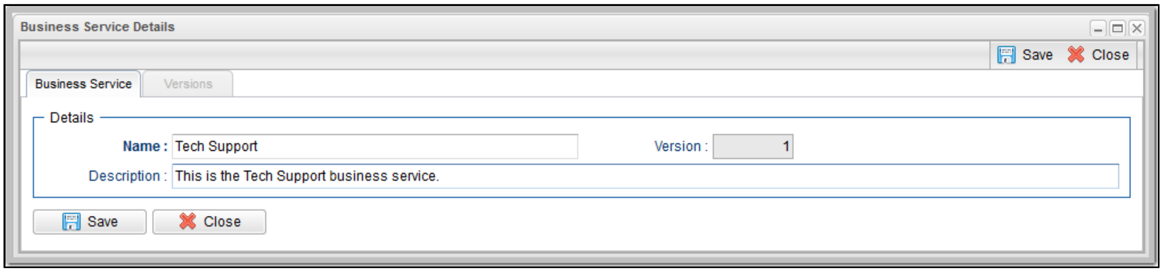
For additional information, see:

- Home Dashboard

Tutorial - Creating Business Services

Business Services are used to group records into business functions.

In this exercise, we will create two hypothetical Business Services: Tech Support and Operations.

Step 1	From the Administration navigation pane, select **Security > Business Services**. The Business Services list displays.
Step 2	Click the **New** button to display an empty Business Service Details.
Step 3	Enter the following values: • **Name** = Tech Support • **Description** = This is the Tech Support business service.
Step 4	Click the **Save** button.  Business Service Details Name : Tech Support Version : 1 Description : This is the Tech Support business service.
Step 5	Repeat steps 2 to 4 for a Business Service called **Operations**.

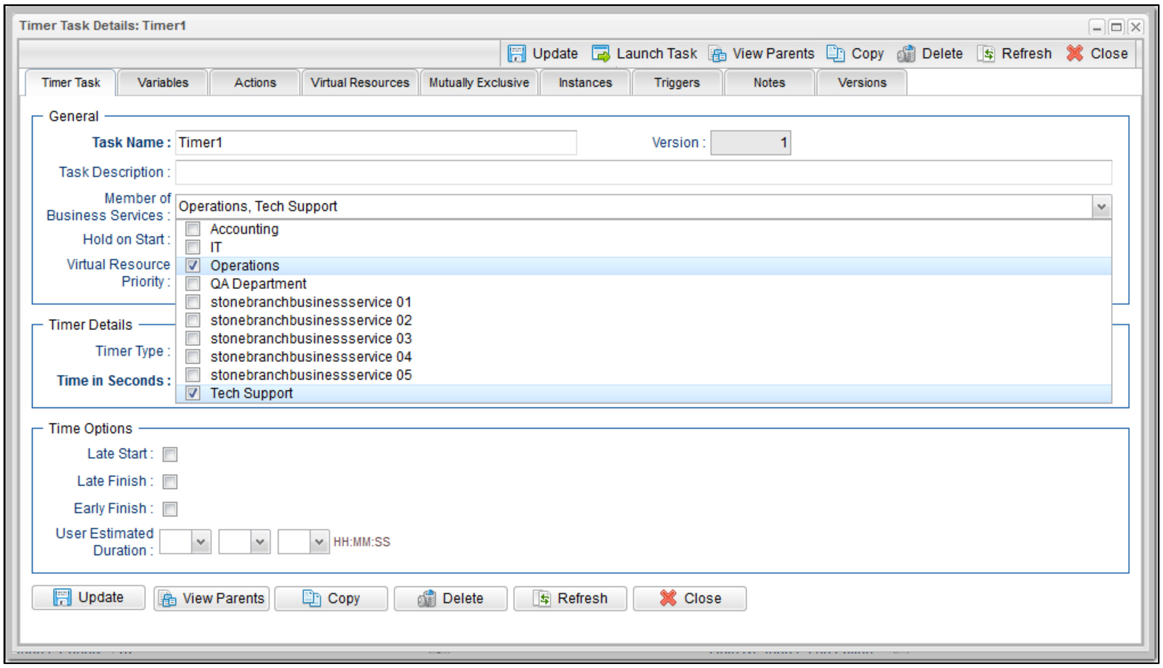
For additional information, see:

- Business Services

Tutorial - Assigning Records to Business Services

In this exercise, we will assign the Timer and Simple Workflow tasks created in the Creating a Simple Workflow tutorial to the Operations Business Service, and the SQL task and Bigger Workflow tasks created in the Running a Workflow with a Conditional Path tutorial) to the Tech Support Business Service.

See the Creating Business Services tutorial to see how these Business Services were created.

Step 1	Open the Timer task called **Timer1**, which you created in the Creating a Simple Workflow tutorial.
Step 2	From the **Member of Business Services** drop-down list, select Tech Support and Operations.  Timer Task Details: Timer1 Update Launch Task View Parents Copy Delete Refresh Close Timer Task Variables Actions Virtual Resources Mutually Exclusive Instances Triggers Notes Versions General Task Name : Timer1 Version : 1 Task Description : Member of Business Services : Operations, Tech Support □ Accounting □ IT ☑ Operations □ QA Department □ stonebranchbusinessservice 01 □ stonebranchbusinessservice 02 □ stonebranchbusinessservice 03 □ stonebranchbusinessservice 04 □ stonebranchbusinessservice 05 ☑ Tech Support Hold on Start : Virtual Resource Priority : Timer Details Timer Type : Time in Seconds : Time Options Late Start : □ Late Finish : □ Early Finish : □ User Estimated Duration : HH:MM:SS
Step 3	Click the **Update** button.
Step 4	Repeat steps 1 to 3 for the **Timer2** and **Timer3** tasks and the **Simple Workflow** Workflow, all of which you also created in the Creating a Simple Workflow tutorial.

