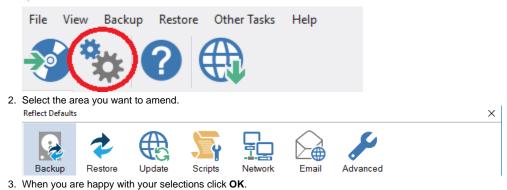
# **Macrium Reflect default settings**

The Macrium Reflect default settings allow you to set the default values used when creating a new backup definition.

To edit default settings from the main toolbar click the 'Cog' icon as shown below.
 Macrium Reflect - Home Edition - v7.0.1983



To change existing definition, right click on the definition and select 'Advanced Properties'.

- Default Backup settings
- Default Restore settings
- Update Settings
- Scripts
- Email Settings
- EventsAdvanced

### Default Backup settings

Compression is used to reduce the file size of the completed backup.

Reflect Defaults	;							×
Backup	Restore	Update	Scripts	Network	Email	Advanced		
Compression File Size Password Auto Verify Im Verify File Syst VBS Event Log PowerShell Ev Priority Log file purge Retention Rule Cloning Reparse Point Backup Set M Shutdown	iage em is ent Logs es		Compressic Medium (R Intellige Copies Windov image s O Make ar Partitio	Default com on reduces the file (ecommended) ~ (only disk sectors u vs pagefile and su size and backup tim n exact copy of th	size but may in Compression Recommended) used by the file spend to disk (h e. e partition(s). sectors therefo	rel settings crease the total ban hevel system. hibernation) files ar	e not copied. This	
			-			Help	OK	Cancel

• Three levels of compression can be chosen, the higher the compression level the smaller the backup file will be:

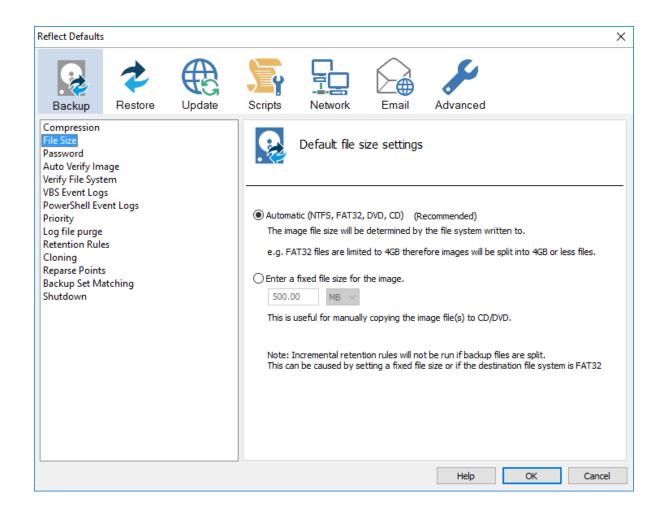
Medium (Recommended)	$\sim$
None	
Medium (Recommended)	
High	

Reducing the file size may increase the total backup time.

#### Compression allows you to chose an Intelligent sector copy or a Forensic copy of the partitions.

Option	Description
Intelligent Sector Copy	Only backup the sectors that are being used by data on the disk. Pagefile (pagefile.sys) and hibernation (hiberfil.sys) will also be excluded.
	This reduces the time it takes for the backup to complete.
Forensic Copy	Backup every sector.

File size options are used to select between automatic or fixed file size for an image.



Incremental Retention Rules will not be run if backup files are split. This can be caused by setting a fixed size or if the destination file system is FAT32.

Option	Description
Automatic (Recommended)	Let the system decide on how large the images are going to be created dependent on file system (NTFS, FAT32, DVD, CD) e.g FAT32 files are limited to 4GB therefore images are going to be split into 4GB or less files.
Fixed file size	Create Images that will be split into many fixed size files. This is useful when copying Image files to CD/DVDs.

Password option is used to enable password protection.

Reflect Defaults	>
Backup Restore Update	Scripts Network Email Advanced
Compression File Size Password Auto Verify Image Verify File System VBS Event Logs PowerShell Event Logs Priority Log file purge Retention Rules Cloning Reparse Points Backup Set Matching Shutdown	Default image and backup file password settings   Enable password protection   Enter Password   Re-Enter Password   Note: Enter password text \$PROMPT\$ to specify a password at backup time.   AES Encryption   None   Image: Encrypt stored passwords
	Help OK Cancel

• With the Password option turned on all the images created will require a password before they can be browsed or restored.

Enter password text \$PROMPT\$ to specify a password at backup time.

• AES Encryption levels can be chosen when adding a password:

None	~
None	
Standard 128 Bit (8+ Character Password)	
Medium 192 Bit (16+ Character Password)	
High 256 Bit (32+ Character Password)	

AES 256 bit encryption is the highest level of encryption available.

Option	Description
Enable password protection	Enables protection of your image files.
Encrypt stored passwords	Passwords saved in your backup definition will be encrypted.

Auto Verify Image allows automatic verification of images after they are created.

Reflect Defaults								×
Backup	Restore	Update	Scripts	Network	Email	Advanced		
Compression File Size Password Auto Verify Ima Verify File Syster	m		<u></u>	Default verif	y image or	backup file cre	ation settings	;
VBS Event Logs PowerShell Even Priority Log file purge Retention Rules Cloning	nt Logs		created. If Note: This	files are split the may add a signific	n each file is inde ant amount of t	f your image or bac ependantly verified ime to the backup p		ter it is
Reparse Points Backup Set Mat Shutdown	tching		Verify ir	nage or backup fil	e directly after o	creation		
						Help	ОК	Cancel

This can add a significant amount of time to the backup process.

Option	Description	
Verify image	Images will be verified automatically when the backup completes.	
For more inform	ation on image verification please see Understanding Image Verification Failures	

Verify File System is used to check the integrity of the file system before a backup.

$\begin{array}{c} \hline \\ \hline $	Reflect Defaults							×
File Size       Password         Password       Auto Verify Image         Verify File System       Verify file systems before backup         VBS Event Logs       PowerShell Event Logs         PowerShell Event Logs       Reflect will automatically verify the integrity of the file system being backed up.         Log file purge       For FAT32 and NTFS this means checking that all files and folders have their data entries correctly mapped to the file allocation table (FAT) or MFT Bitmap (NTFS).         Cloning       Under circumstances of high disk activity during the backup initialisation it is possible that the verification process can falsely indicate a problem with the file system and abort the backup.         You can disable file system before backup       You can disable file system before backup	Backup	Restore	Update	Scripts	Network	Email	Advanced	
PowerShell Event Logs       Reflect will automatically verify the integrity of the file system being backed up.         Priority       Log file purge         Retention Rules       For FAT32 and NTFS this means checking that all files and folders have their data entries correctly mapped to the file allocation table (FAT) or MFT Bitmap (NTFS).         Cloning       Under circumstances of high disk activity during the backup initialisation it is possible that the verification process can falsely indicate a problem with the file system and abort the backup.         Shutdown       You can disable file system verification here.	File Size Password Auto Verify Ima				Verify file sy	stems befo	re backup	
	PowerShell Eve Priority Log file purge Retention Rule Cloning Reparse Points Backup Set Ma	ent Logs s		For FAT32 correctly n Under circ verification You can di	and NTFS this me napped to the file umstances of high n process can fals isable file system v file system before	ans checking the allocation table disk activity du ely indicate a pro- verification here backup	at all files and folders have the (FAT) or MFT Bitmap (NTFS). ring the backup initialisation it oblem with the file system and	eir data entries is possible that the

Reflect will automatically verify the integrity of the file system being backed up.
 For FAT32 and NTFS this means checking that all files and folders have their data entries correctly mapped to the file allocation table (FAT) or MFT Bitmap (NTFS).

Option	Description
Verify file system before backup	Verify the file system on your disk prior to the backup; this will increase the time taken to complete your backup.
Backup without verifying the file system	Backup without verifying, thus making your backup a little quicker.

### Priority is used to change the CPU priority for images and backups.



Reflect Defaults								×
Backup	Restore	Update	Scripts	Network	Email	Advanced		
Compression File Size Password Auto Verify Imag Verify File System				Priority settir	ngs for crea	ting images ar	nd backups	
VBS Event Logs PowerShell Event Priority Log file purge Retention Rules Cloning Reparse Points Backup Set Mate Shutdown	t Logs		are running	g	other application are running. Pr	vackups but will slov ns to run faster but riority , Hig		
						Help	OK	Cancel

Option	Description
Highest	Your backup will take less time to complete and may slow down other applications.
Lowest	Your backup may take longer to complete but it will have less effect on other running applications.

Log file purge option enables you to manage the retention of your backup logs.

Reflect Defaults	×
Backup Restore Update	Scripts Network
Compression File Size Password Auto Verify Image Verify File System VBS Event Logs PowerShell Event Logs Priority Log file purge Retention Rules Cloning Reparse Points Backup Set Matching Shutdown	Purge log file settings         Remove log files older than       52         Move to the recycle bin         Perform at startup       Remove Now         Enable the 'Perform at startup' option to remove log files when Macrium Reflect starts. Alternatively you may use the 'Remove Now' button to action this manually.
	Help OK Cancel

Option	Description
Remove log files	Choose number of days of weeks
Move to Recycle Bin	Deleted logs will be moved to the Recycle Bin.
Perform at startup	Logs will be deleted when Reflect starts up.

