Cristie Virtual Appliance

BMR Backup and Recovery Guide

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1 Introduction

The Cristie Virtual Appliance (VA) provides central management, deployment and licensing of Cristie's range of backup, recovery and replication software. It is provided free of charge to licensed users of Cristie software products. The Cristie VA is a Linux-based virtual machine that manages Windows, Linux, AIX, Power and Solaris installations of Cristie software products.

This document discusses how to configure and invoke the Cristie VA BMR Backup and Recovery feature. Internally backup functionality is implemented using the **Cristie CBMR** product. Recovery functionality is implemented using the **Cristie ABMR, CBMR, CoBMR, NBMR, RBMR or TBMR** products.

> ***The following discussion assumes your Cristie VA is already deployed and has the latest updates.***

This documentation relates to version 4.8.1 of the Cristie VA product.

1.1 Web Browser Support

Once installed Cristie recommends using the VA in conjunction with Google Chrome. However, Firefox, Opera or Microsoft Edge can also be used as alternatives.

> ***Note: Microsoft Internet Explorer is not supported.***

The browser Window should be set to a minimum screen resolution of 1366 x 768 pixels.

1.2 OS Support

OS support for **Backup and Recovery** is summarised in the Cristie Backup/Recovery OS Support Matrix. Currently Windows and Linux are fully supported for backup, recovery and monitoring, whereas Solaris and AIX are only supported for backup and recovery monitoring.

2 Prerequisites

Before beginning a BMR Backup or Recovery operation the Cristie VA must be configured correctly. These are the configuration steps needed.

> ***Note: Cristie VA cannot control backups using 3rd party backup products - just Cristie's own backup product CBMR. However recoveries are supported from all Cristie BMR backup products including those that use 3rd party backup products.***

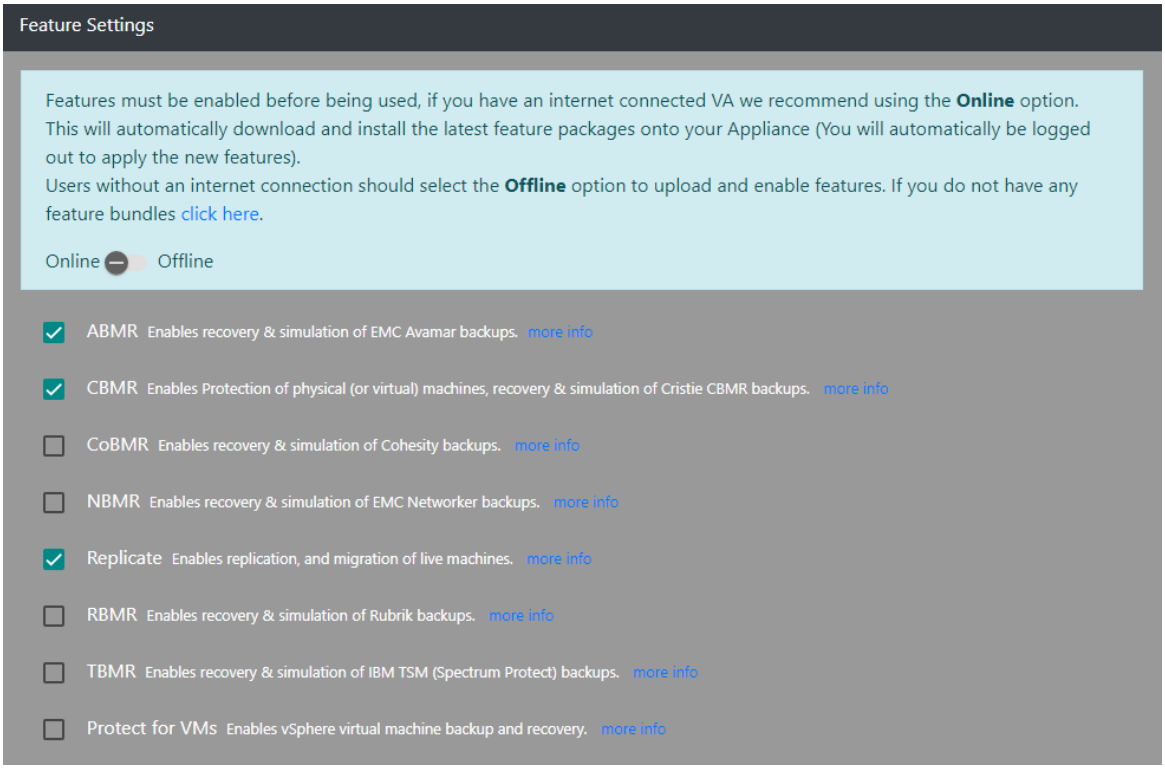
2.1 Enable the Backup and Recovery Feature

On the Cristie VA Dashboard, navigate to **Options**  and then select **Feature settings**. This will show a list of enabled Features. Please ensure that one or more of the ABMR, CBMR, CoBMR, NBMR, RBMR or TBMR Features is enabled.

At the moment only CBMR scheduled ***backups*** can be controlled from the Cristie VA. However scheduled ***test recoveries*** can be configured for any of the BMR products as long as their respective host backups have the appropriate ***BMR Agent*** installed. Deployment of the BMR Agents is controlled by **Estate Management** in the Cristie VA.

Only CBMR is required for Cristie Backups. Backups for all the other products must be configured manually on their respective hosts or servers (e.g. IBM Spectrum Protect).

> ***Note: It is not necessary to add the CBMR Feature to perform Recoveries for any of the other BMR products.***

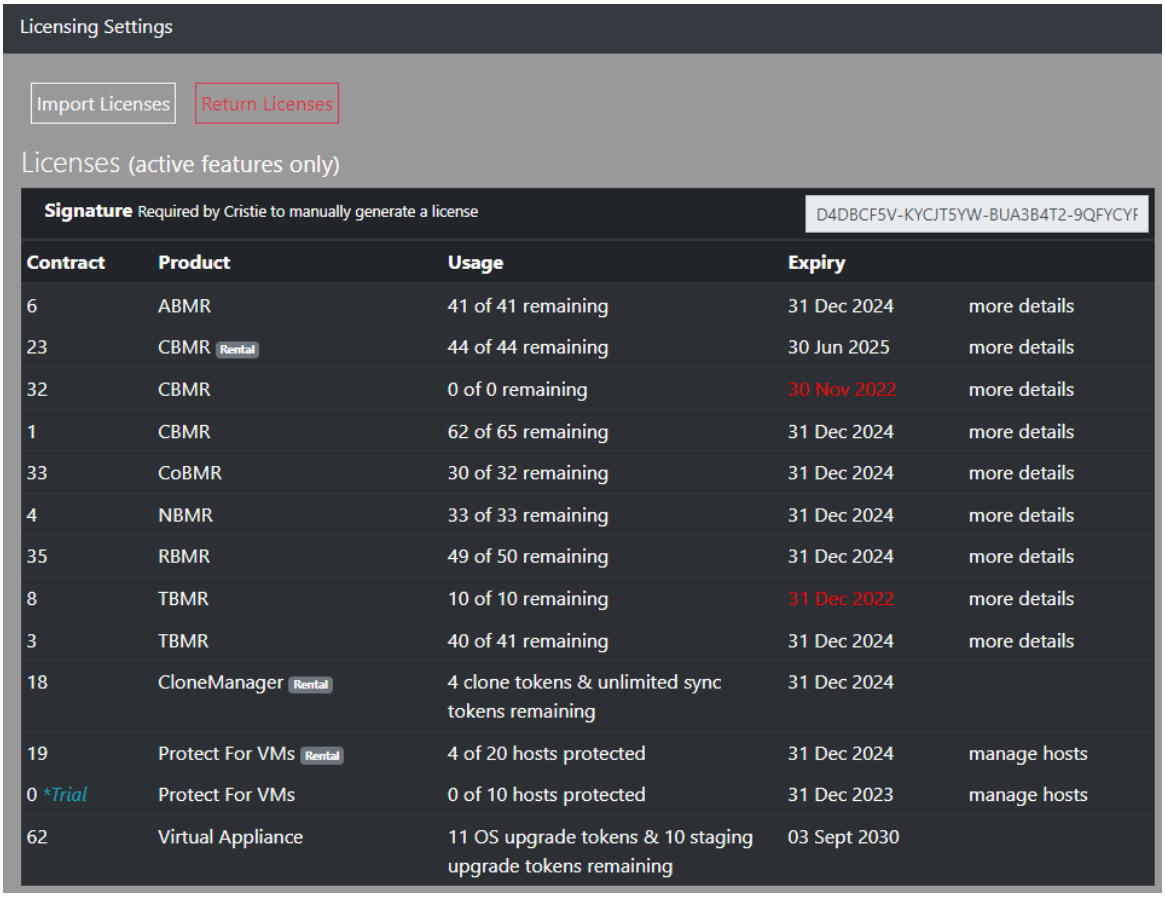


> ***Note: The Cristie VA Configuration Guide describes how to add Features to the Cristie VA.***

2.2 Add Licenses

You must ensure your Cristie VA has sufficient **BMR Licenses**. These licenses are consumed every time a new BMR product agent is deployed to a host via **Estate Management**.