For additional information, see:

- Business Services

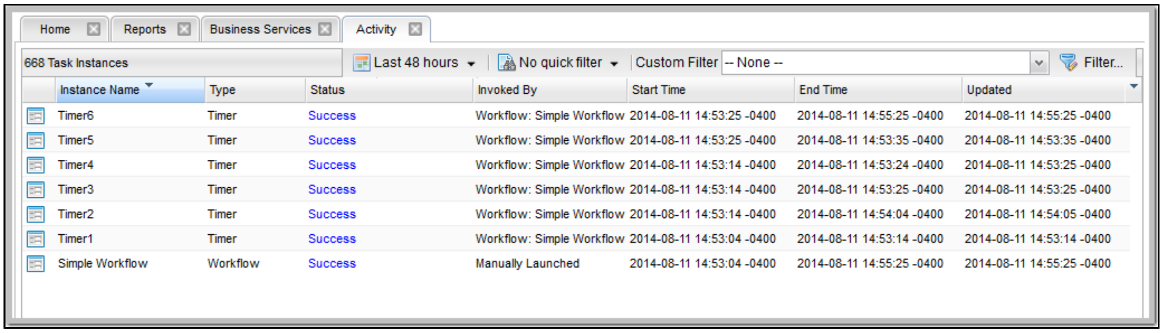
Tutorial - Viewing Activity by Business Service

Introduction

In this exercise, we will launch the **Simple Workflow** Workflow (created in the Creating a Simple Workflow tutorial and, on the Activity Monitor, display only tasks assigned to the
Operations Business Service (see Assigning Records to Business Services|Tutorial - Assigning Records to Business Services] tutorial.

Step 1 Run the **Simple Workflow** Workflow.

Step 2 Display the Activity Monitor, which will list the **Simple Workflow** and all of its tasks.



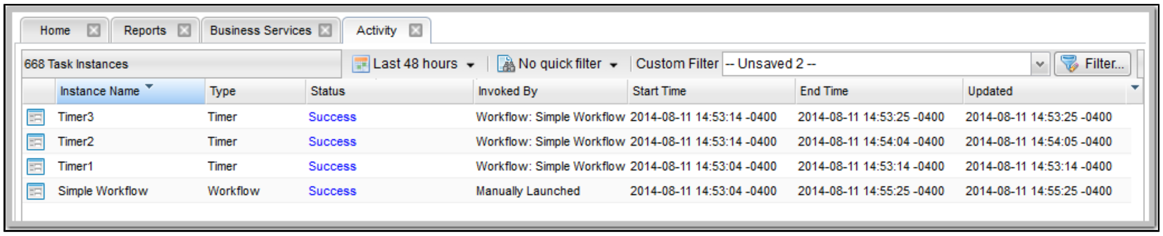
668 Task Instances | Last 48 hours | No quick filter | Custom Filter -- None --

Instance Name	Type	Status	Invoked By	Start Time	End Time	Updated
Timer6	Timer	Success	Workflow: Simple Workflow	2014-08-11 14:53:25 -0400	2014-08-11 14:55:25 -0400	2014-08-11 14:55:25 -0400
Timer5	Timer	Success	Workflow: Simple Workflow	2014-08-11 14:53:25 -0400	2014-08-11 14:53:35 -0400	2014-08-11 14:53:35 -0400
Timer4	Timer	Success	Workflow: Simple Workflow	2014-08-11 14:53:14 -0400	2014-08-11 14:53:24 -0400	2014-08-11 14:53:25 -0400
Timer3	Timer	Success	Workflow: Simple Workflow	2014-08-11 14:53:14 -0400	2014-08-11 14:53:25 -0400	2014-08-11 14:53:25 -0400
Timer2	Timer	Success	Workflow: Simple Workflow	2014-08-11 14:53:14 -0400	2014-08-11 14:54:04 -0400	2014-08-11 14:54:05 -0400
Timer1	Timer	Success	Workflow: Simple Workflow	2014-08-11 14:53:04 -0400	2014-08-11 14:53:14 -0400	2014-08-11 14:53:14 -0400
Simple Workflow	Workflow	Success	Manually Launched	2014-08-11 14:53:04 -0400	2014-08-11 14:55:25 -0400	2014-08-11 14:55:25 -0400

Step 3 Apply the following Filter to the list of tasks:

- Member of Business Services
- contains
- Operations

The Activity Monitor now displays only tasks assigned to **Operations** Business Service.



668 Task Instances | Last 48 hours | No quick filter | Custom Filter -- Unsaved 2 --

Instance Name	Type	Status	Invoked By	Start Time	End Time	Updated
Timer3	Timer	Success	Workflow: Simple Workflow	2014-08-11 14:53:14 -0400	2014-08-11 14:53:25 -0400	2014-08-11 14:53:25 -0400
Timer2	Timer	Success	Workflow: Simple Workflow	2014-08-11 14:53:14 -0400	2014-08-11 14:54:04 -0400	2014-08-11 14:54:05 -0400
Timer1	Timer	Success	Workflow: Simple Workflow	2014-08-11 14:53:04 -0400	2014-08-11 14:53:14 -0400	2014-08-11 14:53:14 -0400
Simple Workflow	Workflow	Success	Manually Launched	2014-08-11 14:53:04 -0400	2014-08-11 14:55:25 -0400	2014-08-11 14:55:25 -0400