You can press the **Remove Now** button to remove the logs manually at any time.

Retention Rules are used to define how long you want to keep different backup types (Incremental, Differential and Full).

Reflect Defaults		×
Backup Restore Update	Scripts Network Email	
Compression File Size Password Auto Verify Image Verify File System	Default retention rules settings	
VBS Event Logs PowerShell Event Logs	Retention Rules Apply To	
Priority	Similar backup sets in the target folder $\qquad \lor$	
Log file purge Retention Rules		
Cloning Reparse Points	Full Keep 12 🚔 Backups 🗸	
Backup Set Matching Shutdown	Differential Keep 4 🎽 Backups 🗸	
Sheudown	Incremental Keep 10 📥 Backups 🗸	
	Create a Synthetic Full if possible	
	Purge before a backup	
	Purge oldest backup set(s) if less than 5 GB on the target volume	
	Reset backup templates to shipped defaults	
	Reset	
	Help OK Ca	ncel

The new Macrium Reflect retention rules provide a powerful and flexible way to manage the lifetime and storage space used by your backups.

Choose how backups are matched and retention rules are applied to the target folder

Retention rules are applied to the target folder of the backup by selecting one of two options:

### 3. Define Retention Rules

Apply retention rules to matching backup sets in the target folder	¥
Apply retention rules to matching backup sets in the target folder	
Apply retention rules to all backup sets in the target folder	

1. Apply retention rules to matching backup sets in the target folder.

Disk Images are purged if they contain exactly the same Partitions as the current Image. Partitions are identified using the unique Disk ID stored in sector 0 of the disk and the Partition sector offset.

Note: For GPT disks the unique GPT disk GUID is used instead of the Disk ID

For File and Folder backups retention rules are applied according to the 'Backup Set Matching' option select in the 'Advanced Properties' for this backup.

2. Apply retention rules to all backup sets in the target folder. All backup sets in the target folder of the same type (Disk Image or File and Folder) are purged according the retention rules.

Note: This option uses the same logic as Macrium Reflect v5

Select the age or number of backup types that you wish to keep

✓ Full			Kee	p	12	•	Back	ups			~									
✓ Diffe	rential		Kee	p	4	▲ ▼	Back	ups			~									
✓ Incre	ementa	l	Kee	p	10	•	Back	ups			~									
					Cre	ate a	Synth	netic F	ull if p	oossib	le 🗌									
	<ul> <li>Run the purge before backup.</li> <li>Delete the oldest backup set(s) if less than</li> <li>GB on the target volume (minimum 1GB)</li> </ul>																			
Option	Description																			
Full	When de	When deleting Full backups all linked incremental and Differential backups in the same backup chain (set) are also deleted This operation will delete the entire backup set.																		
Differential	When de	leting Diff	erential b	ackups al	I linked in	crementa	l backup	s in the s	ame back	up chain	(set) are	also delet	ed.							
Incremental	When deleting Incremental backups the integrity of the backup set is maintained by ensuring that the chain is never broken. This is achieved by merging older Incremental backups when required. In the example below, before retention, there is 1 Full backup, 1 Differential backup and 6 Incremental backups. The retention rules are set to retain 4 incremental backups. After retention, the most recent 4 incremental backups are retained. Deleting the oldest 2 incrementals would cause the backup chain to be invalid as the oldest retained incremental requires the previous 2 incremental backups to complete the chain. To ensure backup integrity the 2 older incremental backups are consolidated with it to create a new incremental backup. F = Full D = Differential I = Incremental I = Incremental																			
	м	т	w	т	F			м	т	w	т	F			м	т	w	]		
	F							D	I 	I ->	I I	I			F	I	I			
					-					-		-								
Create a Synthetic Full if possible						kup set or Increme			l backup	followed	by Incre	mental b	ackups, t	hen this o	ption ca	uses the I	Full backu	ip to be 'rolle	d forward' to	o create a
Run the purge before the backup	Note: in I	Macrium F	Reflect v5	the curre	ent backu		n't include	ed in the p		culation w w Full ba			the curre	nt backuj	o. In v6 th	ne current	backup s	et <b>IS</b> include	d. This mea	ins that if you set
Delete oldest backup set(s) if less than n GB							-			n the driv	-				up is ten	porarily p	baused w	nile older ba	ckup sets are	e purged.

### Cloning

Reflect Defaults							×
Backup	Restore	Update	Scripts	Network	Email	Advanced	
Compression File Size Password Auto Verify Im Verify File Syst VBS Event Log PowerShell Evo Priority Log file purge Retention Rule Cloning Reparse Points Backup Set Ma Shutdown	em s ent Logs :s		Set default used if the t Perform source fr Verif Rapic Diock	target partition is an Intelligent Se ile system. 'y File System. V d delta done. Or d delta done. Or d delta done. Or d sSD TRIM. Th s; avoiding slow 's. a Forensic Secto	cloning. Please s smaller than th ctor Copy. This erify the source nly copy the diff is increases lifet erase operation or Copy. This op	ngs note that Intelligent Sector Copy will always b e source partition will only copy the sectors that are in use on t file system prior to the doning operation ferences between the source and target. ime and the performance by flagging unused is and the read-modify-write cycle for these tion will copy all sectors from the source disk, eration will take longer than an Intelligent Sect	he
			-			Help OK Can	cel

Option Description
--------------------

ctor	Option	Description
ру	Option	Description
	Verify File System	Reflect will verify the integrity of your file system; Verification check that all files and folders data entries are correctly mapped to the file allocation table (FAT) or MFT Bitmap (NTFS)
	Rapid Delta Clone	As with Rapid Delta Restore (RDR) the concept of RDR has been something that has been thought about for quite some time here at Macrium Software. We wanted to build a clone solution that would effectively and rapidly copy only the differences between the source and target file systems. The advantage of this is obvious, RDC offers similar a performance increase as an Incremental disk image offers over a Full image and enables regular clones to be a viable and fast DR solution.
		How does it work?
		The NTFS file system resident on the clone source is compared with file system on the target disk. The two file systems are first verified that they originated from the same format command and then the target NTFS file system structures are analyze for differences. All the NTFS file system structures are copied to the target disk and any that do not exist or have been modified on the target disk cause the data records for each NTFS file or object to be copied as well. The result is an 'Incremental' clone applying only file system changes detected between the source and the target.
		<b>Note:</b> RDC works with NTFS file systems only. All other file systems will perform a full clone <b>Note:</b> RDC is not available when shrinking partitions during a clone.
	Enable SSD TRIM	This features provides automated SSD optimization resulting enhanced SSD performance and longevity. Writing to an unuse block is much quicker than an in-use block as it avoids both the slow erase operation and the read-modify-write cycle. This results an increase of both the lifetime and the performance of the device. It is effective for all windows operating systems, even those that support SSD trim natively as the file system driver can only TRIM blocks on de-allocation; it cannot TRIM blocks written by another process. It is also effective for USB attached SSDs.
rform	Backup eve	ery sector.
rensic ctor	This can ac	dd a significant amount of time to the backup process.

Reparse Points options are used to include or exclude Reparse Points from a backup.

Reflect Defaults								×
Backup	Restore	Update	Scripts	Network	Email	Advanced		
Compression File Size Password Auto Verify Im. Verify File Syste VBS Event Log: PowerShell Eve Priority	em s			oints are a feature	of the NTFS file	e system that provid	er reparse point	_
Log file purge Retention Rule Cloning Reparse Points Backup Set Ma Shutdown	-		to a directory which then functions as an alias of that directory. The options below define whether reparse points are followed or whether reparse point definitions are backed up. System Reparse Points					
			0	oarse Ponts Do not follow - Bac Follow - Backup su		finitions es (Recommended)		
			] [			Help	OK	Cancel

• Reparse points are a feature of the NTFS file system that provides the ability to create a link to a directories which then fictions as an alias of that directory.

e.g. Reparse point is the folder "Documents and Settings" which when followed points (or expands) to a number of other folders. If followed then all folders the reparse point "contents" will be included in the backup.

The options below define whether reparse points are followed or whether reparse point definitions are backed up:

Option	Description						
System Reparse Points	Do not follow	Only backup the Reparse Definitions (Recommende					
	Follow	Backup all the Reparse Points					
User Reparse Points	Do not follow	Backup the Reparse Definitions					
	Follow	Backup all the Reparse Points (Recommended)					

Backup Set Matching options sets rules for retention that is going to be applied to your backup sets.

Reflect Defaults	×
Backup Restore Upda	Scripts Network Email Advanced
Compression File Size Password Auto Verify Image Verify File System	Select how the File and Folder target backup set is chosen.
VBS Évent Logs PowerShell Event Logs Priority Log file purge Retention Rules	The options below define the logic used for appending to an existing backup set and how retention rules are applied when selecting "Apply retention rules to matching backup sets in the target folder" in the backup wizard.
Cloning	Similar - Match on backups with at least one matching folder
Reparse Points Backup Set Matching Shutdown	Select this option to match if a backup set is found with at least one folder that is selected in the current backup. This option allows you to add and remove folders to your backup definition and still maintain a single backup set.
	Strict - Match on backups with the same folders and filters (As Macrium reflect v5)
	Select this option to match only existing backups that have exactly the same Folder and Include/Exclude Filters. This is similar to the way Macrium Reflect v5 worked. Retention rules will only be applied to exact matched backup sets.
	All - Match on any backup
	Select this option to match on any existing File and Folder backup set in the target folder. When selected, the most recent backup set will be appended to regardless of the folders in the set. Retention rules will be applied to all File and Folder backups.
	Help OK Cancel

• The options below define the logic used for appending to an existing backup set and how retention rules are applied when selecting 'Apply retention rules to matching backup sets in the target folder' in the backup wizard.

