

CNT 4603: System Administration Spring 2014

Managing And Maintaining Windows Server 2008 Part 3

Instructor : Dr. Mark Llewellyn
 markl@cs.ucf.edu
 HEC 236, 4078-823-2790
 <http://www.cs.ucf.edu/courses/cnt4603/spr2014>

Department of Electrical Engineering and Computer Science
Computer Science Division
University of Central Florida



Working With Tasks

- The previous set of notes introduced you to the Task Scheduler in Server 2008. This set of notes will deal more closely with creating and managing scheduled tasks in the server.
- Before you need to worry about managing a task, you obviously need to create a task.
- There are two different ways to create a scheduled task via the Task Scheduler: a Basic Task wizard, which provides limited options for the scheduled task but covers the more common options, and the regular Create Task, which exposes the full options for a task but is not wizard driven.
- We'll look at the Basic Task wizard first.



The Basic Task Wizard

- Because you can create tasks anywhere in the Task Scheduler Library, select the folder where the new task is created, and then select the Create Basic Task action.
- The Basic Task Wizard has four configuration steps.
- The first is to give the task a name and an optional description, which is a good idea to complete for someone just browsing the tasks. For example, include information about what the task does and how it is triggered.
- The next stage of task creation is to pick the trigger for the task to execute, which can be Daily, Weekly, Monthly, a single occurrence, every time the computer starts, when a user logs on, or when a specific event ID is logged.



Player ▾ | [Icons] [Close]

Server Manager [Close]

File Action View Help

Create Basic Task Wizard [Close]

Create a Basic Task

Use this wizard to quickly schedule a common task. For more advanced options or settings such as multiple task actions or triggers, use the Create Task command in the Actions pane.

Trigger
 Action
 Finish

Name:

Description:

< Back Next > Cancel

Server Manager (TEST) [Tree View: Roles, Features, Diagnostics, Configuration, Task Schedule, Windows Firewall, Services, WMI Control, Local Users and Groups, Storage]

Task...
ng Tasks
unt Configuration

Start | [Icons] | Server Manager | [Icons] | 1:45 PM



Player | [Icons] | [Close]

Server Manager

File Action View Help

Create Basic Task Wizard

Task Trigger

Create a Basic Task

When do you want the task to start?

Trigger

- Daily
- Weekly
- Monthly
- One time
- When the computer starts
- When I log on
- When a specific event is logged

Finish

< Back Next > Cancel

Server Manager (TEST)

- Roles
- Features
- Diagnostics
- Configuration
 - Task Schedule
 - Windows Firev
 - Services
 - WMI Control
 - Local Users an
- Storage

Start | [Icons] | Server Manager | [Icons] | 1:47 PM



The Basic Task Wizard

- Depending on the trigger selected, you might additionally be prompted to enter a date or time for the trigger or an event ID to trigger on. For example, select Monthly: you can configure to run on the first Wednesday of each month via the interface.
- The next step is to define the Action that will occur for this event. From the wizard, three basic events can occur: start a program, send an email, or display a message.
- A screen shot of this is shown on the next page.



Player | [Icons]

Server Manager

File Action View Help

Create Basic Task Wizard

Action

Create a Basic Task

Trigger

What action do you want the task to perform?

Action

Finish

- Start a program
- Send an e-mail
- Display a message

< Back Next > Cancel

Server Manager (TEST) | Roles | Features | Diagnostics | Configuration | Task Schedule | Windows Firewall | Services | WMI Control | Local Users and Groups | Storage

Start | Server Manager | 1:47 PM



Player | [Icons] | [Close]

Server Manager

File Action View Help

Create Basic Task Wizard

Display a Message

Create a Basic Task

Trigger This action displays a message box on the desktop.

Action

Display a Message

Finish

Title: Administrator Welcome

Message: Hello Administrator! Welcome to the Spring 2014 TestBed Server

< Back Next > Cancel

Server Manager

Start | [Icons] | Server Manager | [System Tray] | 2:23 PM



Player ▾ | [Icons] [?] [?]