Tutorial - Creating a Report

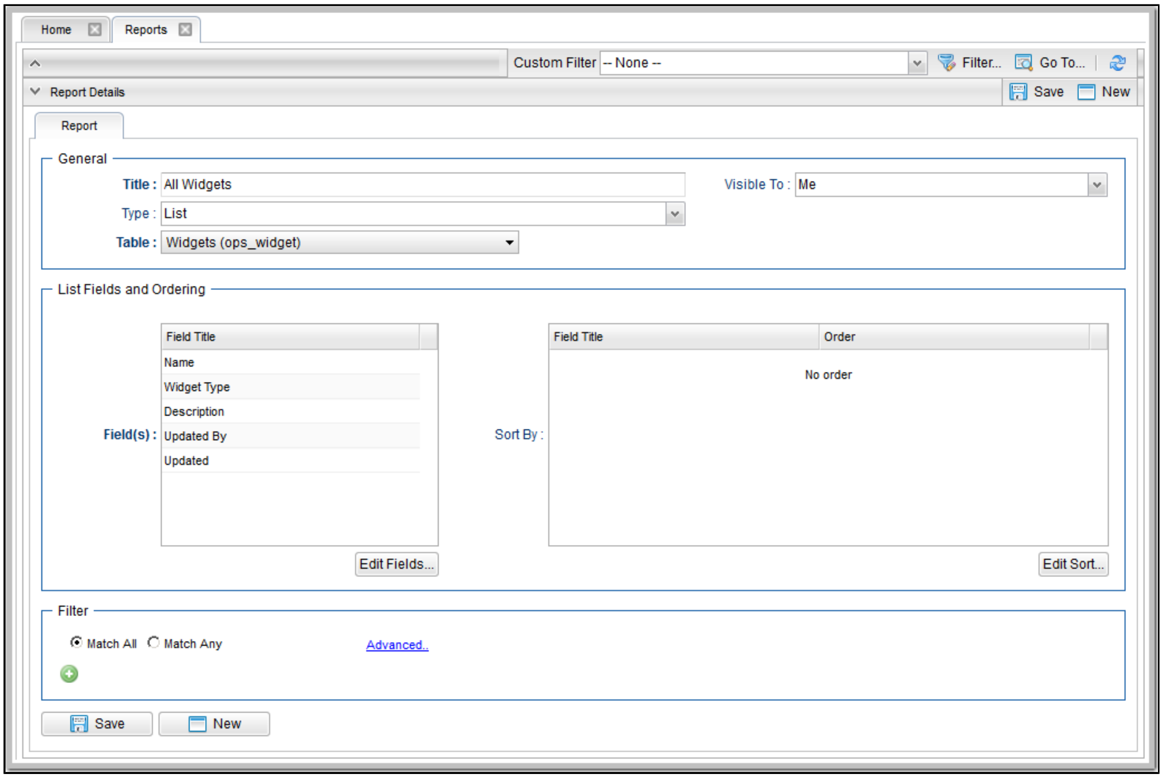
In this exercise, we will create a report for Widgets.

Step 1 From the Reporting navigation pane, select **Reports**. The Reports list displays.

Step 2 In the empty Report Details below the list, enter / select the following values:

- **Title** = All Widgets
- **Table** = Widgets (ops_widget)
- **Field(s) = (pre-selected fields that display when you click *Edit Fields**)

Step 3 Click the **Save** button.



Custom Filter: -- None --

General

Title : All Widgets

Visible To : Me

Type : List

Table : Widgets (ops_widget)

List Fields and Ordering

Field(s) :

Field Title
Name
Widget Type
Description
Updated By
Updated

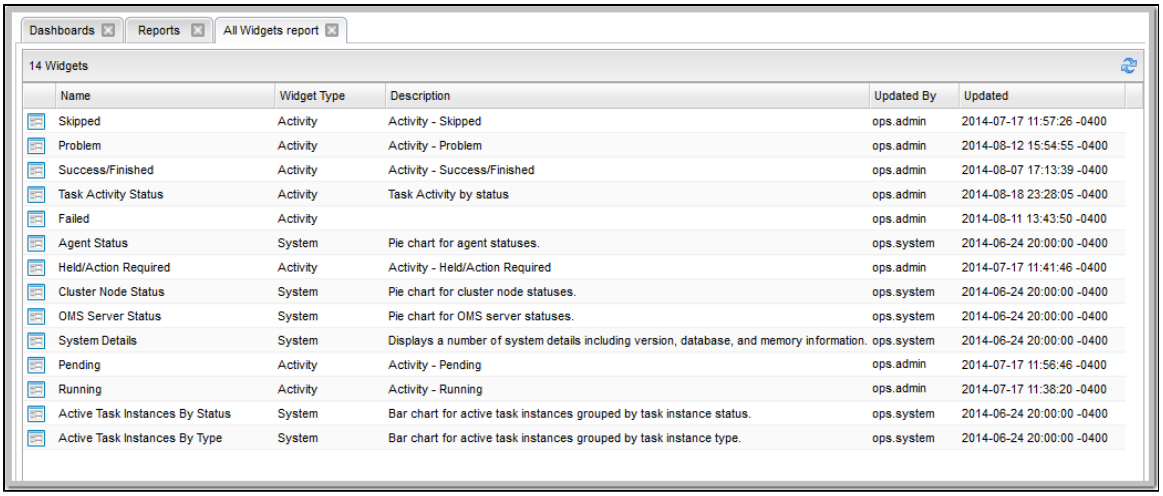
Sort By :

Field Title	Order
No order	

Filter

● Match All ○ Match Any

Step 4 Click the **Run** button to run the report, which displays under a new tab.