Option	Description
Similar - Match on backups with at least one matching folder	Add and remove folders in your backup definition and still maintain a single backup set.
Strict - Match on backups with the same folders and filters	Retention rules will only be applied to exact matched backup sets.
(As Macrium Reflect v5)	
All - Matching on any backup	Retention rules will be applied to all File and Folder backups.

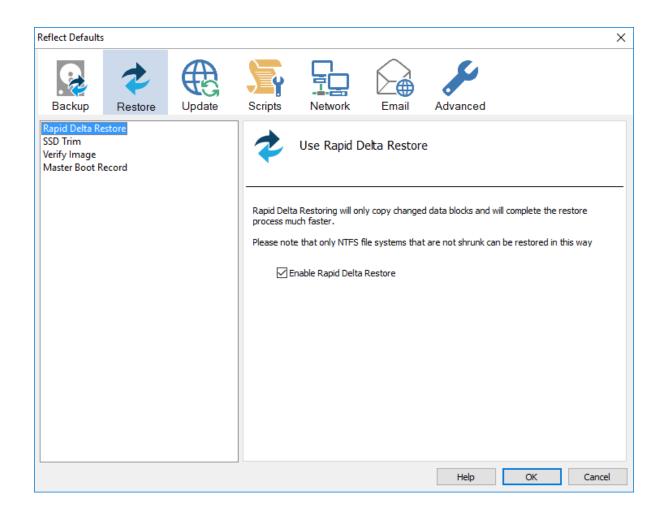
Shutdown sets whether the computer should be shutdown after a backup task has completed.

Reflect Defaults						×		
Backup	Restore	Update	Scripts	Network	Email	Advanced		
Compression File Size Password Auto Verify Ima Verify File Syste VBS Event Log:	em s		Default shutdown settings					
PowerShell Eve Priority Log file purge Retention Rule Cloning Reparse Points Backup Set Ma Shutdown	5		Enable  Shu	wn after a backup task has completed sup task has completed vecking this option will force all programs to close cy can be closed.				
			⊖ Sus	pend the compute	er when a backu	ıp task has completed		
						Help OK Cancel		

Option	Description
Shutdown	This will <b>Shutdown</b> your computer after the backup is complete.
	A sub-option can be enabled to Force the shutdown process - All programs will be forced to close without being queried.
Hibernate	This will Hibernate your computer after the backup is complete
Suspend	This will put your computer to <b>Sleep</b> after the backup is complete.

# Default Restore settings

Rapid Delta Restore will only restore the changed data blocks and not the whole backup file.



Enabling Rapid Delta Restore decreases the time it will take to restore a backup. Only NTFS file systems that are not shrunk can be restored this way. To find out more about RDR please click here.

SSD Trim option enables SSD TRIM on restore.

These options set the defaults for a restore.

Reflect Default	5						×
Backup	Restore	Update	Scripts	Network	Email	Advanced	
Rapid Delta Ro SSD Trim Verify Image Master Boot F			*	Use SSD Trir	n		
			Writing to a erase oper lifetime and It is effecti file system	an unused block is ation and the read the performance ve for all windows	much quicker th d-modify-write of of the device. operating syste RIM blocks on de	g all unused blocks using the T nan an in-use block as it avoid cycle. This results an increase ems, even those that support e-allocation; it cannot TRIM blo attached SSDs.	s both the slow of both the SSD trim as the
			⊡ Er	able TRIM on res	tore		
						Help OK	Cancel

 When a partition is restored, Reflect can flag all unused blocks using the TRIM operation. Writing to an unused block is much quicker than an in-use block as it avoids both the slow erase operation and the read-modify-write cycle. This results an increase of both the lifetime and the performance of the device.
 It is effective for all Windows operating systems, even those that support SSD trim as the file system driver can only TRIM blocks on deallocation; it cannot TRIM blocks written by another process. It is also effective for USB attached SSDs.

Verify Image option verifies images before restoring.

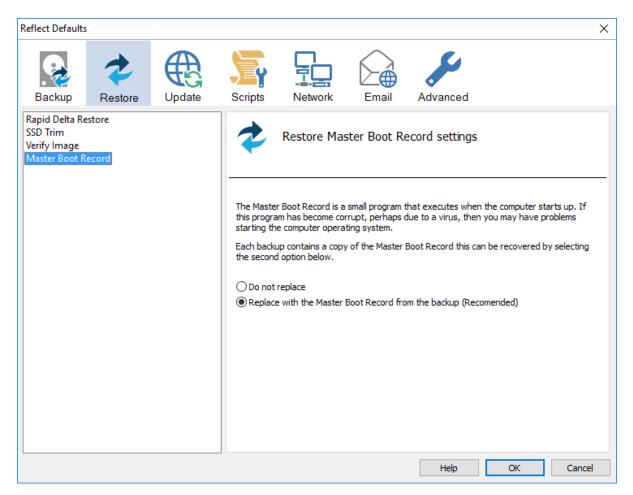
These options set the defaults for a restore.

Reflect Defaults							×	
Backup	Restore	Update	Scripts	Network	Email	Advanced		
SSD Trim Verify Image								
				nk You		g. t / locate any missing media when required.		
						Help OK Cancel		

Option	Description					
No Thank You	Reflect will not verify your images before the Restore process.					
Yes Please	Reflect will verify your images before the Restore process.					
The verification process will ask you to insert / locate any missing media when required.						

Master Boot Record options select whether to recover and replace the Master boot record from the backup.

These options set the defaults for a restore.



• Master Boot Record is a small program that executes when the computer starts up. If this program has become corrupt, perhaps due to a virus, then you may have problems starting the computers operating system.

Each backup contains a copy of the Master Boot Record that can be recovered by selecting the second option below:

Option	Description
Do not replace	Original MBR will be kept without replacing it with the MBR contained in the backup image.
Replace	MBR is replaced with the MBR from the the backup image.

## **Update Settings**

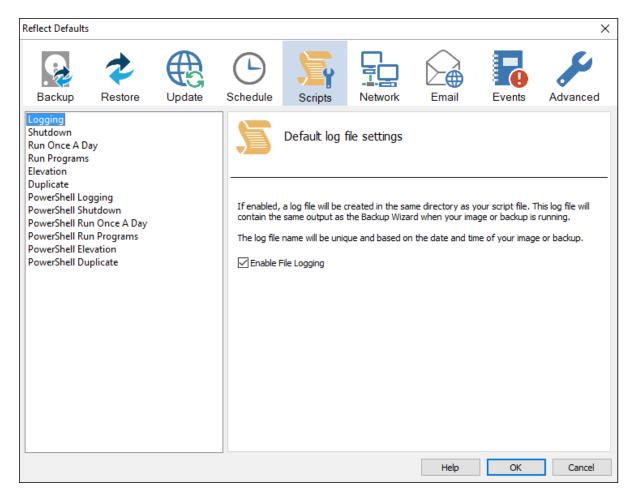
Update options establish rules for updating Reflect.

Reflect Default	s			×
Backup	Restore	Update	Scripts Retwork Email	
Update Prope	rties		Live update settings	
			<ul> <li>Enable automatic check for updates</li> <li>Check once a day</li> <li>Disable automatic update check</li> <li>Use the menu option to manually check for updates.</li> </ul>	
			Automatically restart Macrium Reflect after patching.	
			Help	OK Cancel

Option	Description						
Enable automatic check for updates	Chose when Reflect checks for updates.						
	Enable automatic check for updates       Check once a     day       day     week       month     week						
Disable automatic update check	Reflect will not check for updates automatically; updates will need to be manually checked for by using the update button.						
Automatically restart Reflect after patching	Reflect will automatically restart once the update has been downloaded and installed.						

# Scripts

VBScript Logging options enable file logging in the same directory as your script file.



• If enabled, the log file created will contain the same output as the Backup Wizard when your image or backup is running. The log file name will be left unique and based on the date and time of your image or backup.

VBScript Shutdown option sets whether the PC should shutdown or log off at the end of the script.

Reflect Defaults								×
Backup	Restore	Update	C Schedule	Scripts	Network	Email	Events	Advanced
Logging Shutdown Run Once A Da Run Programs Elevation Duplicate PowerShell Log PowerShell Ru PowerShell Ru PowerShell Ele PowerShell Du	gging utdown n Once A Day n Programs vation		create an in	your PC will shut nage or backup a Shut Down t Down	tdown or Log	at the end of the	e script. This cou	
						Help	ОК	Cancel

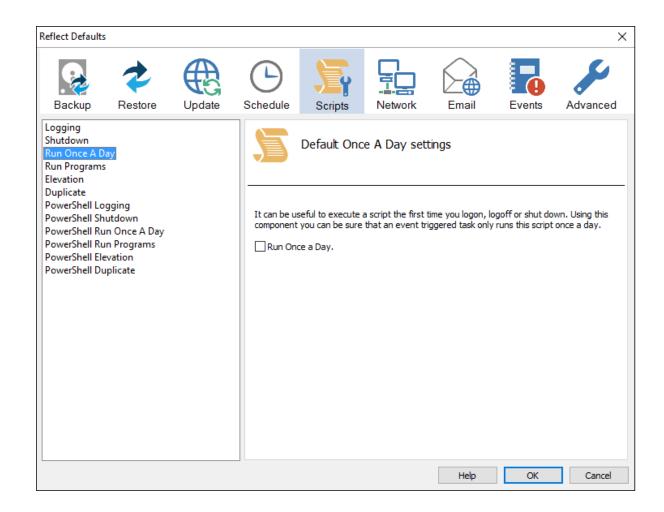
This could be used when creating a backup as the last job of the day.