Server Manager

File Action View Help

← → [?] [?]

Server Manager (TESTBEDSERVER) [?]

- Roles
- Features
- Diagnostics
- Configuration
 - Task Scheduler
 - Windows Firewall
 - Services
 - WMI Control
 - Local Users and Groups
 - Storage

Create Basic Task Wizard

Summary

Create a Basic Task

Trigger	Name:	NewTrialTask1
Action	Description:	This is a task that will display a message on the console at Administrator login.
	Trigger:	At log on; At log on of TESTBEDSERVER\Administrator
	Action:	Display a message; Administrator Welcome

Open the Properties dialog for this task when I click Finish

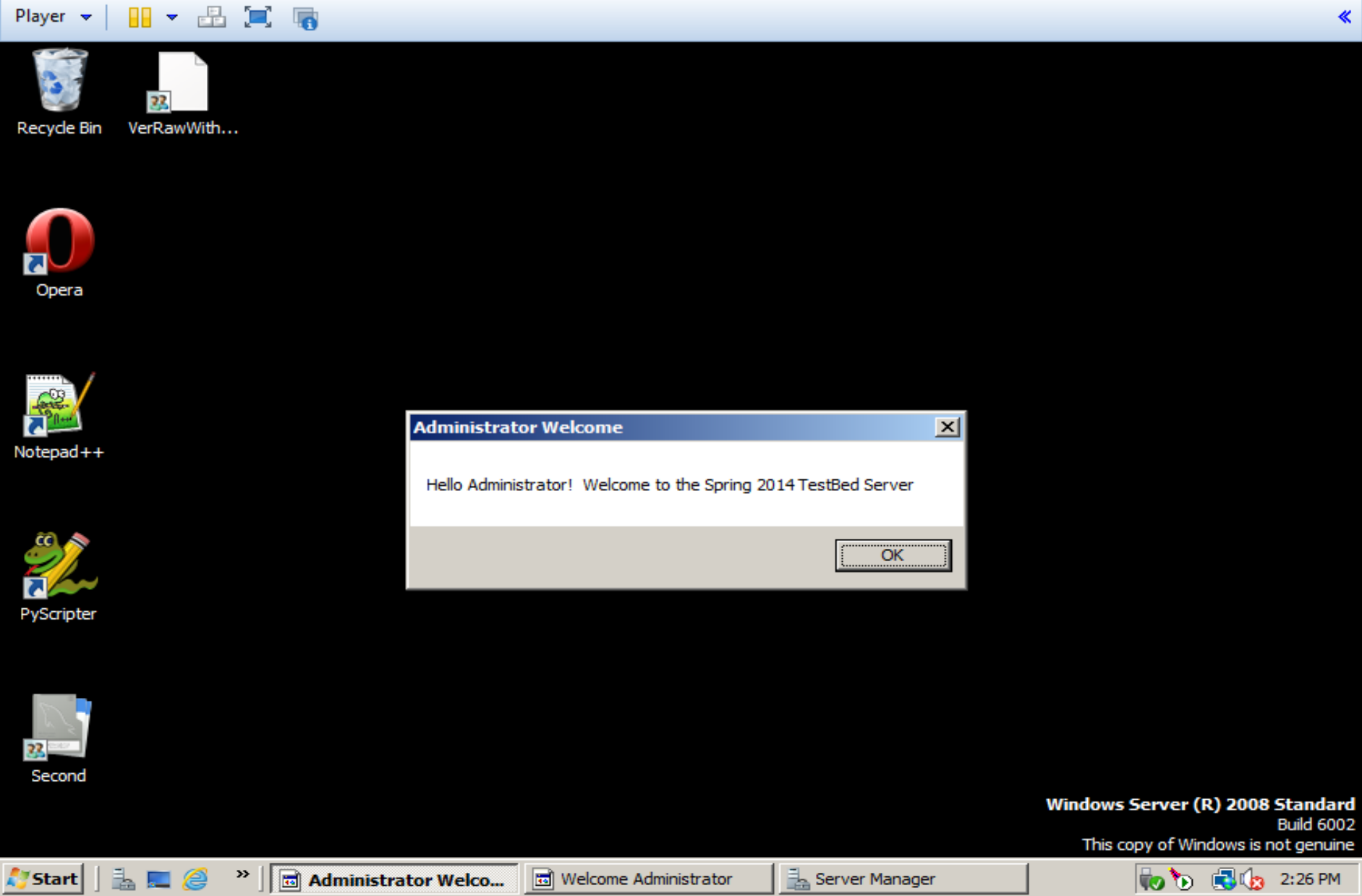
When you click Finish, the new task will be created and added to your Windows schedule.