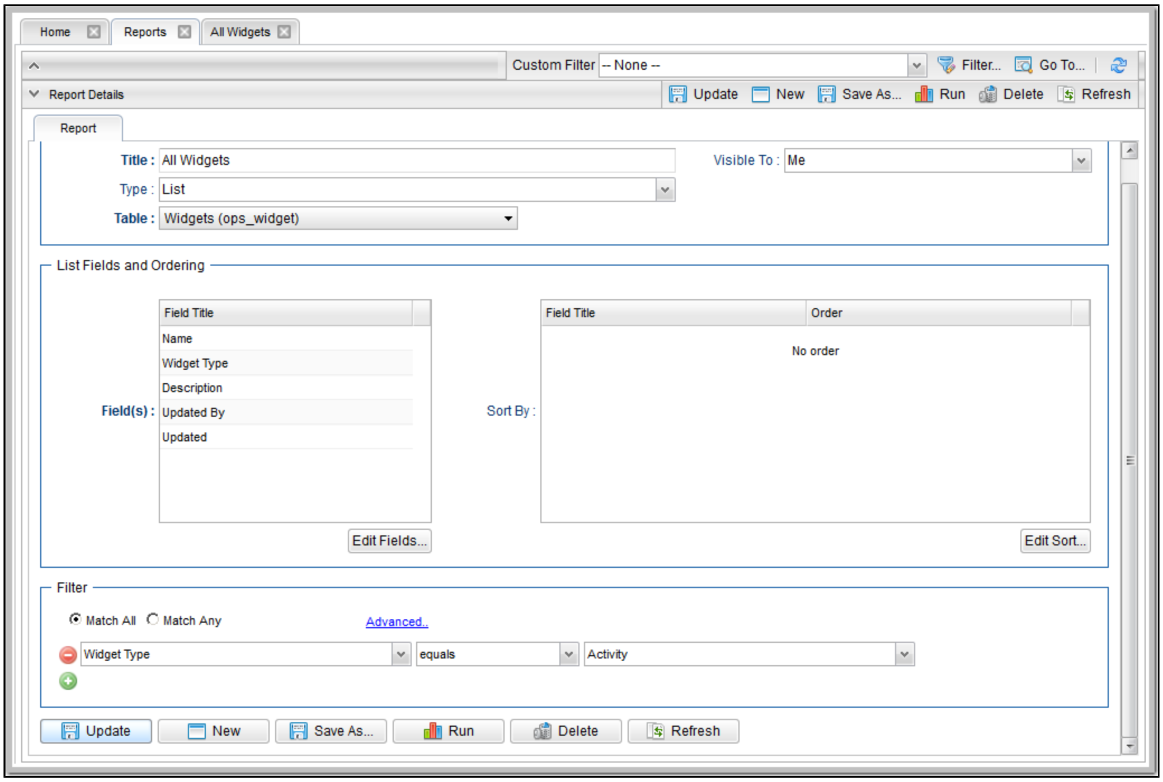


14 Widgets

Name	Widget Type	Description	Updated By	Updated
Skipped	Activity	Activity - Skipped	ops.admin	2014-07-17 11:57:26 -0400
Problem	Activity	Activity - Problem	ops.admin	2014-08-12 15:54:55 -0400
Success/Finished	Activity	Activity - Success/Finished	ops.admin	2014-08-07 17:13:39 -0400
Task Activity Status	Activity	Task Activity by status	ops.admin	2014-08-18 23:28:05 -0400
Failed	Activity		ops.admin	2014-08-11 13:43:50 -0400
Agent Status	System	Pie chart for agent statuses.	ops.system	2014-06-24 20:00:00 -0400
Held/Action Required	Activity	Activity - Held/Action Required	ops.admin	2014-07-17 11:41:46 -0400
Cluster Node Status	System	Pie chart for cluster node statuses.	ops.system	2014-06-24 20:00:00 -0400
OMS Server Status	System	Pie chart for OMS server statuses.	ops.system	2014-06-24 20:00:00 -0400
System Details	System	Displays a number of system details including version, database, and memory information.	ops.system	2014-06-24 20:00:00 -0400
Pending	Activity	Activity - Pending	ops.admin	2014-07-17 11:56:46 -0400
Running	Activity	Activity - Running	ops.admin	2014-07-17 11:38:20 -0400
Active Task Instances By Status	System	Bar chart for active task instances grouped by task instance status.	ops.system	2014-06-24 20:00:00 -0400
Active Task Instances By Type	System	Bar chart for active task instances grouped by task instance type.	ops.system	2014-06-24 20:00:00 -0400

Step 5 Return to the Report Details and select the following Filter for the report:

- Widget Type
- equals
- Activity



Title : All Widgets

Visible To : Me

Type : List

Table : Widgets (ops_widget)

Custom Filter -- None --

Field(s) :

Field Title
Name
Widget Type
Description
Updated By
Updated

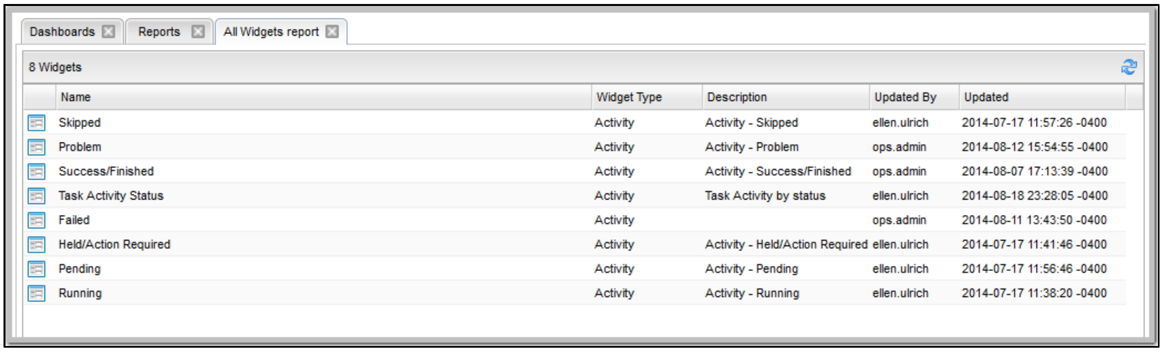
Sort By :

Field Title	Order
No order	

● Match All ○ Match Any

Widget Type | equals | Activity

Step 6 Click the **Update** button, and then click the **Run** button to display the report under a new tab.



8 Widgets

Name	Widget Type	Description	Updated By	Updated
Skipped	Activity	Activity - Skipped	ellen.ulrich	2014-07-17 11:57:26 -0400
Problem	Activity	Activity - Problem	ops.admin	2014-08-12 15:54:55 -0400
Success/Finished	Activity	Activity - Success/Finished	ops.admin	2014-08-07 17:13:39 -0400
Task Activity Status	Activity	Task Activity by status	ellen.ulrich	2014-08-18 23:28:05 -0400
Failed	Activity		ops.admin	2014-08-11 13:43:50 -0400
Held/Action Required	Activity	Activity - Held/Action Required	ellen.ulrich	2014-07-17 11:41:46 -0400
Pending	Activity	Activity - Pending	ellen.ulrich	2014-07-17 11:56:46 -0400
Running	Activity	Activity - Running	ellen.ulrich	2014-07-17 11:38:20 -0400

For additional information, see:

- Reports

Tutorial - Creating a Report Based on Business Services

In this exercise, we will create two Activity reports so that users from our hypothetical Operations and Tech Support departments (see the Creating Business Services tutorials) can view activity related to their organizations.

