

Setup - Schedules

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Overview

A **schedule** contains information on when backups are to be performed and how long each backup is to be kept. The data in a schedule includes:

- Triggers that define when backups should be taken and what type of backup (full, differential, incremental).
- Retention rules describing how long, or how many backups, should be kept before old backups are removed.
- Options for advanced behaviors, including how offline computers should be handled, retrying failed backups, power saving options, and backup notifications.

To work with schedules, visit the schedules page of the Site Manager console by selecting the '**Schedules**' page under the '**Backups**' heading. On the initial visit to the schedules page, or if all existing schedules are deleted, the page will show some general help and information on schedules:

The screenshot shows the Macrium Site Manager interface. The top navigation bar includes the Macrium logo, 'Macrium Site Manager with SiteDeploy', and 'Backups \ Schedules'. The right side of the top bar shows a bell icon, the time '2:40 PM BST', and the date 'September 19, 2023'. The left sidebar contains a list of navigation items: Dashboard, Backups (expanded), Computers, Definitions, Schedules (selected), Repositories, Active Backups, Restore, Deployment, Other Tasks, Licenses, Settings, and About. The main content area is titled 'Schedules' and contains the following text:

To run backups automatically a *Schedule* must be created. You can do this by clicking the **New Schedule** button.

Alternatively, a set of default *Schedules* can be created based on common backup patterns. Press the **Create Default Schedules** button to create the default *Schedules*.

If default *Schedules* are created, they can be edited, deleted or added to at any time after creation.

Below this text are two buttons: **Create New Schedule** and **Create Default Schedule**.

The section titled 'Default Schedules' contains the following text:

If default *Schedules* are created, they will consist of the following:

- **Grandfather, Father, Son** - Daily Incremental ("Son"), weekly Differential ("Father") and monthly Full ("Grandfather") backups.
- **Differential Backup Set** - A Full backup is created periodically followed by daily Differential backups.
- **Incremental Backup Set** - A Full backup is created periodically followed by daily Incremental backups.
- **Incrementals Forever** - Incrementals forever optimizes backup space and time by only ever creating a single Full backup. After this Incremental backups are created forever. The Full backup is consolidated with subsequent Incremental backups once the specified number of Incremental backups is reached. This is also known as a *Synthetic Full* backup.
- **Intra-Daily Backup Set** - A Full backup is created monthly, with a Differential backup created at the start of each day, followed by Incremental images every 15 minutes during the working day.

The section titled 'Schedule Overview' contains the following text:

Schedules contain all the information needed to run different types of backup according to different time-based rules and also to control retention of multiple backups.

Schedules can contain the following elements:

- **Triggers** - Each trigger is a time based rule of when a certain type of backup should be taken. For example a daily incremental or monthly full backup. Trigger rules can be:

Default Schedules

On the initial guidance page for schedules, there is an option to create a set of default schedules. These defaults can be edited and modified once created to provide the exact scheduling required. The defaults created are:

- **Grandfather, Father, Son** - Daily incremental ("Son"), weekly differential ("Father"), and monthly full ("Grandfather") backups.

- **Differential Backup Set** - A full backup is created periodically followed by daily differential backups.
- **Incremental Backup Set** - A full backup is created periodically followed by daily incremental backups.
- **Incrementals Forever** - Incrementals forever optimizes backup space and time by only ever creating a single full backup. After this, incremental backups are created ad infinitum. The full backup is consolidated with subsequent incremental backups once the specified number of incremental backups is reached. This is also known as a synthetic full backup.
- **Intra-Daily Backup Set** - Monthly full backups, daily differential backups, and incremental backups every 15 minutes during working hours. Differentials are retained for 4 weeks., Full images for 6 months.

Creating a Schedule

To create a new schedule, click the '**New Schedule**' button in the upper left of the interface. This opens the schedule creation wizard:

Step 1 - Title

Add Schedule

Title
Configure Name of Schedule

Triggers
Configure Triggers

Retention Rules
Configure Retention Rules

Options
Configure Options for Backups

Name:

Description:

Cancel

Previous

Next

Finish

Each Schedule must have a name as well as an optional description.

Step 2 - Triggers

Add Schedule

Title
Configure Name of
Schedule

Triggers
Configure Triggers

Retention Rules
Configure Retention Rules

Options
Configure Options for
Backups

No Triggers associated with the selected schedule. To create a new trigger press **New Trigger**

+ New Trigger

Cancel

Previous

Next


Finish

The first stage of the wizard is to define the triggers for when backups are to be run. To create a new trigger, press the **'New Trigger'** button. This opens a dialog box as seen below:

Add Trigger


Operation
☐ Full
☐ Differential
☒ Incremental

Start Date ?