< Back Finish Cancel

Start [Icons] Server Manager [Icons] 1:49 PM



Player | [Icons] | [Close]



The image shows a Windows Server 2008 desktop environment. The desktop background is black. On the left side, there are several icons: Recycle Bin, VerRawWith..., Opera, Notepad++, PyScripter, and Second. In the center, a dialog box titled "Administrator Welcome" is open, displaying the message "Hello Administrator! Welcome to the Spring 2014 TestBed Server" and an "OK" button. The taskbar at the bottom shows the Start button, several open applications (Administrator Welco..., Welcome Administrator, Server Manager), and system tray icons including the volume icon, network icon, and clock showing 2:26 PM. The system information in the bottom right corner reads "Windows Server (R) 2008 Standard Build 6002 This copy of Windows is not genuine".



The Basic Task Wizard

- The last configuration of the task is the actual action to perform: elect to start a program, send an email, or display a message.
- If you choose to start a program, specify the executable to run with optional arguments and a start folder.
- To send an email, complete who the mail goes to, who it appears from, and a subject, body, attachment, and supply an SMTP server that the mail is sent via. The attachment capability is useful, as you can configure a report to run on a server and then create another task to mail the report x number of minutes after the job should have finished that creates the report.



The Basic Task Wizard

- Finally, a summary is displayed (see page 9) with the option to open the task properties after creation that lets you tweak the configuration further and expose more advanced options.
- Click Finish to create the scheduled task.
- This concludes our look at the Basic Task Wizard.
- The Basic Task Wizard will normally achieve what you want from your task 95% of the time (perhaps even higher), especially if you go in and modify any additional settings via the task properties after creating the task.
- However, to have full access to all task capabilities as you create a task, use the Create Task action.



The screenshot shows the Windows Server Manager interface with the 'Create Task' dialog box open. The dialog has five tabs: 'General', 'Triggers', 'Actions', 'Conditions', and 'Settings'. The 'General' tab is active. The 'Name' field is empty. The 'Author' field is set to 'TESTBEDSERVER\Administrator'. The 'Description' field is empty. Under 'Security options', the user account 'TESTBEDSERVER\Administrator' is selected. There are three radio buttons: 'Run only when user is logged on' (selected), 'Run whether user is logged on or not', and 'Do not store password. The task will only have access to local computer resources.' There are also two checkboxes: 'Run with highest privileges' and 'Hidden'. The 'Configure for' dropdown is set to 'Windows Vista™ or Windows Server™ 2008'. At the bottom of the dialog are 'OK' and 'Cancel' buttons. The background shows the Server Manager console tree with 'Task Scheduler' expanded. The task list on the right includes 'Task...', 'ning Tasks', and 'count Configurat...'. The taskbar at the bottom shows the Start button, Server Manager, and Create Task, with the system clock at 2:28 PM.



Creating A Standard Task

- The Create Task action opens a blank properties dialog box (see previous page) for a task that enables you to fill in the details. I'll walk you through the first five tabs that are exposed (These are the same five tabs that are available if you choose to modify a Basic Task).
- The General tab enables a name and description to be specified for the task, in addition to enabling you to modify the security context under which the task runs. (See next page.)
- By default, the security context is the user account creating the scheduled task. You also have the options to run the task only when the user is logged on or regardless of the user's logon state and whether to run the task with the highest privileges possible.