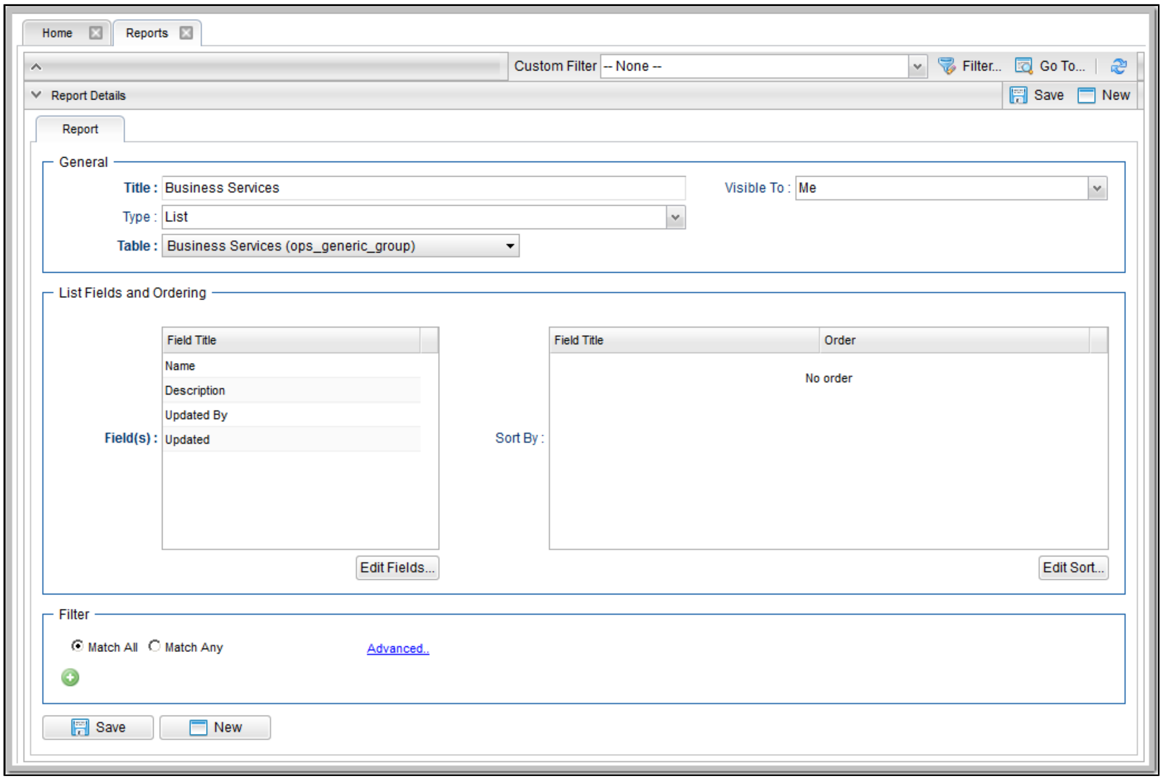
Step 1 From the Reporting navigation pane, select **Reports**. The Reports list displays.

Step 2 Click the **New** button to display empty Report Details.

Step 3 Enter / select the following values:

- **Title** - Business Services
- **Table** = Business Services (ops_generic_group)
- **Field(s)** = (pre-selected fields that display when you click the **Edit Fields** button)

Step 4 Click the **Save** button.



Custom Filter -- None --

Title : Business Services

Visible To : Me

Type : List

Table : Business Services (ops_generic_group)

Field(s) :

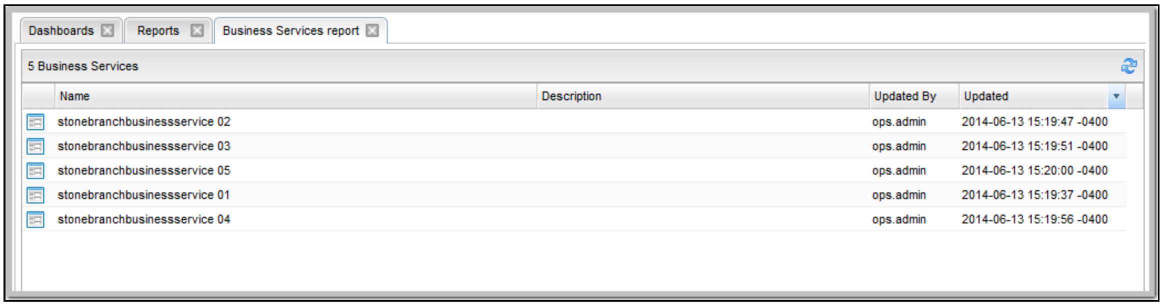
Field Title
Name
Description
Updated By
Updated

Sort By :

Field Title	Order
No order	

Filter: ● Match All ○ Match Any Advanced..

Step 5 Click the **Run** button. A Business Services report displays under a new tab.