' Issue shutdown command

objShell.Run "shutdown -s"

Option	Description
Shut Down	<ul> <li>Enable Shut Down</li> <li>Shut Down</li> <li>Log Off</li> </ul>
	Your PC will shutdown after the script has been ran.
Log Off	Enable Shut Down Shut Down O Log Off
	Your PC will Log Off after the script has been ran.

VBScript Run Once A Day option executes a script the first time you logon, logoff or shutdown.



```
' The following function call ensures that this script only runs once a day
   If HasRunToday Then
      WScript.Quit
   End If
. . . . . . . . . . .
'* Function: HasRunToday
۰ *
'* Purpose: determines if this script has run today
۰*
۰*
'* Input:
          None
'* Output: true if has run today false otherwise
۰*
Function HasRunToday
  Dim RegScriptKey
   Dim LastRunDate
   Dim objShell
   Set objShell = WScript.CreateObject("WScript.Shell")
   RegScriptKey = "HKCU\SOFTWARE\Macrium\Reflect\Scripts\" & WScript.ScriptFullName & "\LastRun"
   'Check if script has run today
   ON ERROR RESUME NEXT
   LastRunDate = objShell.RegRead(RegScriptKey)
   If LastRunDate = cstr(Date) Then
        HasRunToday = true
   Else
       objShell.RegWrite RegScriptKey, Date,"REG_SZ"
       HasRunToday = false
   End If
   Set objShell = nothing
End Function
```

Option	Description	
Run once a day	Run Once a Day.	
	The script will run only once a day.	
This is useful if you	want a backup to happen at first logi	n or shutdown

VBScript Run Programs selects programs or scripts to run at the start or end of the script.

Reflect Defaults	Restore	Update	Schedule	Scripts	Network	Email	Events	Advanced
Logging Shutdown Run Once A D Run Programs Elevation Duplicate PowerShell Lo PowerShell Ru PowerShell Ru PowerShell Du	gging utdown in Once A Day in Programs evation		Run a pr File nam Paramet	ogram or script e: ers: ogram or script e:		nd scripts set	ttings	
	ram before ]		plic\Admin\B			Help	ОК	Cancel

' Do the backup

```
ExitCode = Backup ("""C:\Program Files\Macrium\Reflect\reflect.exe"" -e -w <BACKUP_TYPE> ""C:
\Users\Dev\Documents\Reflect\example.xml""")
```

' Run program after backup

objShell.Run """C:\users\public\Admin\After backup.exe""", 1, true

Option	Description
File name	Write the path and executable file name that you wish to run at the start of the script.
Parameters	Include optional command line parameters for the program.
File name	Write the path and executable file name that you wish to run at the end of the script.
Parameters	Include optional command line parameters for the program.

VBScript Elevation is used for Vista and later, to run all programs with elevated privileges.

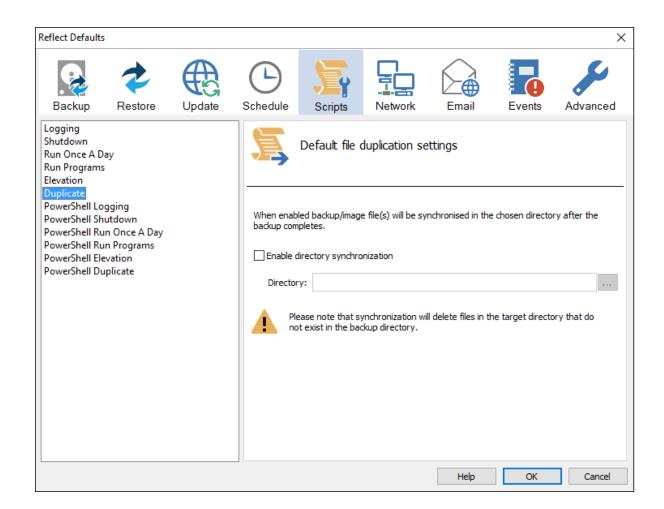
Reflect Defaults								×
Backup R	<b>e</b> store	Update	Construction	Scripts	Network	Email	Events	Advanced
Logging Shutdown Run Once A Day Run Programs Elevation Duplicate PowerShell Logging PowerShell Shutdor PowerShell Run On PowerShell Run On PowerShell Run Pro PowerShell Elevatio PowerShell Duplica	wn nce A Day ograms on		privileges. Note: The r from the so start-up.	eled scripts will pr eturn code from heduler then this	these scripts will	n and run all calle always be zero, 1 cessary. The sche	If you are runni	ing these scripts
						Help	OK	Cancel

```
Sub VBMain()
   Dim objShell
   Dim ExitCode
' Elevate this script for Admin privileges in Vista
   Elevate
. . . . . . . . . . . . . . . . .
! * * * * * * * * * * * * * * *
                 *****
'* Sub:
         Elevate
۰*
'* Purpose: Elevates this script for Vista UAC.
۰*
          This means that only one UAC Elevation prompt is displayed and
۰ *
          functions/programs will not fail if they require admin privileges
۰*
'* Input: None
'* Output: None
۰*
Sub Elevate
   Dim ShellApp
   Dim obiShell
   Dim objWshProcessEnv
   ' Don't elevate if run from Windows Task Scheduler
   If WScript.Arguments.Count > 0 Then
       If WScript.Arguments.Item(0) = "-s" then
            Exit Sub
       End If
   End If
   Set objShell = WScript.CreateObject("WScript.Shell")
   Set objWshProcessEnv = objShell.Environment("PROCESS")
   If objWshProcessEnv("ELEVATED_APP") <> "True" Then
       objWshProcessEnv("ELEVATED_APP") = "True"
       Set ShellApp = CreateObject("Shell.Application")
      Call ShellApp.ShellExecute("""" & WScript.FullName & """", """" & WScript.ScriptFullName & """" & "
& GetBackupTypeParameter, , "runas")
       set ShellApp = nothing
       Set objWshProcessEnv = nothing
       wscript.quit
   End If
   Set objWshProcessEnv = nothing
   Set objShell = nothing
End Sub
```

The return code from these scripts will always be zero. If you are running these scripts from the scheduler then this option is not necessary. The scheduler will elevate the script at startup.

Option	Description
Enable Elevation	Enables UAC elevation for the entire script.
	This enables functions and programs to run outside the context of Macrium Reflect without requesting further elevation.

VBScript Duplicate option creates a copy of the backup to a chosen directory when the backup completes



```
SynchroniseDirectories ExitCode, "C:\C++"
. . . . . . . . . . . . . . . .
'* Function: RobocopyExists
۰*
'* Purpose: determines whether the program Robocopy can be called from the
۰ *
         command line.
۰*
'* Input:
         None
'* Output:
         boolean - true if Robocopy exists
۰*
Function RobocopyExists()
  On Error Resume Next
  Dim objShell
  Dim objExec
  Set objShell = WScript.CreateObject("WScript.Shell")
  Set objExec = objShell.Exec ("robocopy.exe", 0)
  If Err.Number = 0 Then
     RobocopyExists = True
  Else
     RobocopyExists = False
  End If
End Function
'* Function: SynchroniseDirectories
```