Player | [Icons] | [Icons]

Server Manager

File Action View Help

← → [Icons] **Create Task** [X]

Server Manager (T)

- Roles
- Features
- Diagnostics
- Configuration
 - Task Sched
 - Windows F
 - Services
 - WMI Contr
 - Local User
- Storage

General | Triggers | Actions | Conditions | Settings

Name:

Author: TESTBEDSERVER\Administrator

Description:

Security options

When running the task, use the following user account:
TESTBEDSERVER\Administrator

Run only when user is logged on

Run whether user is logged on or not

Do not store password. The task will only have access to local computer resources.

Run with highest privileges

Hidden Configure for:

Start | [Icons] | Server Manager | Create Task | [Icons] | 2:35 PM



Creating A Standard Task

- The General tab also allows you to hide the task from normal view, plus configure the task for Windows Vista, XP, Server 2000, Server 2003, or Server 2008.
- The difference is that the Task Scheduler in Vista and Server 2008 has more capabilities than those in earlier OS, so if a task runs on an older client, choose to configure for one of the earlier OS.
- If you select one of the older OS, options that are not compatible with the older OS are not selected/available.
- Server 2008 and Vista can run tasks that were configured for the older OS, however, you do not see the date and time of task creation in the Task Scheduler window. Why?



Creating A Standard Task

- Because you're viewing the Task Scheduler via Server Manager, which locks the focus to the local server.
- However, if you run Task Scheduler outside of Server Manager, you can connect to a remote machine to manage tasks – thus, the need to be able to lock facilities to that of a “lower” OS.
- The Triggers tab (see next page) enables you to create one or more triggers that cause the actions associated with the task to run.
- You can have multiple triggers for a task by clicking the New button and configuring the options.



Server Manager

File Action View Help

Create Task

General Triggers Actions Conditions Settings

When you create a task, you can specify the conditions that will trigger the task.

Trigger	Details	Status

New... Edit... Delete

OK Cancel

Last refreshed at 2/26/2014 2:27:33 PM Refresh

From the Trigger tab, click new to define a trigger(s) for the task being created

Creating A Standard Task

- As shown on the next page, there are several options for when to begin the task, ranging from a simple schedule down to idle time and user connect/disconnects.
- Most of the trigger options can be configured via the New Trigger dialog. However, if you select On idle, access the Conditions tab to set how long the machine need to be idle before the trigger activates the task.
- There are also several advanced settings that enable you to have even more granular configuration. For example, if you fire off multiple tasks and you want to stagger then slightly, configure an optional random offset which waits between 0 and the time selected (30 seconds, 1 minute, 30 minutes, 1 hour, 8 hours, or 1 day) before starting the actions associated with the next task.



Player | [Icons] | [Close]

Server Manager

File Action View H

New Trigger

Begin the task: On a schedule

Settings

- One time Start: 2/26/2014 2:40:00 PM Synchronize across time zones
- Daily
- Weekly
- Monthly

Advanced settings

- Delay task for up to (random delay): 1 hour
- Repeat task every: 1 hour for a duration of: 1 day
- Stop all running tasks at end of repetition duration
- Stop task if it runs longer than: 3 days
- Expire: 2/26/2015 2:30:23 PM Synchronize across time zones
- Enabled

OK Cancel

Server Manager (T)

- Roles
- Features
- Diagnostics
- Configuration
 - Task Sched
 - Windows F
 - Services
 - WMI Contr
 - Local User:
- Storage

task...

ning Tasks

ount Configurat...