5 Business Services

Name	Description	Updated By	Updated
stonebranchbusinessservice 02		ops.admin	2014-06-13 15:19:47 -0400
stonebranchbusinessservice 03		ops.admin	2014-06-13 15:19:51 -0400
stonebranchbusinessservice 05		ops.admin	2014-06-13 15:20:00 -0400
stonebranchbusinessservice 01		ops.admin	2014-06-13 15:19:37 -0400
stonebranchbusinessservice 04		ops.admin	2014-06-13 15:19:56 -0400

For additional information, see:

- Reports

Tutorial - Creating Users and Assigning Roles and Permissions

Introduction

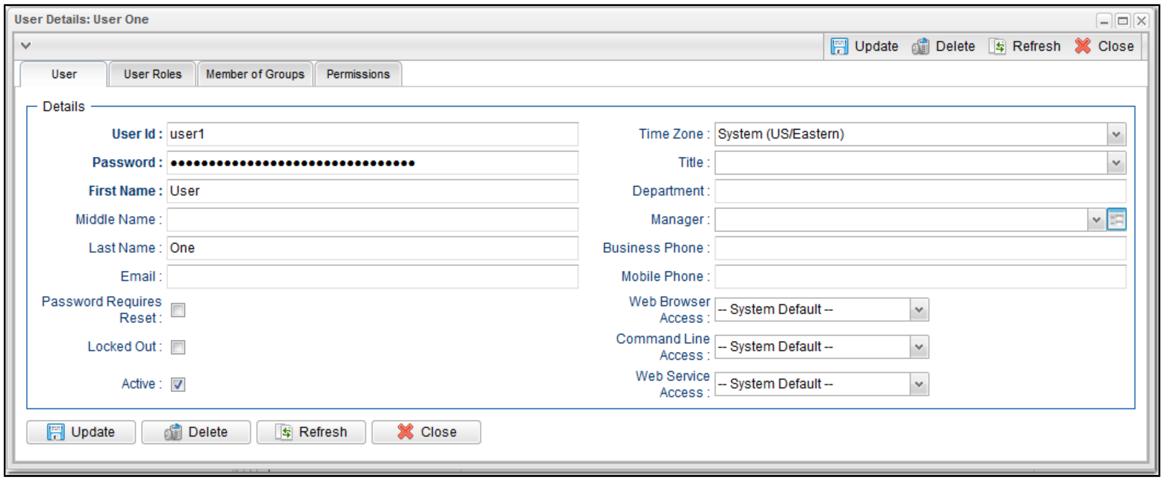
In this exercise, we will create some users related to the Operations and Tech Support departments created in the Creating Business Services tutorial.

We also will assign access and management rights via user roles and Opswise Controller permissions:

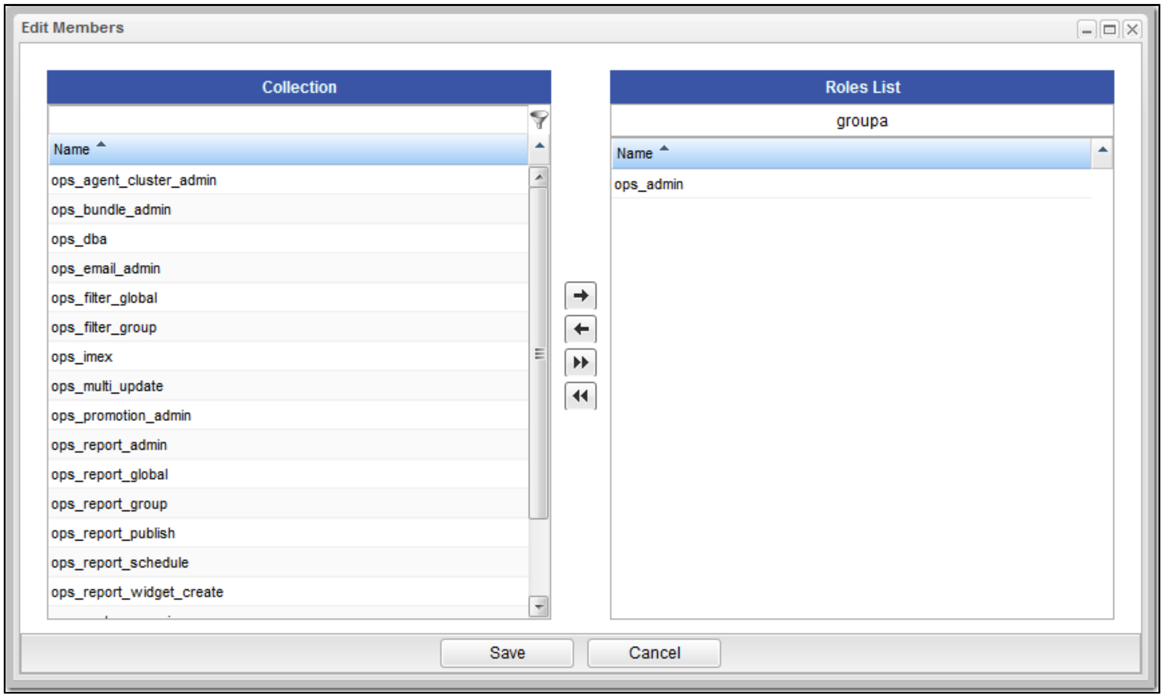
- Roles are pre-defined groups of permissions that control access to users, reports (filters), gauges, bundles, and promotions.
- Permissions control who can add, change, delete and control Controller tasks, task instances, triggers, Agents, calendars, and credentials.

Create New Users

In this exercise, we will create a new user and assign different permissions to it.

Step 1	From the Administration navigation pane, click **Security > Users**. The User list displays.
Step 2	Click the **New** button to display empty User Details for a new user and enter / select the following values: - **User Id** = user1 - **First Name** = User - **Last Name** = One - **Password** = 123  User Details: User One Details User Id : user1 Password : •••••••••••••••••••••••••••••••• First Name : User Middle Name : Last Name : One Email : Password Requires Reset : □ Locked Out : □ Active : ☑ Time Zone : System (US/Eastern) Title : Department : Manager : Business Phone : Mobile Phone : Web Browser Access : -- System Default -- Command Line Access : -- System Default -- Web Service Access : -- System Default -- Update Delete Refresh Close User User Roles Member of Groups Permissions
Step 3	Click the **Save** button, log out of the Controller and then log in as user1.
Step 4	Click on several areas of the user interface. Since user1 has not been assigned any permissions, user1 can view only a limited number of lists and records, and cannot create, modify, or delete any records.
Step 5	Log out of the Controller and log in as ops.admin.
Step 6	Open the user1 record and click the **User Roles** tab.
Step 7	Click **Edit**.