To check this, click **Options**  on the Cristie VA Dashboard and then select **Licensing settings**. You will then see all the available **BMR** licenses.



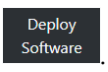
Contract	Product	Usage	Expiry	
6	ABMR	41 of 41 remaining	31 Dec 2024	more details
23	CBMR Rental	44 of 44 remaining	30 Jun 2025	more details
32	CBMR	0 of 0 remaining	30 Nov 2022	more details
1	CBMR	62 of 65 remaining	31 Dec 2024	more details
33	CoBMR	30 of 32 remaining	31 Dec 2024	more details
4	NBMR	33 of 33 remaining	31 Dec 2024	more details
35	RBMR	49 of 50 remaining	31 Dec 2024	more details
8	TBMR	10 of 10 remaining	31 Dec 2022	more details
3	TBMR	40 of 41 remaining	31 Dec 2024	more details
18	CloneManager Rental	4 clone tokens & unlimited sync tokens remaining	31 Dec 2024	
19	Protect For VMs Rental	4 of 20 hosts protected	31 Dec 2024	manage hosts
0 *Trial*	Protect For VMs	0 of 10 hosts protected	31 Dec 2023	manage hosts
62	Virtual Appliance	11 OS upgrade tokens & 10 staging upgrade tokens remaining	03 Sept 2030	

Alternatively it is also possible to obtain **Rental** licenses. These allow backups/recoveries for a host to be made for a fixed time period (usually 1-3 years). Note the time period begins from the purchase date.

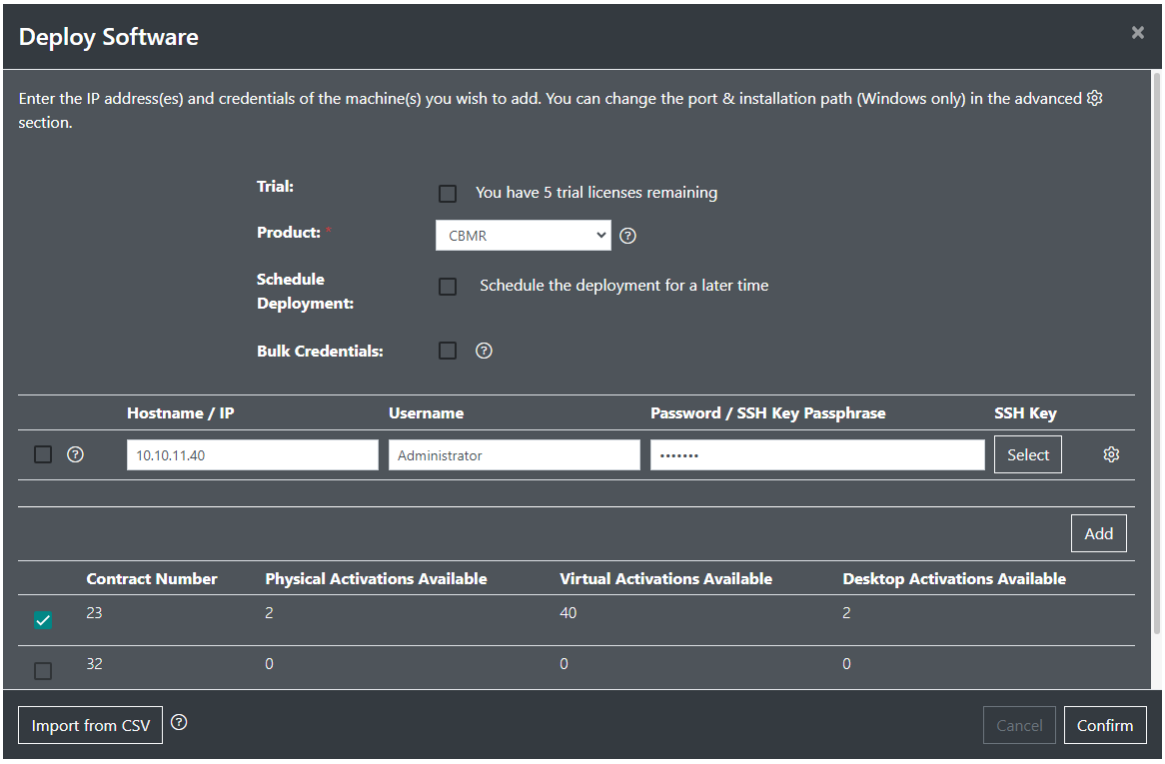
Note: Licenses shown in red have expired.

2.3 Deploy Backup Agent

Before running a backup operation (either via CBMR or a supported 3rd party backup product), the appropriate **BMR Agent** must be deployed to the host or hosts to be backed up and subsequently recovered.

To do this, click **Estate Management**  on the Cristie VA Dashboard and then click 

.



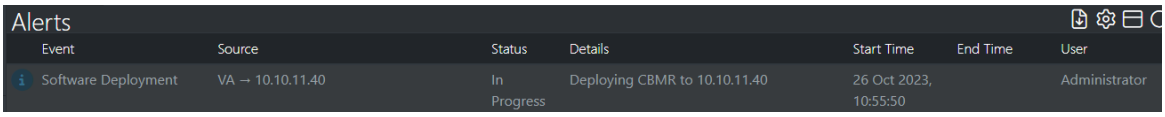
In the above example the product is set to **CBMR**. Add the **Hostname** or **IP address** of the host to deploy the agent to. Add the **host access credentials**.

> ***Note: For Linux, Solaris and AIX systems, access credentials do not have to be 'root'. Deployment uses 'sudo' when root credentials are not supplied. Obviously the credentials used must allow 'sudo' to be used.***

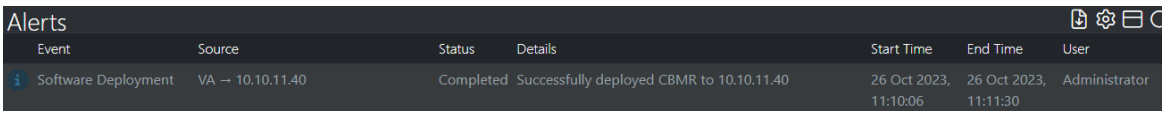
Also select the **Contract Number** from which the product activation token will be decremented.

Click the Add button to deploy the agent to multiple hosts in one operation.

Finally click Confirm to begin the agent deployment. While the deployment runs you will see this event:



When the deployment completes you will see this event:



At this point your host is ready for backup.