Start | [Icons] | Server Manager | Create Task | [Icons] | 2:30 PM

Many options are available for defining the trigger



Player ▾ | [Icons] [Server Manager]

Server Manager

File Action View Help

Server Manager (TESTBEDSE)

- Roles
- Features
- Diagnostics
- Configuration
 - Task Scheduler
 - Windows Firewall with
 - Services
 - WMI Control
 - Local Users and Grou
 - Storage

New Trigger

Begin the task: On a schedule ▾

Settings

One time
 Daily
 Weekly
 Monthly

Synchronize across time zones

Advanced settings

Delay task for up to (random delay): 1 hour ▾

Repeat task every: 1 hour ▾ for a duration of: 1 day ▾

Stop all running tasks at end of repetition duration

Stop task if it runs longer than: 3 days ▾

Expire: 9/23/2014 ▾ 1:57:05 PM ▾ Synchronize across time zones

Enabled

OK Cancel

Start | [Icons] Server Manager Create Task | [Icons] 1:58 PM



Player | [Icons] | Server Manager

File Action View H

Edit Trigger

Begin the task: **On a schedule**

Settings

- One time** Start: 2/26/2014 2:40:00 PM Synchronize across time zones
- Daily**
- Weekly**
- Monthly**

Advanced settings

- Delay task for up to (random delay): 1 hour
- Repeat task every: 1 hour for a duration of: 1 day
 Stop all running tasks at end of repetition duration
- Stop task if it runs longer than: 3 days
- Expire: 2/26/2015 2:31:49 PM Synchronize across time zones
- Enabled**

OK Cancel

Server Manager (T)

- Roles
- Features
- Diagnostics
- Configuration
 - Task Sched
 - Windows F
 - Services
 - WMI Contr
 - Local User
- Storage

Start | Server Manager | Create Task | 2:31 PM



Creating A Standard Task

- Options exist to repeat the task at certain intervals and to stop the actions associated with the task if it runs for longer than a configurable amount of time. Imagine, for example, you have a backup job than runs overnight that you schedule to start at 8 p.m. Due to the resources, the backup job that runs overnight cannot still be running when the users come in at 8 a.m. the next morning, so you can enable the option to stop the task if running takes longer than 12 hours.
- You can set an expiry for regularly occurring tasks, so, for example, it could run every morning for a period of 3 weeks.



Creating A Standard Task

- The next tab is the Actions tab; as with Triggers, you can add multiple actions to perform when the task is triggered, which can be combinations of program actions, emails, and messages.
- See next page for the Actions tab view.



Player | [Icons]

Server Manager

File Action View Help

Create Task

General Triggers Actions Conditions Settings

When you create a task, you must specify the action that will occur when your task starts.

Action	Details
--------	---------

New... Edit... Delete

OK Cancel

Last refreshed at 2/26/2014 2:27:33 PM Refresh

Start | Server Manager | Create Task | [System Tray] 2:32 PM

From the Actions tab, click new to define the action(s) for the task being created



The screenshot shows the Windows Server Manager interface. A 'New Action' dialog box is open, prompting the user to specify an action for a task. The 'Action' dropdown menu is set to 'Start a program'. Below this, there are fields for 'Program/script:', 'Add arguments (optional):', and 'Start in (optional):'. A 'Browse...' button is next to the 'Program/script:' field. The dialog box has 'OK' and 'Cancel' buttons at the bottom. In the background, the 'Create Task' wizard is visible, showing a tree view of server components like Roles, Features, and Configuration. The task scheduler list on the right includes 'Basic Task...', 'Task...', 'Task...', 'All Running Tasks', and 'Account Configuration'.



Creating A Standard Task

- The Conditions tab (as shown on the next page), enables conditions to be applied for the task actions to be executed on top of the triggers.
- The trigger tells the task to execute, but before the actions are called, the task scheduler makes sure any conditions configured are satisfied.
- The first condition you can specify is to only run if the machine has been idle for x amount of time – for example, 1, 5, 10, 15 30, or 60 minutes – and an amount of time to wait until the machine has been idle for that amount of time. For example, if the condition is set to be idle for 10 minutes and then wait for the idle for 1 hour, then the computer has to be idle for 10 minutes within that 60 minutes for the task to run.