Step 8 Move the **ops_admin** role to the Roles List and click **Save** to provide user1 with full administrative permissions.


Edit Members

Collection

Name

ops_agent_cluster_admin
ops_bundle_admin
ops_dba
ops_email_admin
ops_filter_global
ops_filter_group
ops_imex
ops_multi_update
ops_promotion_admin
ops_report_admin
ops_report_global
ops_report_group
ops_report_publish
ops_report_schedule
ops_report_widget_create

Roles List

groupa

Name

ops_admin

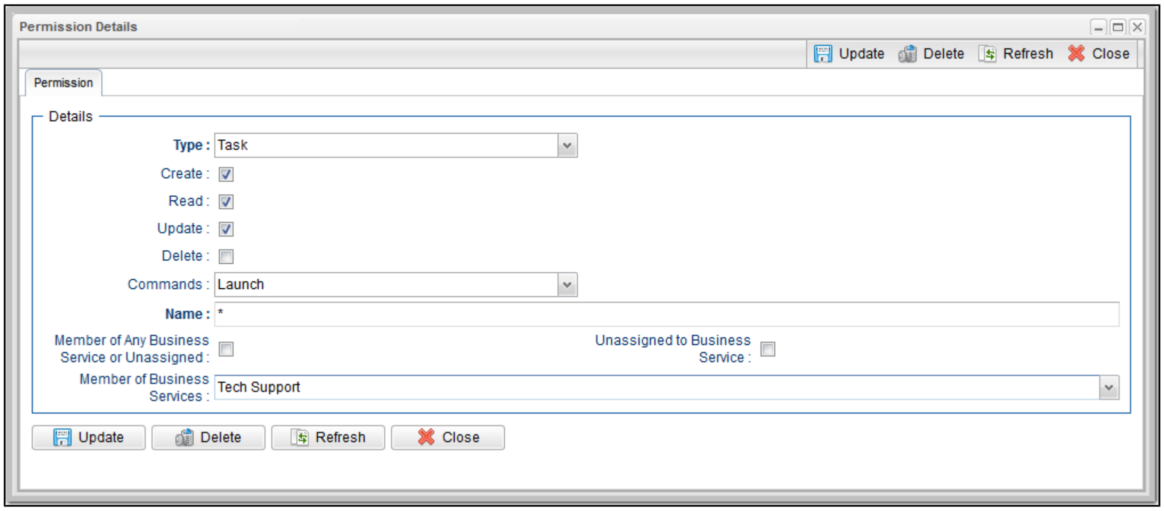
Step 9 Click the User tab and then click the **Update** button.

Step 10 Log out and log back in as user1 to verify that user1 has the same permissions as ops.admin.

Step 11 Log out and log back in as ops.admin, open the user1 record, and remove the **ops.admin** role.

Step 12 Click the Permissions tab, click the **New** button, and in the Permissions Details select the following values:

- **Type** = Task
- **Create** = enabled
- **Read** = enabled
- **Update** = enabled
- **Commands** = Launch
- **Unassigned to Business Service** = disabled
- **Member of Business Services** = Tech Support


Permission Details

Details

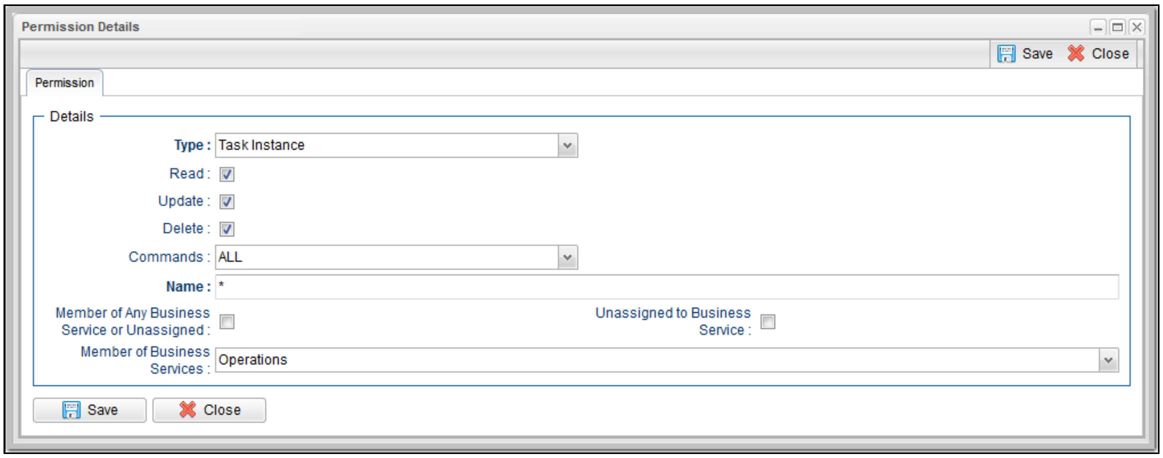
Type : Task
Create : ☑
Read : ☑
Update : ☑
Delete : □
Commands : Launch
Name : *
Member of Any Business Service or Unassigned : □
Unassigned to Business Service : □
Member of Business Services : Tech Support

Step 13 Click **Save**, log out of the Controller, and log in as user1.

Step 14 user1 now will be able to see the tasks assigned to the Tech Support group, and launch those tasks. However, user1 cannot see them on the Activity Monitor because user1 was not given permissions on Task Instances.

Assign Permissions to Groups of Users

In this exercise we will assign our last user to a group, then assign permissions to the group instead of to the user.