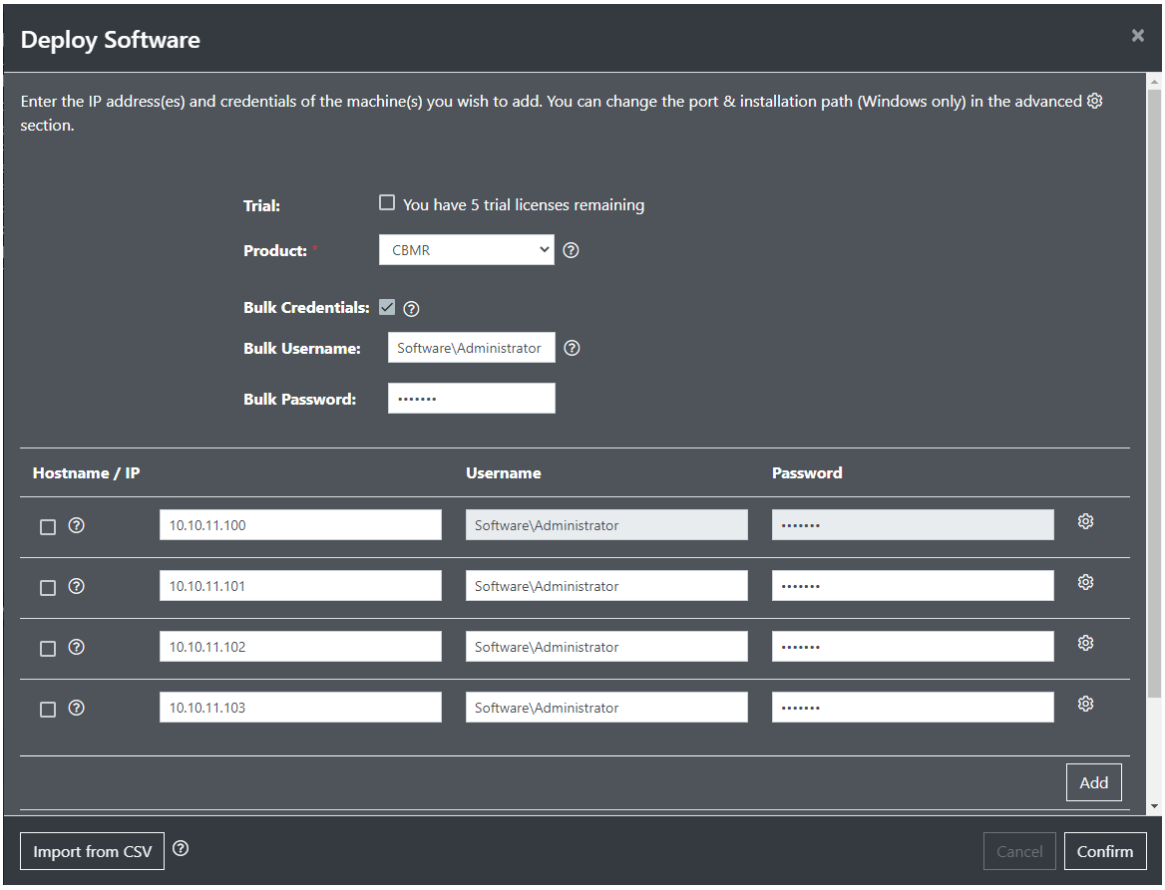
Deployment of all other BMR Products is identical to the process described above. Just select one of ABMR, CoBMR, NBMR, RBMR or TBMR instead of CBMR.

Note: The host may be Windows, Linux or Solaris based.

2.3.1 Bulk Credentials

Where you wish to deploy the agent to multiple machines and all the machines use the same access credentials (for example the Domain Administrator on Windows) you can avoid entering the same credentials separately for every machine with **Bulk Credentials**. To do this run the same menu sequence as before to reach the Deploy Software dialogue and click **Bulk Credentials:** ☑.

The dialogue will then allow you to set a single common **Username/Password** to be used for all:



All the selected hosts will then be displayed with the bulk credentials pre-filled.

Note: For Linux, Solaris and AIX systems, access credentials do not have to be 'root'. Deployment uses 'sudo' when root credentials are not supplied. Obviously the credentials used must allow 'sudo' to be used.

2.3.2 Import from CSV

Rather than setup each machine target manually using the ***Deploy Software*** dialogue it is possible to import a list of machines previously prepared offline.

The list of machines to deploy to must be created in CSV format and must follow the format below:

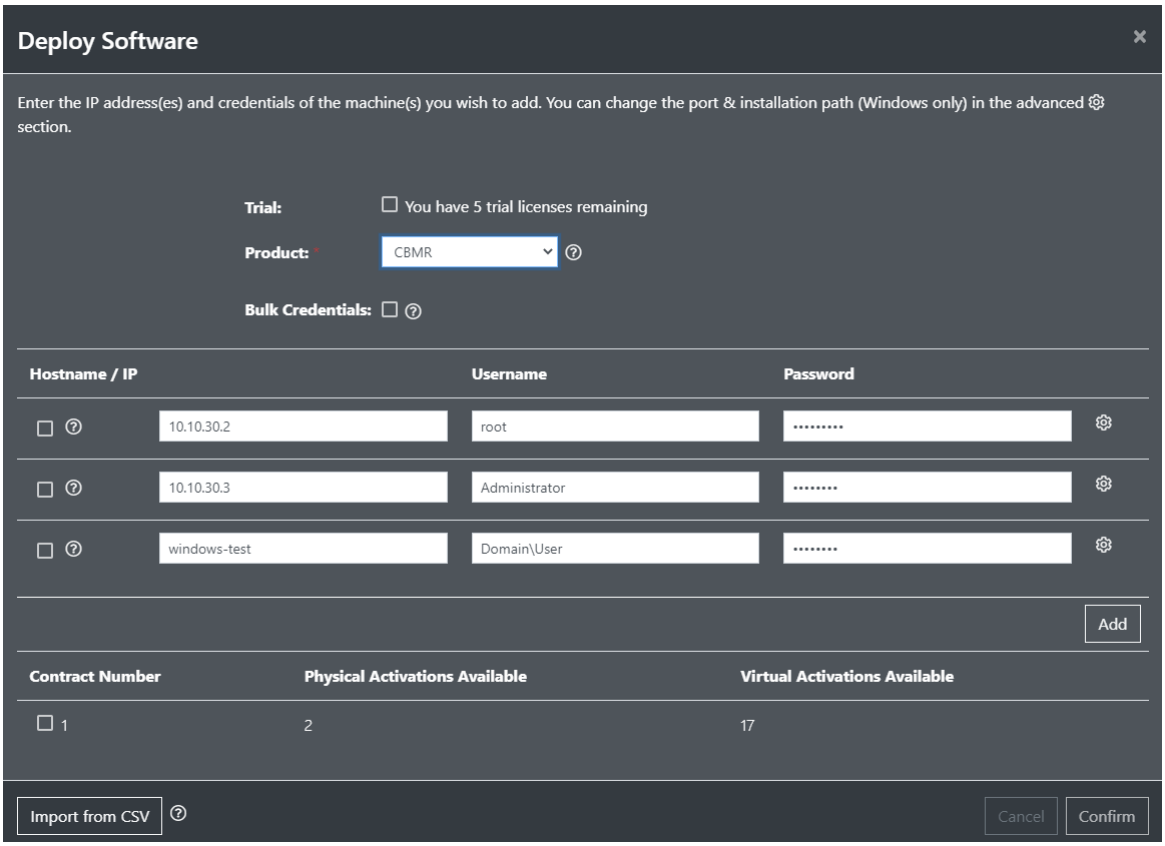
Hostname/IP, Port Number, Username, Password

An example of a CSV file is as follows:

```
10.10.30.2,22,root,p@ssw0rd!
10.10.30.3,5986,Administrator,p@ssw0rd
windows-test,5986,Domain\User,p@ssw0rd
```

Note: For Linux, Solaris and AIX systems, access credentials do not have to be 'root'. Deployment uses 'sudo' when root credentials are not supplied. Obviously the credentials used must allow 'sudo' to be used.

To import the file first click Import from CSV on the Deploy Software dialogue. This will display a browser dialogue allowing you to locate your CSV file. The contents will be read and the hosts displayed in the dialogue as shown.



Note: After importing a CSV file the dialogue may take a while to populate.