The screenshot shows the Windows Server Manager interface with the 'Create Task' dialog box open. The 'Conditions' tab is selected, and the 'Idle' section is expanded. The 'Start the task only if the computer is idle for:' checkbox is unchecked, with '10 minutes' selected in the dropdown. The 'Wait for idle for:' dropdown is set to '1 hour'. The 'Stop if the computer ceases to be idle' checkbox is checked, and 'Restart if the idle state resumes' is unchecked. The 'Power' section has 'Start the task only if the computer is on AC power' checked, and 'Stop if the computer switches to battery power' also checked. 'Wake the computer to run this task' is unchecked. The 'Network' section has 'Start only if the following network connection is available:' unchecked, with 'Any connection' selected in the dropdown. The 'OK' and 'Cancel' buttons are at the bottom right of the dialog. The taskbar at the bottom shows the Start button, several icons, and the taskbar buttons for 'Server Manager' and 'Create Task'. The system tray on the right shows various icons and the time '2:34 PM'.

Player | [Icons] | Server Manager

File Action View Help

Create Task

General Triggers Actions **Conditions** Settings

Specify the conditions that, along with the trigger, determine whether the task should run. The task will not run if any condition specified here is not true.

Idle

Start the task only if the computer is idle for: 10 minutes

Wait for idle for: 1 hour

Stop if the computer ceases to be idle

Restart if the idle state resumes

Power

Start the task only if the computer is on AC power

Stop if the computer switches to battery power

Wake the computer to run this task

Network

Start only if the following network connection is available:

Any connection

OK Cancel

Start | [Icons] | Server Manager | Create Task | [Icons] | 2:34 PM



Creating A Standard Task

- You can also configure the task to stop executing if the computer stops being idle and to resume when the computer is idle again.
- Note: on Windows machines a machine is considered to be idle if a screen saver is running. If a screen saver is not running, the computer is considered to be in an idle state if there is 0% CPU usage and 0% disk input or output for 90% of the past 15 minutes, and if there is no keyboard or mouse input during that period of time.
- For laptops, you can also set power options that tell the task to run only if running on AC power and, optionally to stop the task if the power is disconnected and the computer starts running on battery power.



Creating A Standard Task

- You can also set things to wake the computer to run the task if the computer is in sleep mode.
- If a task is reliant on network connectivity (for example, backing up data to another server), you can configure the task to start only if a specific network connection is available.
- The last tab is the Settings tab (see next page), which enables you to configure granular settings on whether tasks can be run on demand. This should be disabled if executing a task outside of its scheduled time would have negative effects on the environment, such as a backup or disk defragmentation.



Player | [Icons] | [Close]

Server Manager

File Action View Help

Create Task [Close]

General | Triggers | Actions | Conditions | Settings

Specify additional settings that affect the behavior of the task.

- Allow task to be run on demand
- Run task as soon as possible after a scheduled start is missed
- If the task fails, restart every: minute
- Attempt to restart up to: times
- Stop the task if it runs longer than: days
- If the running task does not end when requested, force it to stop
- If the task is not scheduled to run again, delete it after: days

If the task is already running, then the following rule applies:

[OK] [Cancel]

Server Manager (T)
 + Roles
 + Features
 + Diagnostics
 - Configuration
 + Task Sched
 + Windows F
 + Services
 + WMI Cont
 + Local User
 + Storage

task...
 ning Tasks
 count Configurat...

Start | [Icons] | Server Manager | Create Task | [Icons] | 2:34 PM



Creating A Standard Task

- You can also configure whether a task should be run if its scheduled time has been missed and whether the task should be restarted if it fails execution.
- You also have a general option to stop the task if it is running for more than a configurable amount of time and to automatically delete the task if it is not scheduled to execute again in the future after a configurable amount of time. This is a good option if you are creating a task that you know you will never use again. However, if you think you might use it again, keeping it around will probably save you work in the future, so at a minimum make sure you export the task to a file before deleting it.