#### Document Title Goes Here

```
۰ *
'* Purpose: Copies all files created by the previous backup / image
۰*
            to a supplied directory. Uses Macrium environment variables to
۰*
            determine which files to copy.
۰ *
'* Input: ExitCode - The exit code of the last backup
۰*
            strBackupDirectory - Directory to copy to
۰*
Function SynchroniseDirectories(Byval ExitCode, Byval strSyncDirectory)
   Dim objShell
   Dim objWshProcessEnv
   Dim strEnvPrefix
   Dim strBackupDirectory
   Dim strCmdLine
   Dim iReturnCode
   Dim fs
   Dim objSyncFiles
   Dim objBackupDirectory
   Dim objSyncDirectory
   Dim objBackupFile
   Dim objSyncFile
   Dim strExtension
   Dim dateBackupFile
   Dim dateSyncFile
' Only copy files if backup was successful
   if ExitCode <> 0 Then
      Exit Function
   End If
   Set objShell
                   = WScript.CreateObject("WScript.Shell")
   Set objWshProcessEnv = objShell.Environment("VOLATILE")
' Get the prefix for the last backup set
   strEnvPrefix = objWshProcessEnv("MACRIUM PREFIX")
' Get the directory where we just created a backup
   strBackupDirectory = objWshProcessEnv(strEnvPrefix + "_DIRECTORY")
   If right(strBackupDirectory, 1) = "\" Then strBackupDirectory = left(strBackupDirectory, len
(strBackupDirectory)-1)
   If right(strSyncDirectory, 1) = "\" Then strSyncDirectory = left(strSyncDirectory, len(strSyncDirectory)
-1)
   If RobocopyExists Then
       strCmdLine = "robocopy "'<SOURCE>"" ""<DESTINATION>"" *.mr* /copy:DAT /lev:0 /purge /r:0"
   Else
    ' Robocopy does not exist - using xcopy
       Set fs = CreateObject("Scripting.FilesystemObject")
       Set objBackupDirectory = fs.GetFolder(strBackupDirectory)
       Set objSyncDirectory = fs.GetFolder(strSyncDirectory)
       For Each objSyncFile in objSyncDirectory.Files
           strExtension = fs.GetExtensionName(objSyncFile)
           dateSyncFile = objSyncFile.DateLastModified
           If Left(strExtension,2) = "mr" Then
           ' Check if file has been deleted
               If Not(fs.FileExists(strBackupDirectory+"\"+objSyncFile.name)) Then
                   fs.DeleteFile(objSyncFile)
               Else
               ' Check if file has been modified
                   Set objBackupFile = fs.GetFile(strBackupDirectory+"\"+objSyncFile.name)
                   dateBackupFile = objBackupFile.DateLastModified
                   If DateDiff("m", dateBackupFile, dateSyncFile) <> 0 Then
                       fs.DeleteFile(objSyncFile)
                   End If
               End If
           End If
       Next
```

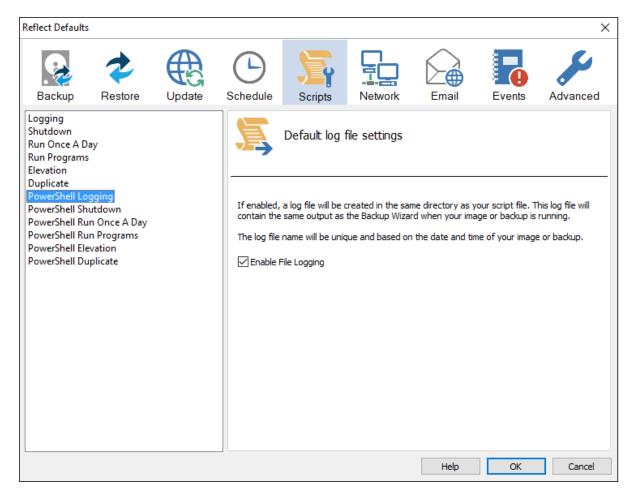
#### Document Title Goes Here

```
strCmdLine = "xcopy ""<SOURCE>\*.mr*"" ""<DESTINATION>"" /c /d /h /i /v /y"
End If
strCmdLine = Replace(strCmdLine,"<SOURCE>", strBackupDirectory)
strCmdLine = Replace(strCmdLine,"<DESTINATION>", strSyncDirectory)
iReturnCode = objShell.Run(strCmdLine,0,true)
if iReturnCode <> 0 then
' Handle synchronisation error
else
' Everything OK
end if
' Clean up
Set objShell = nothing
Set objShell = nothing
End Function
```

Option	Description
Enable file copy	If enabled the backup will create a copy of the files from the backup to the supplied destination.
Directory	Here you will need to enter the folder that you want to copy/archive your backup files to.

Please note that the synchronization will delete files in the target directory that do not exist in the backup directory.

Powershell Logging options enable file logging in the same directory as your script file.



• If enabled, the log file created will contain the same output as the Backup Wizard when your image or backup is running. The log file name will be left unique and based on the date and time of your image or backup.

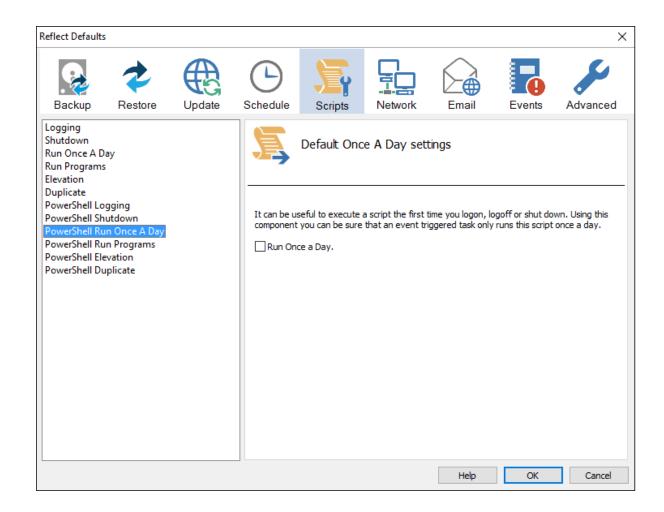
Powershell Shutdown option sets whether the PC should shutdown or log off at the end of the script.

Reflect Defaults								×
Backup	Restore	Update Update	Schedule	Scripts	Network	Email	Events	Advanced
Logging Shutdown Run Once A Day Run Programs Elevation Duplicate PowerShell Logg PowerShell Run PowerShell Run PowerShell Eleva PowerShell Dupl	ying down Once A Day Programs ation		If enabled, y	your PC will shut age or backup a hut Down Down	tdown or Log down or log off- is the last job of	at the end of the		ld be used to
						Help	OK	Cancel

#### Write-Host ' \* Initiating shutdown... ' -NoNewLine; (Get-WMIObject Win32\_OperatingSystem -ComputerName '.' -EnableAllPrivileges).Win32Shutdown(8);

Option	Description
Shut Down	Enable Shut Down Shut Down
	Your PC will shutdown after the script has been ran.
Log Off	Enable Shut Down Shut Down
	Your PC will Log Off after the script has been ran.

Powershell Run Once A Day option executes a script the first time you logon, logoff or shutdown.



```
if (HasRunToday)
 {
   Write-Host ' * Script already executed today. Exiting...';
   Write-Host 'Script finished with exit code 0.';
   Exit 0;
 }
. . . . . . . . . . . . . . . . . . .
#****************
#* Func: HasRunToday
#*
#* Desc: determines if this script has run today
#*
function HasRunToday()
{
   Write-Host ' * Checking last run time... ' -NoNewLine;
   $strRegPath = 'HKCU:\Software\Macrium\Reflect\Scripts';
   $boolRanToday = $false;
   $strDateToday = Get-Date -UFormat %Y%m%d;
   if (Test-Path $strRegPath)
   {
      try
       {
          $strLastRunDate = (Get-ItemProperty -Path $strRegPath -Name $strScriptPath -ErrorAction
Stop).$strScriptPath
          if ($strLastRunDate -eq $strDateToday)
          {
             $boolRanToday = $true;
          }
      } catch { };
   }
   if (!$boolRanToday)
   {
      Set-ItemProperty -Path $strRegPath -Name $strScriptPath -Value $strDateToday;
   }
   Write-Host 'Done.';
   return $boolRanToday;
}
```

Option	Description
Run once a day	Run Once a Day.
	The script will run only once a day.

This is useful if you want a backup to happen at first login or shutdown.

Powershell Run Programs selects programs or scripts to run at the start or end of the script.