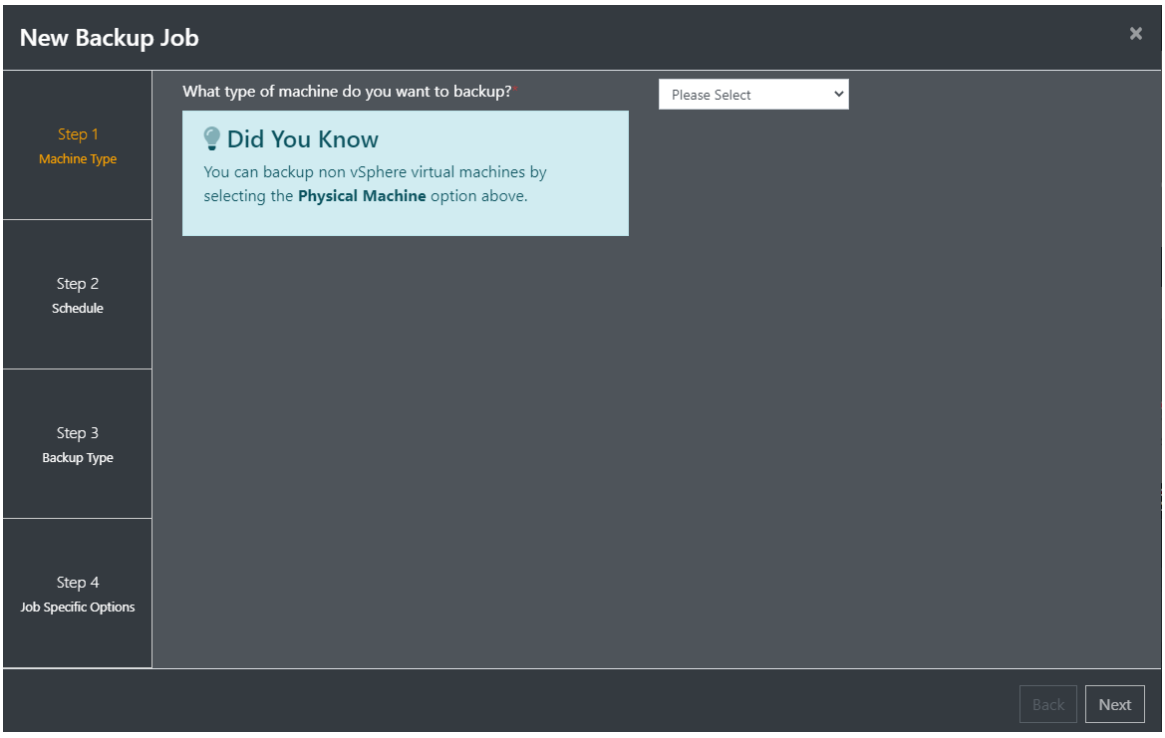
3 Backup

Cristie backup is provided by the **CBMR** product on all supported platforms. Backups are available in 2 forms - a network share file backup in VTD format (no incremental support) or a network share backup in ***targz*** format (incremental supported). The latter is supported in **Linux, Solaris** and **AIX** only.

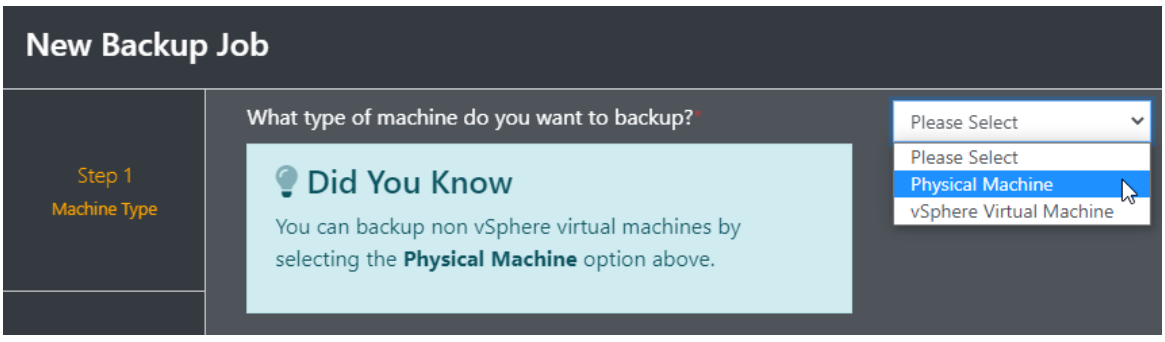
3.1 Create a Backup Job

To control a Backup you must first create a **Backup Job** and then add one or more **Backup Hosts** to the job. The hosts should already have ***CBMR Agents*** installed from **Estate Management**.

On the Cristie VA Dashboard, navigate to **Backup** and then select New Job. You will then see this dialogue.



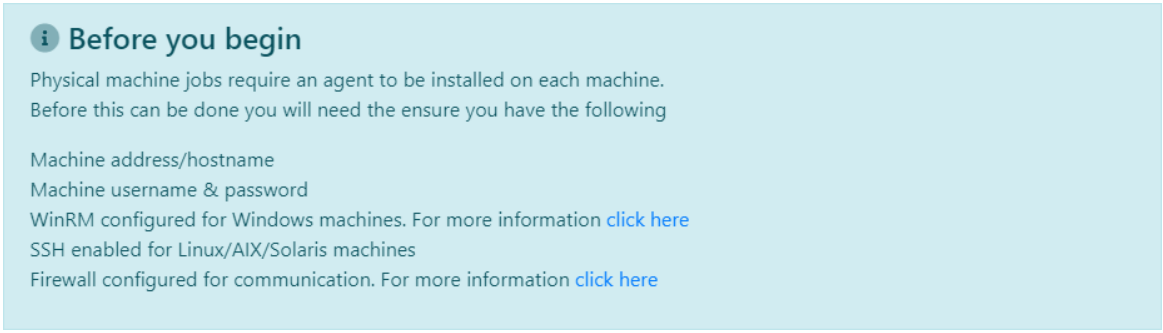
You will then be taken through a wizard sequence to define the **Physical Machine** for BMR backups. So select **Physical Machine** from the drop-down machine type:



Note the **Physical Machine** machine type also includes any VM host running on a Hypervisor reachable by the Cristie VA ***Discovery Settings***. The target VM could also be running in one of the

supported clouds.

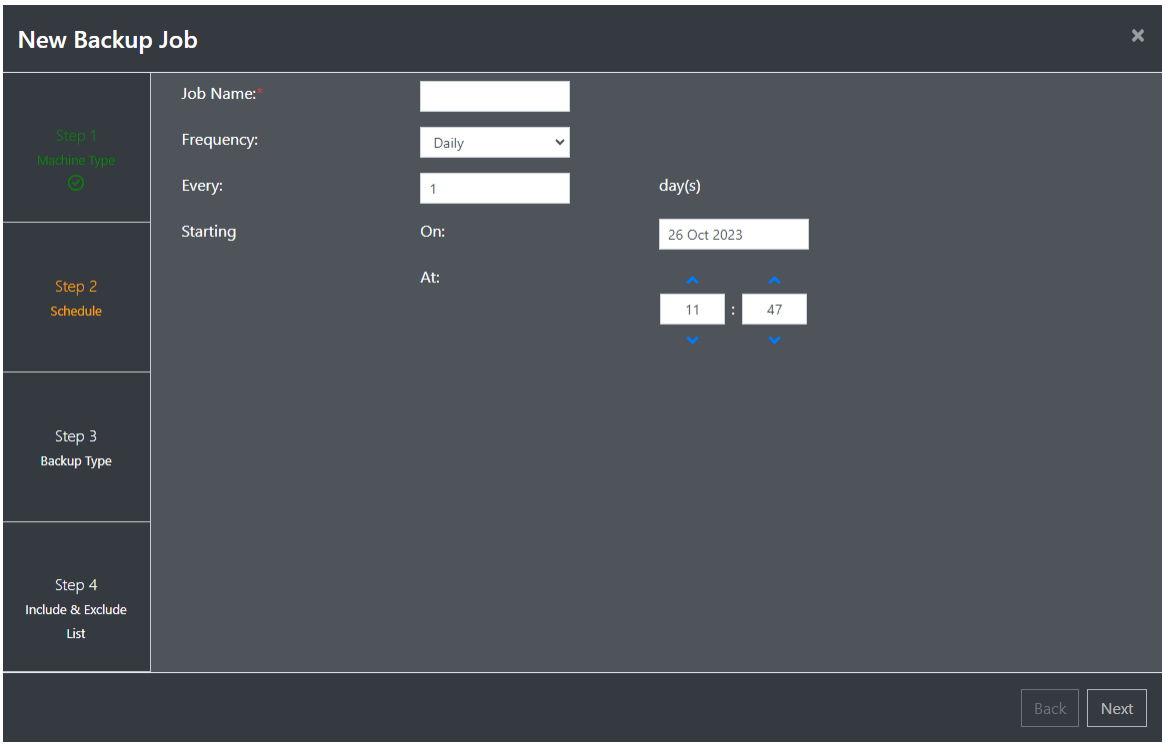
Please note the warning displayed when you choose this option.