Step 1	Open the user1 record .
Step 2	Click the **Member of Groups** tab to display a list of groups that user1 belongs to.
Step 3	Click the **New** button to display Group Details for a new group.
Step 4	In the **Name** field, enter Group1, and then click the **Save** button. The Member of Groups list now shoes Group1.
Step 5	Open Group1 and click the **Permissions** tab to display the list (currently empty) of permissions for Group1.
Step 6	Click the **New** button and on the Permissions Details, enter / select the following values: - **Type** = Task Instance - **Read, Update, Delete** = enabled - **Commands** = All - **Business Services** = Operations - **Unassigned to Business Service** = disabled These permissions provides all users in the Group1 full permissions on all activity (task instances) related to the Operations Business Service. Any users you assign to Group1 will inherit these permissions.  Permission Details Save Close Permission Details Type : Task Instance Read : ☑ Update : ☑ Delete : ☑ Commands : ALL Name : * Member of Any Business Service or Unassigned : ☐ Unassigned to Business Service : ☐ Member of Business Services : Operations Save Close
Step 7	Click **Save**, log out, and then log in as user1 to check the permissions.

For additional information, see:

- Users and Groups

Tutorial - Creating User Groups and Assigning Permissions

In this exercise, we will create users and user groups, then assign permissions to the groups instead of directly to the users.

Step 1 Create the following three users:

- stonebranch-user-01
- stonebranch-user-02
- stonebranch-user-03

Step 2 Select **Users > Groups** and create a group called **stonebranch-group-01**.

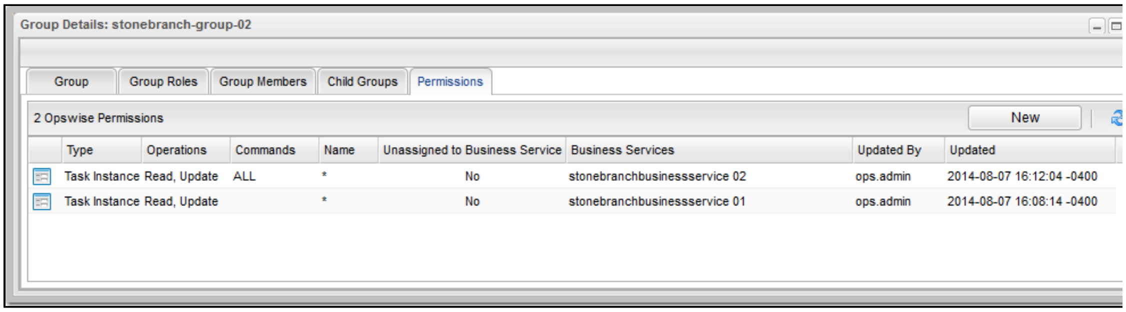
1. Click the **Permissions** tab
2. Click the **New** button and add the following permission:
    - Type = Task Instance
    - Read = enabled
    - Member of Any Business Service or Unassigned = enabled
3. Click the **Group Members** tab and click **Edit**.
4. Add stonebranch-user-01 to the group.

Step 3 Create a group called **stonebranch-group-02**.

1. Add the following two permissions:
    - Type = Task Instance
    - Read = enabled
    - Update = enabled
    - Commands = None
    - Business Services = stonebranchbusinessservice 01
    - Unassigned to Business Service = disabled

    and

    - Type = Task Instance
    - Read = enabled
    - Update = enabled
    - Commands = All
    - Business Services = stonebranchbusinessservice 02
    - Unassigned to Business Service = disabled



Group Details: stonebranch-group-02

2 Opswise Permissions

Type	Operations	Commands	Name	Unassigned to Business Service	Business Services	Updated By	Updated
Task Instance	Read, Update	ALL	*	No	stonebranchbusinessservice 02	ops.admin	2014-08-07 16:12:04 -0400
Task Instance	Read, Update		*	No	stonebranchbusinessservice 01	ops.admin	2014-08-07 16:08:14 -0400

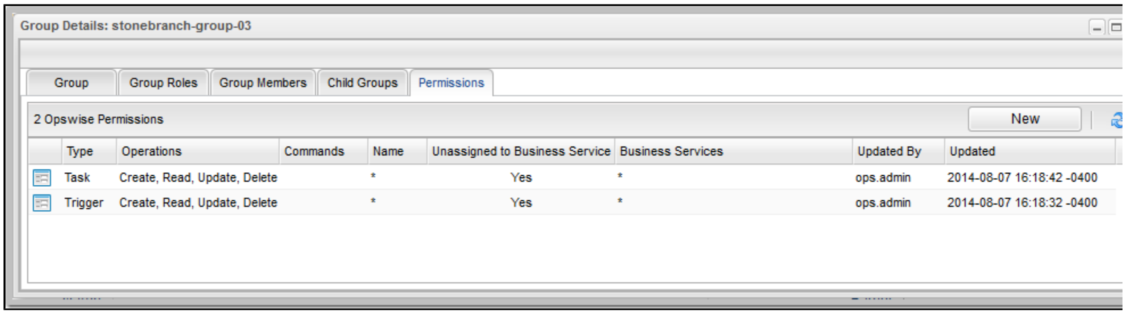
2. Click the **Group Members** tab and **Edit** button to add stonebranch-user-02 to the group.

Step 4 Create a group called **stonebranch-group-03**.

1. Add the following two permissions:
    - Type = Trigger
    - Create = enabled
    - Read = enabled
    - Update = enabled
    - Delete = enabled
    - Commands = None
    - Member of Any Business Service or Unassigned = enabled

    and

    - Type = Task
    - Create = enabled
    - Read = enabled
    - Update = enabled
    - Delete = enabled
    - Commands = None
    - Member of Any Business Service or Unassigned = enabled



2 Opswise Permissions

Type	Operations	Commands	Name	Unassigned to Business Service	Business Services	Updated By	Updated
Task	Create, Read, Update, Delete		*	Yes	*	ops.admin	2014-08-07 16:18:42 -0400
Trigger	Create, Read, Update, Delete		*	Yes	*	ops.admin	2014-08-07 16:18:32 -0400

2. Add stonebranch-user-03 to the group.

Step 5 Log in as each user and note that each is limited to those functions assigned to the user's group.

For additional information, see:

- Users and Groups