Image: Note: The series of	Reflect Default	s							×			
<pre>Shutdown Run Once A Day Run Programs Elevation Duplicate PowerShell logging PowerShell Shutdown PowerShell Run aprogram or scrpt at the start. File name: PowerShell Evation PowerShell Evation PowerShell Evation PowerShell Evation PowerShell Evation PowerShell Shutdown PowerShell Shutdown PowerShell Shutdown PowerShell Starting PowerShell Evation PowerShell Shutdown PowerShell PowerShell Shutdown PowerShell Shutdown Po</pre>	Backup	Restore	Update	C Schedule	Scripts	Network	Email	Events	Advanced			
<pre>proveshell Logging Proveshell Kun Once A Day Proveshell Kun Once A Day Proveshell Kun Program Poweshell Run a program or script at the start. Fie name: Poweshell Duplicate Parameters: Run a program or script at the end. Fie name: Parameters: Parameters:</pre>	Shutdown Run Once A E Run Program Elevation			5	Default run programs and scripts settings							
<pre>Powershen bupulate</pre>	PowerShell Lo PowerShell Sh PowerShell Ro PowerShell Ro PowerShell El	nutdown un Once A Day un Programs evation		File nam								
<pre>Parameters: Parameters:</pre>	PowerShell D	uplicate		Run a pr	rogram or script	at the end.						
<pre>Write-Host ' * Executing "at start" program ' -NoNewLine; \$strRunAtStartApp = 'C:\Users\Public\Admin\Before backup.bat'; \$strRunAtStartArgs = ''; if ([string]::IsNullOrEmpty(\$strRunAtStartArgs)) { Start-Process -FilePath \$strRunAtStartApp; } else { Start-Process -FilePath \$strRunAtStartApp -ArgumentList \$strRunAtStartArgs; }  Write-Host ' * Executing "at end" program ' -NoNewLine; \$strRunAtEndApp = 'C:\Users\Public\Admin\After backup.exe'; \$strRunAtEndArgs = ''; if ([string]::IsNullOrEmpty(\$strRunAtEndArgs)) { Start-Process -FilePath \$strRunAtEndApp; } else { Start-Process -FilePath \$strRunAtEndApp -ArgumentList \$strRunAtEndArgs; }</pre>												
<pre>Write-Host ' * Executing "at start" program ' -NoNewLine; \$strRunAtStartApp = 'C:\Users\Public\Admin\Before backup.bat'; \$strRunAtStartArgs = ''; if ([string]::IsNullOrEmpty(\$strRunAtStartArgs)) { Start-Process -FilePath \$strRunAtStartApp; } else { Start-Process -FilePath \$strRunAtStartApp -ArgumentList \$strRunAtStartArgs; }  Write-Host ' * Executing "at end" program ' -NoNewLine; \$strRunAtEndApp = 'C:\Users\Public\Admin\After backup.exe'; \$strRunAtEndArgs = ''; if ([string]::IsNullOrEmpty(\$strRunAtEndArgs)) { Start-Process -FilePath \$strRunAtEndApp; } else { Start-Process -FilePath \$strRunAtEndApp - ArgumentList \$strRunAtEndArgs; } } </pre>												
<pre>\$strRunAtStartApp = 'C:\Users\Public\Admin\Before backup.bat'; \$strRunAtStartArgs = ''; if ([string]::IsNullOrEmpty(\$strRunAtStartArgs)) { Start-Process -FilePath \$strRunAtStartApp; } else { Start-Process -FilePath \$strRunAtStartApp -ArgumentList \$strRunAtStartArgs; }  Write-Host ' * Executing "at end" program ' -NoNewLine; \$strRunAtEndApp = 'C:\Users\Public\Admin\After backup.exe'; \$strRunAtEndApg = 'C:\Users\Public\Admin\After backup.exe'; \$strRunAtEndApg = ''; if ([string]::IsNullOrEmpty(\$strRunAtEndArgs)) { Start-Process -FilePath \$strRunAtEndApp; } else { Start-Process -FilePath \$strRunAtEndApp -ArgumentList \$strRunAtEndArgs; } } </pre>							Help	ОК	Cancel			
<pre>Write-Host ' * Executing "at end" program ' -NoNewLine; \$strRunAtEndApp = 'C:\Users\Public\Admin\After backup.exe'; \$strRunAtEndArgs = ''; if ([string]::IsNullOrEmpty(\$strRunAtEndArgs)) { Start-Process -FilePath \$strRunAtEndApp; } else { Start-Process -FilePath \$strRunAtEndApp -ArgumentList \$strRunAtEndArgs;</pre>	<pre>\$strRunAtStartApp = 'C:\Users\Public\Admin\Before backup.bat'; \$strRunAtStartArgs = ''; if ([string]::IsNullOrEmpty(\$strRunAtStartArgs)) { Start-Process -FilePath \$strRunAtStartApp; } else { Start-Process -FilePath \$strRunAtStartApp -ArgumentList \$strRunAtStartArgs;</pre>											
<pre>if ([string]::IsNullOrEmpty(\$strRunAtEndArgs)) {     Start-Process -FilePath \$strRunAtEndApp; } else {     Start-Process -FilePath \$strRunAtEndApp -ArgumentList \$strRunAtEndArgs;</pre>	Write-Ho											
else { Start-Process -FilePath \$strRunAtEndApp -ArgumentList \$strRunAtEndArgs;	if ([str { Start-	ing]::IsNul	lOrEmpty(\$s									
	else { Start-	Process -Fi	lePath \$str	RunAtEndApp	-Argument	List \$strRur	nAtEndArgs;					

option	Boonipiion
File name	Write the path and executable file name that you wish to run at the start of the script.

Parameters	Include optional command line parameters for the program.
File name	Write the path and executable file name that you wish to run at the end of the script.
Parameters	Include optional command line parameters for the program.

Powershell Elevation is used for Vista and later, to run all programs with elevated privileges.

Reflect Default	5							×
Backup	Restore	Update	C Schedule	Scripts	Network	Email	Events	Advanced
Logging Shutdown Run Once A D Run Program: Elevation Duplicate PowerShell Lo PowerShell Ru PowerShell Ru PowerShell Du	s nutdown un Once A Day un Programs evation		privileges. Note: The r from the so start-up.	led scripts will pr eturn code from heduler then this	ompt for elevatio	tion settings n and run all calle always be zero. i tessary. The sche	If you are runni	ing these scripts
						Help	OK	Cancel

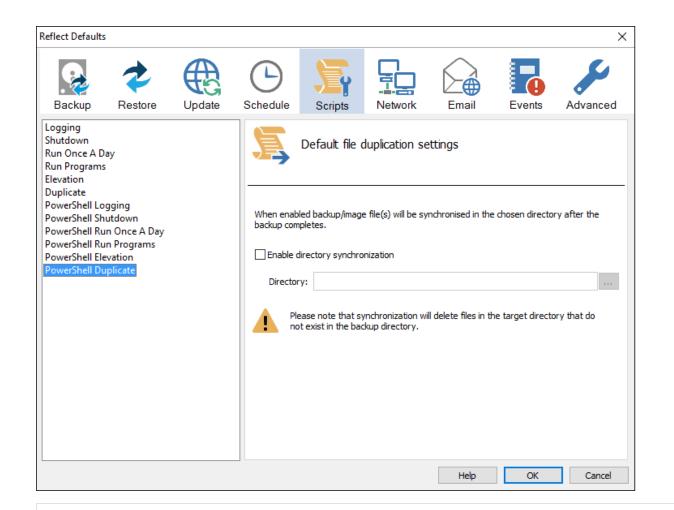
```
function Main()
{
 Write-Host 'PowerShell script for Macrium Reflect Backup Definition File';
 Write-Host "BDF: $strXmlFilePath";
 Elevate;
. . . . . . . . . . . . . . . . . .
#**********
              #* Func: Elevate
#*
#* Desc: Elevates this script for UAC.
#*
        This means that only one UAC Elevation prompt is displayed and
#*
        functions/programs will not fail if they require admin privileges.
#*
#****************
function Elevate()
{
 # Only elevate if not ran from the task scheduler.
 Write-Host ' * Checking elevated access rights... ' -NoNewLine;
 if (-Not $s)
   # Check to see if we are currently running "as Administrator"
   if (!([Security.Principal.WindowsPrincipal][Security.Principal.WindowsIdentity]::GetCurrent()).IsInRole
([Security.Principal.WindowsBuiltInRole]"Administrator"))
   ł
     $ElevatedProcess = new-object System.Diagnostics.ProcessStartInfo "PowerShell";
     # Specify the current script path and name as a parameter
     $strType = GetBackupTypeParameter;
     $ElevatedProcess.Arguments = "-ExecutionPolicy Bypass & '" + $script:MyInvocation.MyCommand.Path + "'
$strType";
     # Indicate that the process should be elevated
     $ElevatedProcess.Verb = "runas";
     # Start the new process
     [System.Diagnostics.Process]::Start($ElevatedProcess);
     # Exit this unelevated script with exit code for "Error: Not elevated"
     Exit 3;
   }
 }
 Write-Host 'Done.';
}
```

The return code from these scripts will always be zero. If you are running these scripts from the scheduler then this option is not necessary. The scheduler will elevate the script at startup.

Option	Description
Enable Elevation	Enables UAC elevation for the entire script.
	This enables functions and programs to run outside the context of Macrium Reflect without requesting further elevation.

Powershell Duplicate option creates a copy of the backup to a chosen directory when the backup completes.

These options set the defaults for a script.



```
if ($iExitCode -eq 0) # if backup completed successfully...
 {
   $strBackupDir = GetLastBackupPath;
   if (![string]::IsNullOrEmpty($strBackupDir))
   ł
     SynchroniseDirectories $strBackupDir 'D:\Archive';
   }
 }
. . . . . . . . . . . . . . . .
#* Func: SynchroniseDirectories
#*
#* Desc: Copies all Macrium Reflect files to a supplied directory.
#*
function SynchroniseDirectories($strSrcDir, $strDstDir)
{
 Write-Host ' * Synchronising directories... ' -NoNewLine;
 if (Get-Command robocopy -ErrorAction SilentlyContinue)
 {
   # robocopy is available...
   # /copy:DAT - D:Data
   #
                A:Attributes
   #
                T:Time stamps
   # /purge
            - deletes destination files and directories that no longer
                 exist in the source
   #
   # /lev:0 - Does not copy subdirectories
   &robocopy $strSrcDir $strDstDir *.mr* /copy:DAT /lev:0 /purge /r:0 | Out-Null
 }
 else
 {
   # Fall back to xcopy...
   # Delete files from the target directory not present in the source directory
   $strDstDirChildren = $strDstDir+"\*";
   Get-ChildItem $strDstDirChildren -include "*.mr*" | Foreach-Object {
     $strMaybeDeletedSrcFile = $strSrcDir + '\' + $_.Name;
     if (-not (Test-Path $strMaybeDeletedSrcFile))
     {
      Remove-Item $_
     }
     else
     {
       $SrcFileTime = [datetime](Get-ItemProperty -Path $strMaybeDeletedSrcFile -Name LastWriteTime).
lastwritetime;
       $DstFileTime = [datetime](Get-ItemProperty -Path $_.FullName
                                                                           -Name LastWriteTime).
lastwritetime;
       $SrcFileTimeString = $SrcFileTime.ToString("yyyMMddHHmmss")
       $DstFileTimeString = $DstFileTime.ToString("yyyMMddHHmmss")
       if ($SrcFileTimeString -ne $DstFileTimeString)
       {
        Remove-Item $_
       }
     }
   }
   # /c - Continues copying even if errors occur.
   # /d - Date check; only copies if file does not exist or is older.
   # /h - Copies hidden and system files.
   # /i - If the destination does not exist, and you are copying more than one
   #
           file, this switch assumes that the destination is a folder.
   # /v - Verifies each new file.
   # /y - Overwrites existing files without prompting.
   &xcopy $strSrcDir\*.mr* $strDstDir /c /d /h /i /v /y | Out-Null
 }
 Write-Host 'Done.';
}
```

Option	Description						
Enable file copy	If enabled the backup will create a copy of the files from the backup to the supplied destination.						
Directory	Here you will need to enter the folder that you want to copy/archive your backup files to.						
Please note that the	Please note that the synchronization will delete files in the target directory that do not exist in the backup directory.						