For further information click on click here where provided.

Click Next to continue to ***Step 2*** in the wizard.

Note: the Back button can be used at any point in the wizard to return to the previous step.

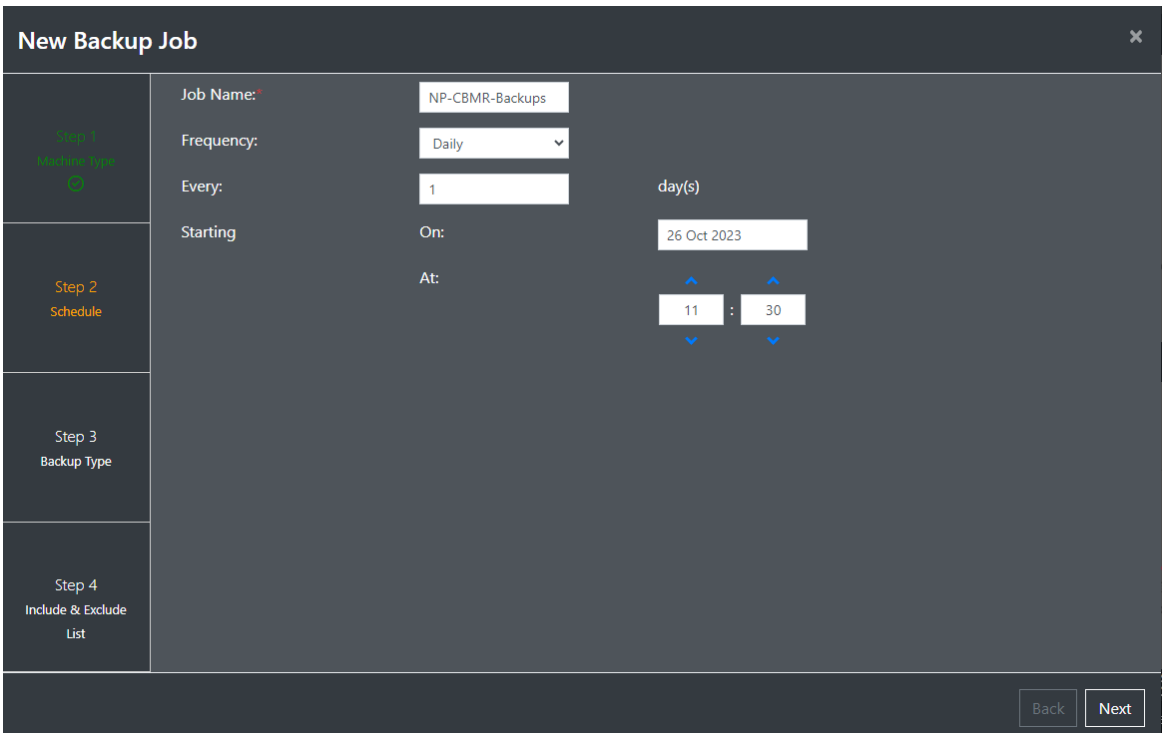


Give the new job a unique **Name**.

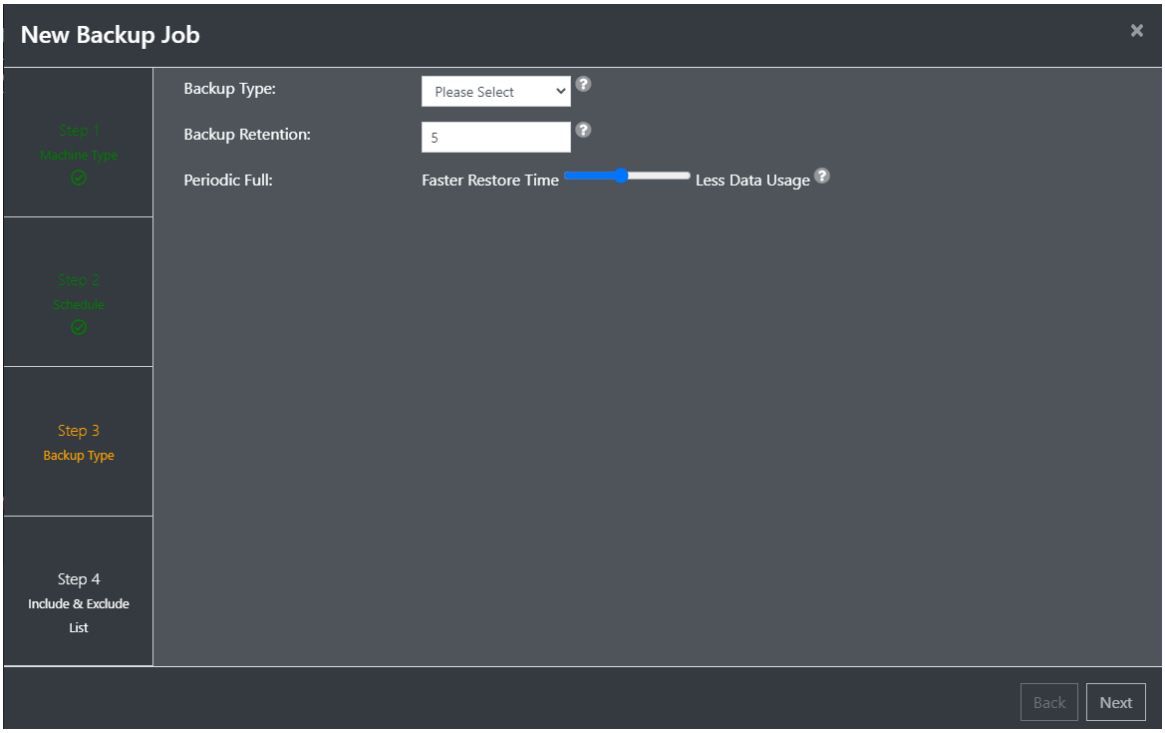
Specify the backup **Frequency** and the **Interval**. The frequency/interval can be set as summarised in the table below.

Frequency	Description
Once	Backup runs once only at the specified date/time
Hourly	Backups run every user specified number of hours at a selected time
Daily	Backups run every user selected number of days at a selected time
Weekly	Backups run on specific user selected day(s) of the week (Monday/ Tuesday etc.) at a selected time
Monthly	Backups run only on a specified day of the month at a selected time

You may also specify when the first backup run will occur. This first backup will always be a full backup.



Click  to move on to ***Step 3*** where the **Backup Type** can be selected.