09/19/2023 

Type
☐ Intra-daily
☐ Daily
☒ Weekly
☐ Monthly (by date)
☐ Monthly (by day)

Start Time

9:00 AM 

Interval

1



Active Days

☒ Monday
 ☒ Tuesday
 ☒ Wednesday
 ☒ Thursday
 ☒ Friday
 ☐ Saturday
 ☐ Sunday

Cancel

OK

The Add Trigger dialog has a number of options for creating the trigger. These are:

Option	Description
Operation	<p>Which type of backup to perform when this trigger initiates a backup. This can be full, differential, or incremental.</p> <p> If a trigger fires for an incremental or differential backup, but no full backup exists in the repository to base the differential or incremental backup on, the backup is automatically converted to a full backup.</p>
Start Time	The time of day the backup operation will occur. If a backup is delayed because another backup is running, the backup will run as soon as possible.
Start Date	The date when the trigger starts. The trigger will not initiate a backup before this date. This is useful to ensure that complex rules start at the right time. For example, making sure a trigger for an incremental backup on Tuesdays doesn't occur before a full backup trigger on Fridays.
Trigger Type	<p>The type of trigger - the options are listed below in the 'Trigger Details' section.</p> <p> When triggers occur at the same time, only one backup is taken, with the more thorough backup taking precedence (full over differential, differential over incremental). For example: given a weekly full backup trigger which occurs at 10:00 PM and a daily incremental backup trigger at the same time, the full backup will take precedence and run. This allows for simpler trigger creation - for example, a weekly and daily trigger which overlap rather than two weekly triggers, one for one day and the other for all other days of the week.</p>

Trigger Details	<p>The panel changes depending on the trigger type.</p> <ul style="list-style-type: none"> • Intra-Daily - 'Interval' backup every n minutes between the start and stop times. May be restricted to certain days of the week. • Daily - 'Interval' (every nth day) • Weekly - 'Interval' (every nth week) and 'Active Days' (Monday, weekends, etc.) • Monthly (by Date) - 'Active Days' (the day number(s) in the month - 1st to 31st) and 'Active Months' (which months of the year the trigger is active during) • Monthly (by Day) - 'Week' of the month (which week number, 1st to 4th or last the active days entry applies to), 'Active Days' (the day(s) of the week the trigger will fire on), and 'Active Months' (which months of the year the trigger is active during)
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Once the trigger data is correct, press '**OK**' to save the trigger. The trigger will then be displayed in the trigger list:

Add Schedule

Title

Configure Name of Schedule

Triggers










Configure Triggers

Retention Rules

Configure Retention Rules

Options

Configure Options for Backups

 Full	At 9:00 AM on weekdays every week, starting 09/19/2023	 Edit	 Delete
 Differential	At 9:00 AM every day, starting 09/19/2023	 Edit	 Delete
 Incremental	Every 30 minutes between 9:00 AM and 5:00 PM on weekdays, starting 09/19/...	 Edit	 Delete

+ New Trigger

Cancel

Previous

Next

Finish

Each trigger listed has an '**Edit**' button to re-open the trigger creation dialog to edit the trigger and a '**Delete**' button to remove the trigger.

Once triggers have been created, press the '**Next**' button to continue to step 2. There must be at least one trigger to proceed.

Step 3 - Retention Rules

Retention rules govern how long backups, or how many backups, are kept in the repository before being deleted to conserve space. The retention rules step appears as follows:

Add Schedule

Title
Configure Name of Schedule

Triggers
Configure Triggers

Retention Rules
Configure Retention Rules

Options
Configure Options for Backups

Rules

☒ Full
Keep
1
Backups

☒ Differential
Keep
4
Weeks

☒ Incremental
Keep
7
Days

Retention rules are applied to the backup files from each computer separately

Options

☐ Create Synthetic Full Backup if possible
☐ Run the purge before backup

Cancel Previous Next Finish

The **'Rules'** section contains the retention rules for each backup type. If the checkbox next to each rule is checked, if there are any backups older than the time period or count of backups specified in the dropdown boxes.

If the **retention rule** for a given backup type is unchecked, those backups are kept forever unless manually deleted from the repository.

Retention rules are applied on a per-computer basis. If a retention rule is configured to keep 10 Full backups, the rule will keep 10 Full backups per computer in the backup plan.

The **'Options'** section contains options for additional and fine control over the way retention rules are applied. Options available are:

Option	Description
Create a Synthetic Full Backup if possible	<p>If this option is checked, instead of deleting incremental backup files once they have reached the limit of retention, they are merged into the full backup they are based on, creating a new full backup containing all the data up to the merge point.</p> <p>This option only applies to backup plans such as 'Incrementals Forever' where a single full backup is followed by frequent incremental backups. The retention rule for incremental backups must be enabled and set to 'Backups' mode for this option to become available.</p>
Run the purge before backup	<p>This option applies retention rules and deletes any files according to retention rules before the backup starts.</p> <p>This keeps repository space usage lower but may result in fewer retained backups when new backups fail.</p>

Step 4 - Options

'Options' control how backups are scheduled and what actions are taken on failure or for offline computers. Power saving and notification options can also be specified here. The interface appears as below:

Add Schedule

Title
Configure Name of Schedule

Triggers
Configure Triggers

Retention Rules
Configure Retention Rules

Options
Configure Options for Backups

Offline Computers

☒ Defer backups until computer is online
☐ Send Wake On LAN message before backup

UDP port
9
Attempts
3

Wait between attempts
1
minutes

☐ Fail backups for offline computers

Failed backups

☐ Retry backups which fail
Backups should be attempted up to
2
times
Allow
10
minutes between attempts of failed backups

Power Saving Options

☐ Enable power saving options
After completing a backup, the computer should
Shutdown
☐ Force close all programs

Active Hours ⓘ

☒ Schedule only applies between
5:00 PM
9:00 AM

Notifications

☐ Intra-daily Stealth Mode ⓘ
☐ Disable Agent Notification ⓘ

Cancel
Previous
Next
Finish

The available options are:

Option	Description
Defer backups until computer is online	If this option is selected, scheduled backups cannot be performed because a computer is offline will be performed when the computer comes back online. If the option is unchecked, scheduled backups will fail if the computer is offline.
Send Wake On LAN message before backup	If this option is selected, Site Manager will attempt to use Wake On LAN to wake offline computers before starting a backup. If Wake On LAN attempts fail, it will behave as the 'Fail backups for offline computers' option Additionally, UDP port, number of wake attempts, and time between attempts can be set.
Fail backups for offline computers	If this option is selected, backups will be failed if the computer is offline and the computer will not perform a backup until the next trigger time or next retry time as set below.
Enable power saving options	If this option is selected, the computer can be set to shutdown, hibernate, suspend, or reboot after completing a backup. The computer can also be forced to close all programs.
Retry backups which fail	If a backup attempt fails, it can be retried up to the number of times specified here.
Allow X minutes between attempts of failed backups	The amount of time that Site Manager will wait between backup attempts. May be set to between 2 and 120 minutes. Backups of other computers may occur between the retries.
Active Hours	When enabled, scheduled backups will only be sent to the agent between the start and end time specified. If the start and end times are the same, then the active period is 24 hours. Any scheduled or queued backups that fall outside of the active hours will be deferred until the next active hours window is reached.
Intra-daily Stealth Mode	When intra-daily stealth mode is enabled, backups that are triggered by intra-daily triggers will only create backup logs if there is an error or if new files/folders have been found (for file and folder backups). Instead of logs, the logs view will show a daily summary for each computer backed up
Disable Agent Notifications	When enabled, pop-ups are suppressed on the agent computer, so that the backup is completely silent to a user of that computer. If the user has manually launched the monitor app on the agent computer, they will receive notifications until log off.

Finalizing the Schedule

Once the options have been set appropriately, press **'Finish'** to save the schedule.

Once the schedule is saved, the Site Manager console will display the schedule list with the newly created schedule selected:

Example Schedule

CopyEdit

TriggersEdit

Full

At 9:00 AM on weekdays every week, starting 09/19/2023

Differential

At 9:00 AM every day, starting 09/19/2023

Incremental

Every 30 minutes between 9:00 AM and 5:00 PM on weekdays, starting 09/19/2023

Retention RulesEdit

Full

Keep 1 Backup

Differential

Keep 4 Weeks

Incremental

Keep 7 Days

Retention rules are applied to the backup files from each computer separately.

OptionsEdit

Backups for offline computers will be deferred until online

Preview

<>Today

September 2023Month

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

Editing and Deleting Schedules

Once a schedule has been created, it can be edited by selecting the 'Edit' button in the top right. This will reopen the schedule wizard and allow the schedule to be edited. In addition, the retention rules panel has an edit button that can be pressed to open the schedule for editing and jump to the retention rules section.

Deleting Schedules

Deleting a schedule may fail if that schedule is being used to schedule backups in a Repository. In this case, deleting the schedule will require those scheduled backups to be removed or changed to use a different schedule first on the 'Active Backups' page of the Site Manager.

The triggers may be edited directly by using the pencil icon on each trigger's display in the view. They can also be deleted with the delete icon and new triggers can be created with the 'New Trigger' button. Creating and editing triggers this way launches the dialog box for triggers and not the whole schedule wizard:

Edit Trigger

Operation

☒ Full
☐ Differential
☐ Incremental

Start Date ⓘ

29/06/2022

Type

☐ Intra-daily
☐ Daily
☒ Weekly
☐ Monthly (by date)
☐ Monthly (by day)

Start Time

09:00

Interval

1

Active Days

☒ Monday
☐ Saturday

☒ Tuesday
☐ Sunday

☒ Wednesday

☒ Thursday

☒ Friday

Cancel

OK

Copying Schedules

An existing schedule can be copied to a new schedule to make creating schedules that are almost the same simpler. Pressing the '**Copy**' button on the top right of the interface will prompt for a name for the copy of the selected schedule.

Enter a new name for your schedule:

Cancel

Confirm

Selecting '**Confirm**' will copy the schedule.