# **Network Settings**

Windows contains a Network Credentials cache that enables network authentication details (User name and password) to be saved and re-used to logon automatically. However, scheduled tasks are run in Windows 'batch mode' and do not have access to saved credentials. Because of this you must enter network login details in the Macrium Reflect defaults to enable scheduled tasks to access and write to password protected network shares.

Reflect Defaults								×		
Backup	Restore	Update	Schedule	Scripts	Network	Email	Events	Advanced		
Network Logo	n	-	These credentia	twork log Ils are only ult blank to	gon credential used if a network ( use the system/us	connection isn't a	already establish	ned. Add Edit		
								Delete		
	Help OK Cancel									

Option	Description
Add	Add network logon details for a new network location
Edit	Edit an existing location.
	Note: The 'Default' location logon details will be used for all shares that aren't explicitly added.
Delete	Remove logon credentials

Add / Edit

Network Location Details								
Specify credentials for a specific network path using the fields below								
\\server\share \\WAS\public								
Username	Network\User							
Password	••••••							
	OK Cancel							
Option De	escription							

\\Server\share	Enter the UNC path to the root of the network share. Do not enter any sub-folders in the path
Username	Enter the authenticated user that has access to the share
Password	Enter the users password.

You can also select 'Default' and click 'Edit' to provide default credentials to be used for all network shares:

Network Location Details									
Specify credentials for a specific network path using the fields below									
\\server\share									
Username	Network\User								
Password	••••••								
	OK Cancel								

# **Email Settings**

- For many users, email notification of success or failure of a backup helps them keep on top of the status of their backups, particularly with scheduled backups which take place in the background.
- Select 'Email' > 'Email Server'.

Reflect Defaults								×
Backup	Restore	Update	C Schedule	Scripts	Network	Email	Events	Advanced
Email Server Email Success Email Failure			Senders Authent	Email	Enter the sender email address          Auto Detect          ✓			
			SMTP Pa	assword	Enter server pass	sword		
			SMTP Se	erver	Enter host name			
			Connect	ion Type	Plain Text (No Sec	curity)		~
			SMTP Po	ort	25			
			Test Re	cipients	Enter test recipie	nts and click Test	, separate recip	pients with ;
								Test
						Help	OK	Cancel

#### Email Server options description:

Option	Description										
Senders Email	Your e-mail address associated with your ISP or Gmail account etc.										
	Note: If you use e-mail software such as MS Outlook, you can find the settings under Account Settings for e-mail address, user- name and Server.										
Authentication	Authentication options are set by your email provider/server.										
	Auto Detect V										
	Auto Detect Challenge/Response Authentication (CRAM-MD5) Secure Username/Password login (AUTH LOGIN) Username/Password login (AUTH PLAIN) Microsoft NT Lan Manager (NTLM) Note: If you do not know your authentication settings, try Auto Detect.										
SMTP Username	The user name associated with your e-mail account. This is essentially your email address.										
SMTP Password	This is the password for your e-mail Server.										
SMTP Server	This is the outgoing / SMTP Server setting or IP address.										

Connection Type	This is the setting for the way Macrium Reflect will contact the Server.
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Plain Text (No Security)
	Plain Text (No Security)         Secure Sockets (SSL/TLS)         Transport Layer Security (STARTTLS)         Note: These settings can be found from your email provider.
SMTP Port	This is associated with <b>Connection Type</b> and is the port number that the SMTP server is listening on. Note: These settings can be found from your email provider.
Test Recipients	This option is used to test the configured settings; enter your e-mail address in that field and click <b>Test</b> to send a test message to your email.

The following examples show completed Server settings for a typical ISP.

Reflect Defaults								×
Backup	Restore	Update	Schedule	Scripts	Network	Email	Events	Advanced
Email Server Email Success Email Failure			Senders Authent SMTP U: SMTP Pa SMTP Se	Email tication sername assword erver tion Type ort	er Settings for username@gmail Auto Detect username@gmail ••••••••••••••••••••••••••••••••••••	.com		✓ ✓ ✓ ✓ ✓
						Help	OK	Cancel

• Click **OK** to finish.

Note: If you are using your Gmail account then please see here: Using Gmail SMTP Server for sending backup notification emails

**Email success** settings define who receives emails regarding the success of a backup and what message they receive.

Select Email Success

Reflect Defaults								×
Backup	Restore	Update	Schedule	Scripts	Network	Email	Events	Advanced
Email Server Email Success Email Failure			Send Ema	ail Notifications th log file th VSS log file t List Enter Macrie	ail settings fo on successful bac a list of recipient um Reflect - Back your email messa	ckups s, separate each up Success ge here for a suc	email address v	vith ;
						Help	ОК	Cancel

• Select Send Email Notifications on successful backups.

Image: Sector index of the sector i	Reflect Defaults							
Email Success         Email Failure         Default email settings for successful images or backups         Send Email Notifications on successful backups         Attach log file         Recipient List       Enter a list of recipients, separate each email address with ;         Subject       Macrium Reflect - Backup Success	Backup R	Restore Up	pdate Schedule	Scripts	Network	Email	Events	Advanced
	Email Success		Send I At At Recip Subje	Email Notifications tach log file ttach VSS log file ient List Ente sct Macr	on successful bac r a list of recipients ium Reflect - Back	kups s, separate each up Success ge here for a suc	email address v	
						]		
Option         Description           Attach log file         Will attach the log file from the creation of the backup.					1			

Attach VSS log file Will attach the VSS log with the events made during the backup.

• Enter the email addresses of all recipients in Recipient List, separating each email address with a semi-colon.

Reflect Defaults								×
Backup	Restore	Update Update	C Schedule	Scripts	Network	Email	Events	Advanced
Email Server Email Success Email Failure			Send Em	ail Notifications ch log file ch VSS log file nt List Usern Macrii	ail settings fo on successful bac ame@gmail.com; um Reflect - Back your email messa	ckups username1@gm up Success ge here for a suc	ail.com	
						Help	ОК	Cancel

- Enter the subject for the email in **Subject**.
- Enter a message to be sent regarding the email in **Content**, include the PC that generated the success is identified.

Reflect Defaults								×
Backup	Restore	Update	Chedule	Scripts	Network	Email	Events	Advanced
Email Server Email Success Email Failure			Send Em	ail Notifications ch log file ch VSS log file t List usern Macrii	ail settings fo on successful bac ame@gmail.com; um Reflect - Back op PC 13 Image b	ckups username 1@gma up Success backup of drives (	ail.com C, D and E.	
						Help	OK	Cancel

• Click OK.

Email failure settings define who receives emails regarding the failure of a backup and what message they receive.

• Select Email Failure.

Reflect Defaults								×
Backup	Restore	Update	Schedule	Scripts	Network	Email	Events	Advanced
Email Server Email Success Email Failure			Send Em	ail Notification o ch log file ch VSS log file t List Enter Macriu	ail settings fo	s, separate each up Failed ge here for a fail	email address v ed backup	vith ;
						Help	ОК	Cancel

• Select Send Email Notification on Failed Backups.

Reflect Defaults									×
Backup	Resto	ore	Update	Schedule	Scripts	Network	Email	Events	Advanced
Email Server Email Success Email Failure				Atta	nail Notification ach log file ach VSS log file nt List Ente t Macr	on Failed Backups r a list of recipient ium Reflect - Back your email messa	s, separate each	email address v	
Option		Descri		- fue	tion of the b-				
Attach log file	·   '	/vill atta	Il attach the log file from the creation of the backup.						

Attach VSS log file Will attach the VSS log with the events made during the backup.

• Enter the email addresses of all recipients in Recipient List , separating each email address with a semi-colon.

Reflect Defaults								×
Backup	Restore	Update	C Schedule	Scripts	Network	Email	Events	Advanced
Email Server Email Success Email Failure			Send Em	ail Notification of ch log file ch VSS log file nt List usern Macrie	ail settings fo n Failed Backups ame@gmail.com; um Reflect - Back your email messa	username 1@gma up Failed ge here for a fail	ail.com	
						Help	OK	Cancel

- Enter the subject for the email in **Subject**.
- Enter a message to be sent regarding the email in **Content**, include the PC that generated the success is identified.

Reflect Defaults								×
Backup	Restore	Update	C Schedule	Scripts	Network	Email	Events	Advanced
Email Server Email Success Email Failure			Send Ema	ail Notification o h log file h VSS log file t List usern Macriu	ail settings fo in Failed Backups ame@gmail.com; um Reflect - Backi op PC 13 Image b	username 1@gma up Failed	ail.com	ps
						Ticp	UK	Curreer

• Click OK.