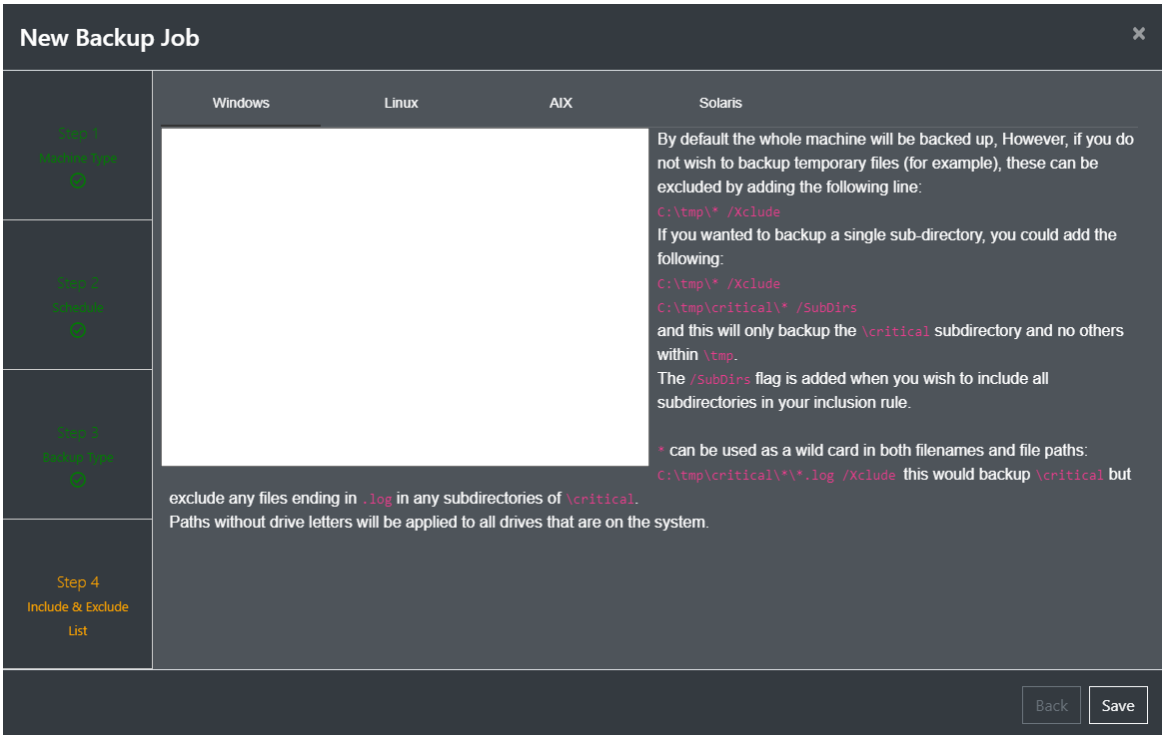


From the **Backup Type** drop-down list select ***Full*** or ***Incremental***. When the backup target is a VTD file on a network share, Full backups are always made regardless of this setting.

Backup Retention specifies the number of historical backups to be retained. The larger the number the more space the backups will occupy, but it will also provide you with more versions to restore in case of machine failure. In particular this is important should you find the latest stored backup is not the version you require.

Periodic Full allows you to specify how frequently a Full backup is made. Move the adjuster to the left to reduce restore time (more Full backups). Move it to the right to reduce the backup storage required (fewer Full backups).

Click Next to move on to ***Step 4*** where files can be excluded from the backup. Note the format of the file exclusions varies according to platform type (Windows, Linux, AIX and Solaris). Please refer to the **Platform** tab for an on-screen discussion of the file/directory format for that platform.



This is the last Step in the wizard sequence. Now click Save to create the new job.

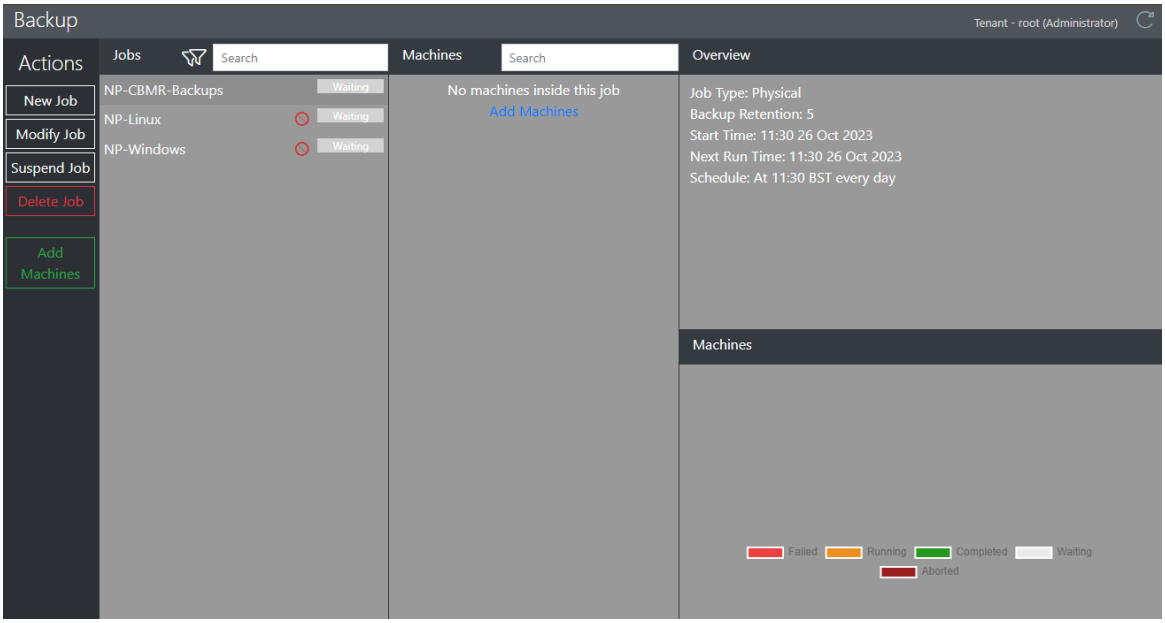
3.2 Add a Host to a Job

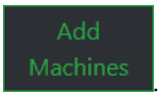
With a **Backup** job in place you can now add the host or hosts to the job. The required host obviously needs to be running and have the BMR agent pre-installed.

> ***Note: The hosts can be a mix of any of the supported platforms.***

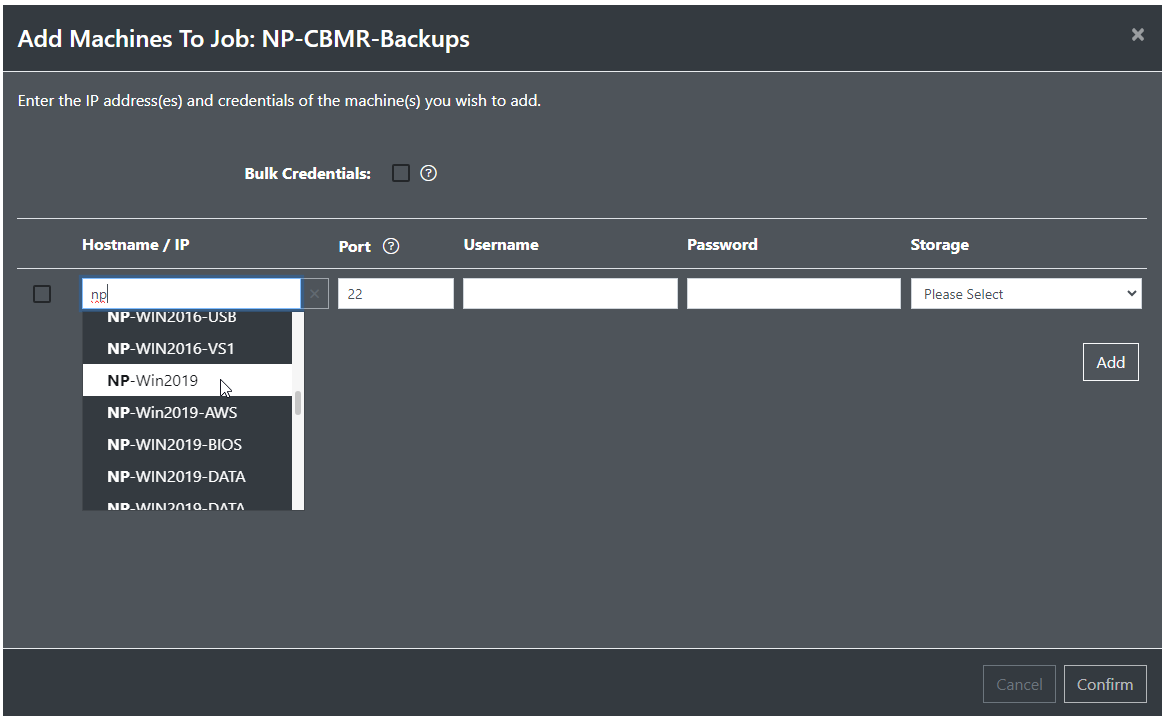
> ***SMB support must be installed for Linux/AIX/Solaris systems if SMB backup storage is used as it isn't part of the core OS. NFS support is however.***

To add a host, navigate to **Backup** and then select the job.