Player | [Icons]

Server Manager

File Action View Help

Server Manager (TESTBEDSERVER)

- Roles
- Features
- Diagnostics
- Configuration
 - Task Scheduler
 - Task Scheduler Library**
 - Windows Firewall with Adv...
 - Services
 - WMI Control
 - Local Users and Groups
 - Storage

Task Scheduler Library 7 Tasks

Name	Status	Triggers	Next Run Time
NewTiralTask1	Ready	At log on of TESTBEDSERVER\Administrator	
NewTrialTask1	Ready	At log on of TESTBEDSERVER\Administrator	
NewTrialTask2	Ready	At 2:15 PM on 9/23/2013	
NewTrialTask4	Ready	At 2:40 PM on 2/26/2014	2/26/2014 2:
TrialTask1	Ready	At log on of TESTBEDSERVER\Administrator	
TrialTask2	Ready	At 1:35 PM on 2/23/2012	
TrialTask3	Ready	At 12:40 PM on 2/20/2013	

Actions

Task Scheduler Library

- Create Basic Task...
- Create Task...
- Import Task...
- Display All Running Tasks
- New Folder...
- View
- Refresh
- Help

Selected Item

- Run
- End
- Disable
- Export...
- Properties
- Delete
- Help

General | Triggers | Actions | Conditions | Settings | History

Name: NewTiralTask1

Author: TESTBEDSERVER\Administrator

Description: This is a task that will display a message on the console

Security options

When running the task, use the following user account:
TESTBEDSERVER\Administrator

Start | [Icons] | Server Manager | Microsoft Management C... | 2:39 PM

New tasks created in this set of notes now show in the Task Library.



Player | [Icons] | [Icons]

Recycle Bin VerRawWith...

Opera

Notepad++

PyScripter

Second

Time Reminder [X]

Hi Administrator! The current time is 2:40 pm.

OK

Windows Server (R) 2008 Standard
Build 6002
This copy of Windows is not genuine

Start | Server Manager | Time Reminder | [Icons] | 2:40 PM

Note the time (See page 20.)



Creating A Standard Task

- An option to configure what to do if the task is already running is available that enables you to configure whether another instance should run, nothing happens, the existing instance is stopped, or another instance get queued behind the existing one.
- The new task is now part of the Task library (see next page).



Player | [Icons] | Server Manager

File Action View Help

Server Manager (TESTBEDSERVER)

- Roles
- Features
- Diagnostics
- Configuration
 - Task Scheduler
 - Task Scheduler Library**
 - Windows Firewall with Advanced Security
 - Services
 - WMI Control
 - Local Users and Groups
 - Storage

Task Scheduler Library 7 Tasks

Name	Status	Triggers	Next Run Time	Last Run Time
NewTiralTask1	Ready	At log on of TESTBEDSERVER\Admin...		2/2/2012
NewTrialTask1	Ready	At log on of TESTBEDSERVER\Admin...		2/2/2012
NewTrialTask2	Ready	At 2:15 PM on 9/23/2013		9/23/2013
NewTrialTask4	Ready	At 2:40 PM on 2/26/2014	2/26/2014 2:40:00...	2/26/2014
TrialTask1	Ready	At log on of TESTBEDSERVER\Admin...		2/2/2012
TrialTask2	Ready	At 1:35 PM on 2/23/2012		2/2/2012
TrialTask3	Ready	At 12:40 PM on 2/20/2013		2/2/2012

Actions

Task Scheduler Library

- Create Basic Task...
- Create Task...
- Import Task...
- Display All Running T...
- New Folder...
- View
- Refresh
- Help

General | Triggers | Actions | Conditions | Settings | History

Name: NewTiralTask1

Author: TESTBEDSERVER\Administrator

Description: This is a task that will display a message on...

Security options

When running the task, use the following user account:
TESTBEDSERVER\Administrator

Disable
Export...
Properties
Delete
Help

Start | [Icons] | Server Manager | [Icons] | 2:41 PM

The tasks we created earlier are now present in the task library