## Events

Enable or disable Windows Events generated by Macrium Reflect.

Reflect Defaults	;								×
Backup	Restore	Update	C	S	cripts	Netwo	ork Email	Events	Advanced
Events				Mod	lify Events	gene	rated by Macriun	n Reflect	
							v as well as modify the Macrium Reflect data	event text itself	. Use
			Log	ID	Туре		Text		^
				256	Reflect star	t	Macrium Reflect sta	arting - <%REFI	LECT%>
				257	Reflect stop	)	Macrium Reflect en	ding	
				258	SSL error		An SSL error was en	counteed - <%	REFLECT%
				259	Socket erro	r	A Windows socket e	error was encou	untered - <5
				260	Backup star	t	Backup started - < 9	%REFLECT%>	
				261	Backup fini	sh	Backup finished		
				262	Backup 4GE	3 limit	Limiting destination	n image file size	to 4 GB du
				263	Backup rea	d file	Failed to open file -	<%REFLECT%	>
				264	Memory en	ror	A memory error wa	s encountered	- <%REFLE(
				265	Backup VSS	rrror	A VSS error was enc	ountered creat	ing the snap
			<	200	·			a competit	
							Def	ault Current	Default All
							Help	ОК	Cancel

## Advanced

Editor settings are used to amend the default editor settings for; VBScript files, Powershell script files, MS-DOS batch and XML.

Reflect Default	S							×
Backup	Restore	Update	C Schedule	Scripts	Network	Email	Events	Advanced
Editors Advanced Bac Advanced Inc Destination D VSS options Macrium Refl	rementals rive Discovery			Editor Settin	-			
			Parameters "%f"	OWS\system32 (%f = filename) or for PowerShe	):			
			"%f"	(%f = filename)				
			C:\WINDO	or for MS-DOS b DWS\system32 (%f = filename)	\notepad.exe			
			C:\WINDO	or for XML files: DWS\system32 (%f = filename)	\notepad.exe			
						Help	ОК	Cancel

Advanced Backup Options are used to modify your backup options.

Reflect Default	S							×
Backup	Restore	Update	C Schedule	Scripts	Network	Email	Events	Advanced
Editors Advanced Bar Advanced Inc Destination D VSS options Macrium Refl	rementals rive Discovery				ed Backup O		backups	
			Display l Display l Disable l Do not a Enforce Run a 'F	each bad cluster backup notificati CD/DVD drive er abort file and fol entered image of full instead of 'I CD Engine log fil	numeration, use if der backup if root or file and folder b nc' or 'Diff' if the o e (restart required	s may slow down	onds (range of 0 system lock-up i	to 60) ssues
				ioner roneo inti	Mega Bits per Seo	Help	ок	Cancel
						Ticip	ON	Curreer

Option	Description
Enable file write caching	Is useful if experiencing slow or failed backups.
Ignore bad sectors when creating images.	Damaged disks may still be imaged if this option is selected.
Display backup notification delay for set number of seconds.	Changes the time delay windows is displayed before a scheduled backup starts.
Disable CD/DVD drive enumeration	This option is useful if experiencing system lockup issues.
Do not abort a file and folder backup if a root folder is missing.	Enabling this option will allow your File and Folder backup to continue even if a root folder of the backup is missing.
Enforce an entered image or File and Folder backup file name.	Normally, if you run an Incremental or Differential image of say drive 'C', the target folder is searched for a recent backup set for the same source (Drive 'C'). The backup set is then appended to. The file name you have chosen for the backup will not be used in this matching process. If you enter your own file name and select "Enforce entered image or file and folder backup file name" then only backup
	sets using the same file name and for the same source will be appended to, if none is found then a new full will be created.
Create a CD Engine log file	Turning this option on allows reflect to create additional logs that can be used for troubleshooting created CD/DVD Rescue Media.

Report transfer rates.	Will allow you to change the way transfer rates are reported in.
	Mega Bits per Second (Mb/s) Mega Bits per Second (Mb/s) Mega Bytes per Second (MB/s)
	Mega Bytes per Second (MB/s)

### Advanced Incremental options are used for enabling Delta Indexes for Incremental backups

Reflect Defaults		×			
Backup Restore Update	Scripts Network Email	Advanced			
Editors Advanced Backup Options Advanced Incrementals Destination Drive Discovery VSS options Macrium Reflect PE Files	Set Advanced Incrementa	al Options			
		Help OK Cancel			

• Enabling **Delta indexes** will reduce incremental file size and can increase the speed of merging Incremental backups during Synthetic Full and Incremental consolidation. Additionally, all previous files in the backup set, up to the previous Diff or Full, are required to continue to append to the set.

If this option enabled then the image Index for each incremental is calculated when the file is opened. This may increase the time required to mount an Incremental backup in Windows Explorer.

For information on Changed Block Tracker please see here

Destination Drive Discovery options change the way your destination drive is being discovered if the destination is a local drive.

Reflect Defaults								×
Backup	Restore	Update	Schedule	Scripts	Network	Email	Events	Advanced
Editors Advanced Backup Options Advanced Incrementals Destination Drive Discovery VSS options Macrium Reflect PE Files								
Choose how the destination drive is discovered if the backup destination is a local drive. <ul> <li>Use the assigned drive letter to locate the backup drive. (default)</li> <li>The drive letter in the destination path is used exclusively to locate the backup target path.</li> <li>This enables multiple backup drives to be used in rotation if Windows assigns the same drive letter for each drive.</li> </ul>						te the		
Use the unique volume identifier to locate the backup drive. The unique volume identifier associated with the backup drive is saved in the backup definition file and used to locate the destination path. This enables Windows to assign a different letter to the same drive and					h.			
Note: Changing this option affects new backup definitions. To apply to an existing backup definition the definition must be edited to re-save the XML file.						ion.		
						Help	OK	Cancel

Changing the option affects new backup definitions. To apply to an existing backup definition, the definition XML file needs to be opened and re-saved by clicking 'Finish'.

Option	Description
Use the assigned drive letter to locate the backup drive (default)	The drive letter in the destination path is used exclusively to locate the backup target path. Multiple backup drives can be be used in rotation if Windows assigns the same drive letter for each drive.
Use the unique volume identifier to locate the backup drive	The unique volume identifier is associated with the backup drive is saved in the backup definition file and used to locate the destination path. Windows will assign a different letter to the same dive and the new letter will be automatically chosen as the backup destination.

VSS Options are used to set options for VSS

Reflect Defaults	5							×
Backup	Restore	Update	C	Scripts	Network	Email	Events	Advanced
Editors       Advanced Backup Options         Advanced Incrementals       Destination Drive Discovery         VSS options       Macrium Reflect PE Files         Macrium Reflect PE Files       Exclude all VSS writers to resolve specific snapshot failures         May cause issues with VSS aware applications       Automatically retry without VSS writers on failure         Create additional VSS logs for debugging       Exclude SQL Server VSS writers.         Select this option if you are using dedicated SQL backup software. This will prevent SQL logs from being truncated when creating a Disk Image or File and Folder backups.         Select this option if you are using dedicated MS Exchange backup software. This will prevent SQL logs from being truncated Ms Exchange backup software. This will prevent Select this option if you are using dedicated MS Exchange backup software. This will prevent Select this option if you are using dedicated MS Exchange backup software. This will prevent Select this option if you are using dedicated MS Exchange backup software. This will prevent Select this option if you are using dedicated MS Exchange backup software. This will prevent Select this option if you are using dedicated MS Exchange backup software. This will prevent Select this option if you are using dedicated MS Exchange backup software. This will prevent Select this option if you are using dedicated MS Exchange backup a Disk								
						Help	ОК	Cancel

Option	Description
Exclude all VSS writers to resolve specific snapshot failures.	This option will disable VSS writers. Due to Windows system configuration issues, VSS writers are the cause of some backup failures. This may cause issues with other VSS aware applications.
Automatically retry without VSS writers on	Reflect will try to create a backup of your system without using VSS; this option is useful when
failure	experiencing VSS related errors.
Create additional VSS logs for debugging.	Each backup will create additional VSS logs that can be used in order to troubleshoot VSS related issues when creating backups.
Exclude SQL Server writers.	Select this option if you are using dedicated SQL backup software. This will prevent SQL logs from being truncated when creating a Disk Image or File and folder backup.
Do not truncate Exchange logs when imaging or creating file and folder backups.	Select this option if you are using dedicated MS Exchange backup software. This will prevent Exchange logs from being truncated when creating a Disk Images.

Macrium Reflect PE Files options are used to select the drive where Macrium Reflect PE files will be stored.

Reflect Default	5							×
Backup	Restore	Update	C Schedule	Scripts	Network	Email	Events	Advanced
VSS options	rementals rive Discovery		<b></b>	Set Option	s For Macrium	n Reflect PE I	Files	
Macrium Refl	ect PE Files		Select drive	e where Macriu	n Reflect PE files w	ill be stored		
				vailable Space	-			
			□ C: □ D:	9.78 GB 22.01 GB				
					ations are listed at	Dove		
						Help	OK	Cancel

• If your system contains multiple drives you can choose on what Drive Macrium Reflect PE files are saved.