Click 

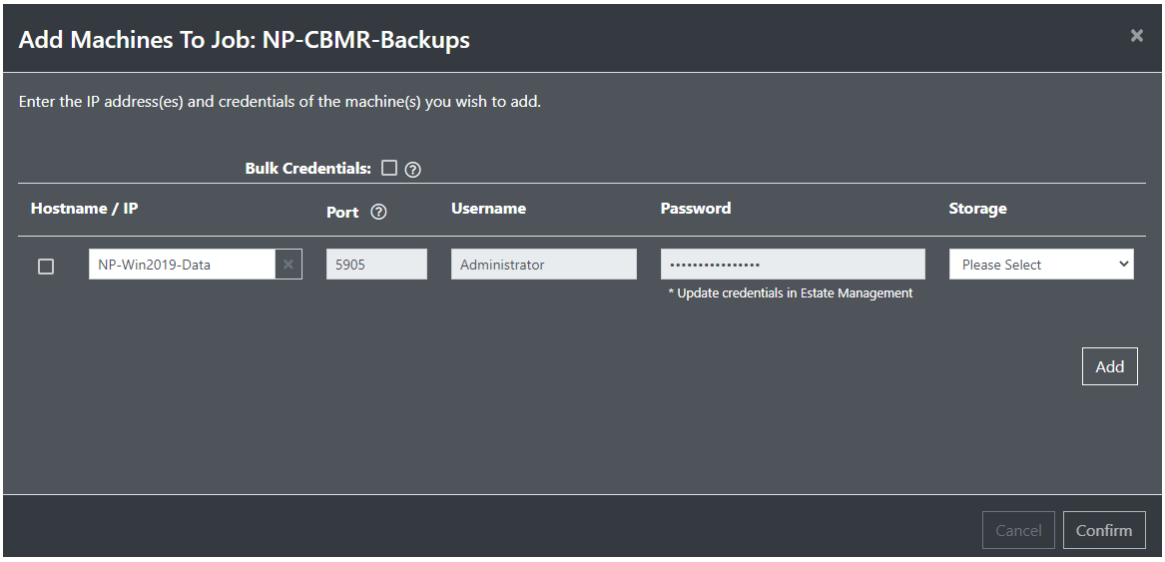
. This will bring up a dialogue where you can select the host to be added. Click the **Hostname** field and then the host from the drop-down list.



Note: Only hosts configured with the CBMR agent will be included in the drop-down list.

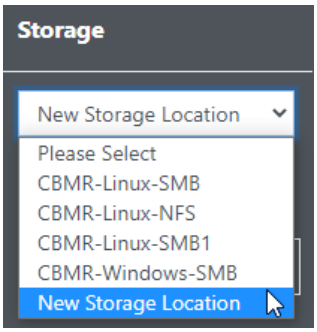
The **Port** field is normally set to 22 to access SSH on Linux targets or 5905 for WinRM on Windows targets. For Linux, Solaris and AIX hosts please change the port if this differs from your configuration. It is not possible to change the port for Windows hosts.

After selecting the host you will now be presented with this dialogue:

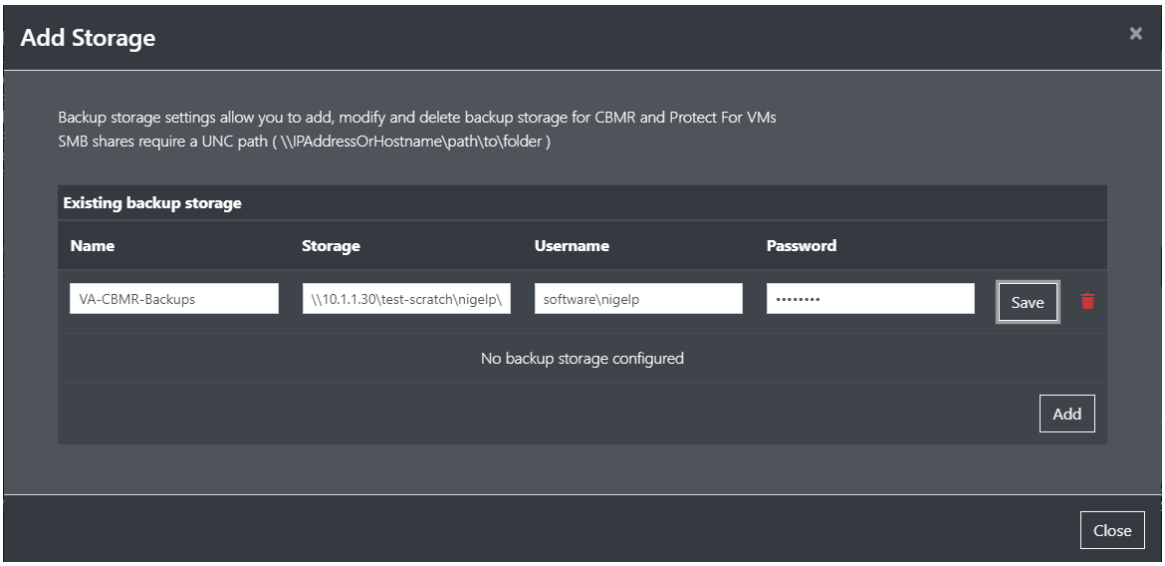


The host access credentials (the **Password** can be changed here) are pre-filled.

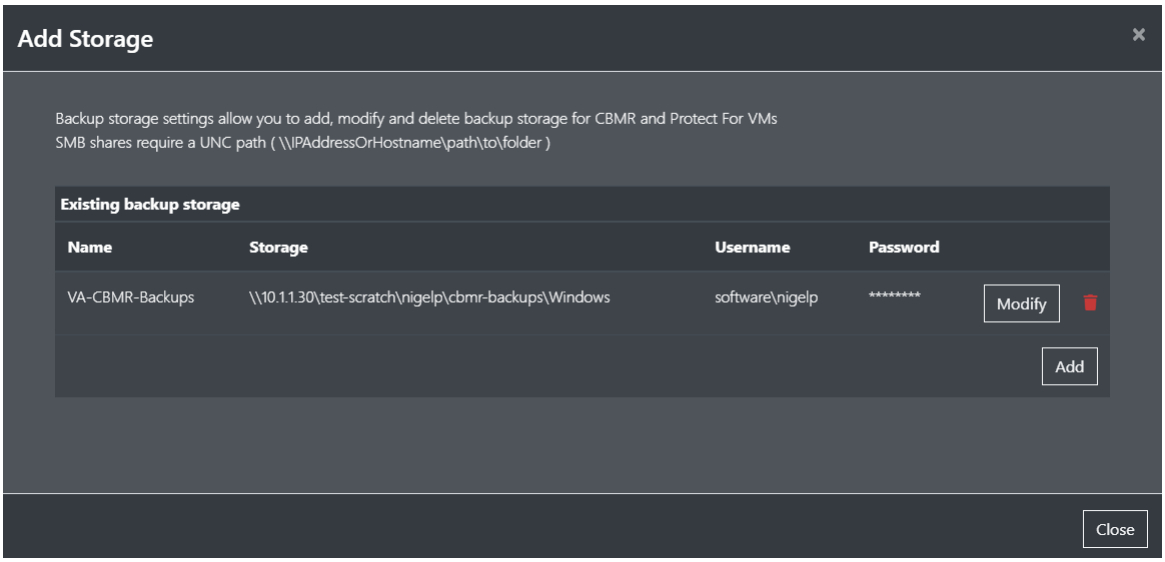
You must now select the **Storage** location for the backup. If you click in the Storage field you will see the options.



You can select an existing Storage Location or create a new one. In this example a new Location is being configured.



Click Save to add this location. One created you can Modify it as required.

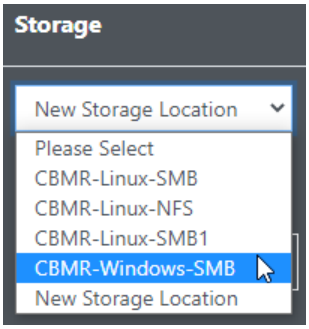


The storage location can be defined in either SMB or NFS format. Use the following format to specify the different formats:

- ***SMB example path:*** \\10.1.1.30\path\to\folder
- ***NFS example path:*** 10.1.1.30:/path/to/folder

> ***Note: only the SMB format is supported for Windows backups.***

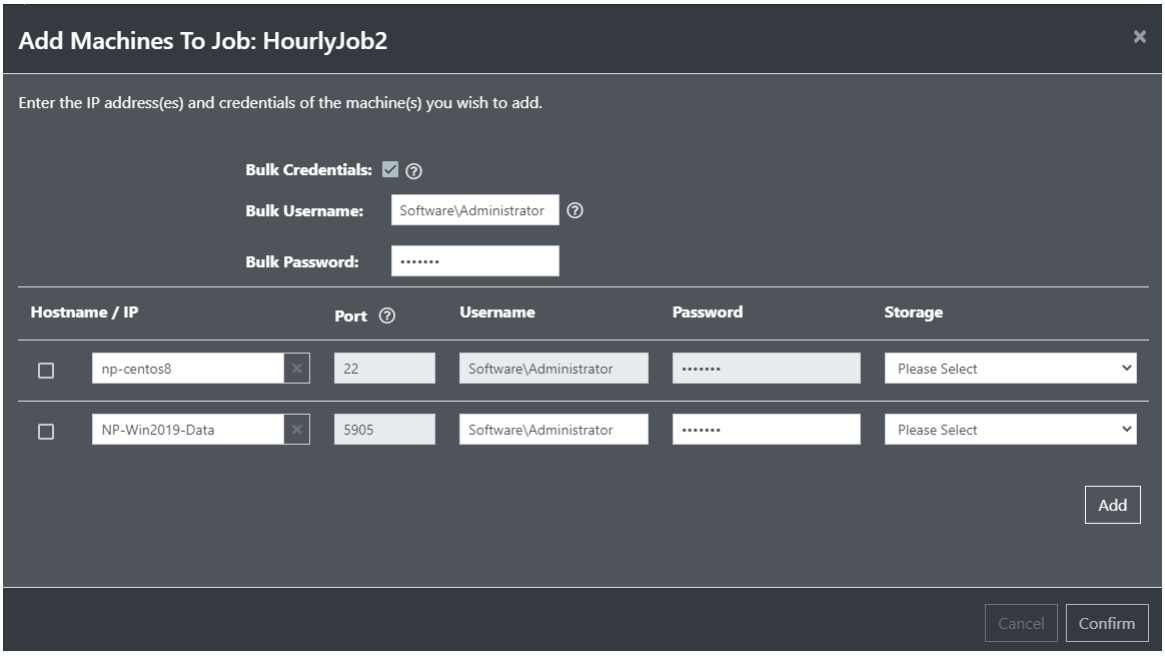
Click Close to continue. You can now select the newly created location from the Storage drop-down:



Click Add to add another machine or Confirm to continue and save the Backup setup for the host.

3.2.1 Bulk Credentials

Where you wish to add multiple machines to a job and all the machines use the same access credentials (for example the Domain Administrator on Windows) you can avoid entering the same credentials separately for every machine with **Bulk Credentials**. To do this run the same menu sequence as before to reach the Add Machines to Job dialogue and click Bulk Credentials:.

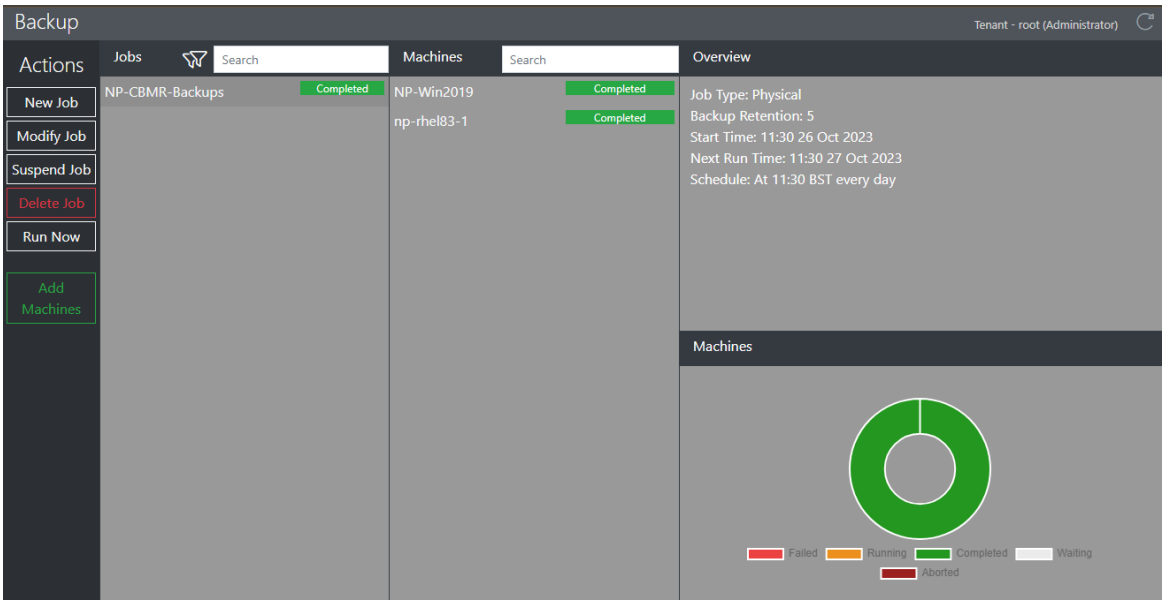


All the selected hosts will then be displayed with the bulk credentials pre-filled.

3.3 Run Backups

With the Backup job created and at least one machine added to the job it will continue to backup indefinitely until either manually booted, the job is suspended or the job or machine is deleted.

It is possible to add multiple machines to the same job. The machines in the job do not need to be the same platform type. Here is an example with 1 Windows machine and 1 Linux machine.



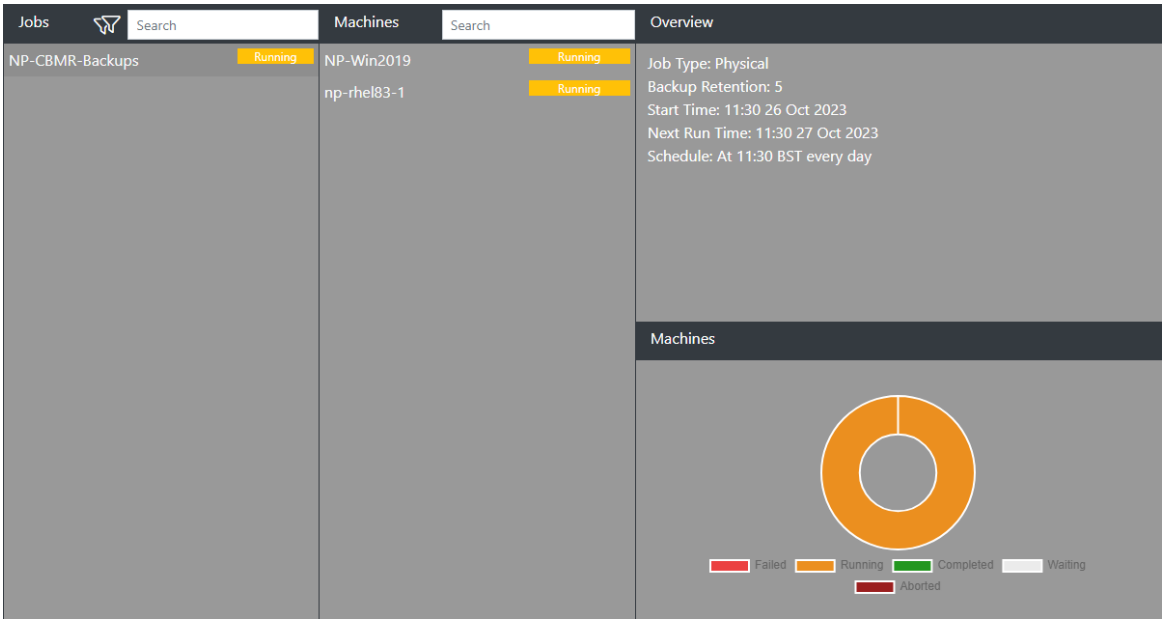
There is no constraint on how many machines can be added to a job. Cristie suggests grouping machines in the same job where they need to be controlled together.

These are the job/machine icons you will see in the Backup section and their meanings.

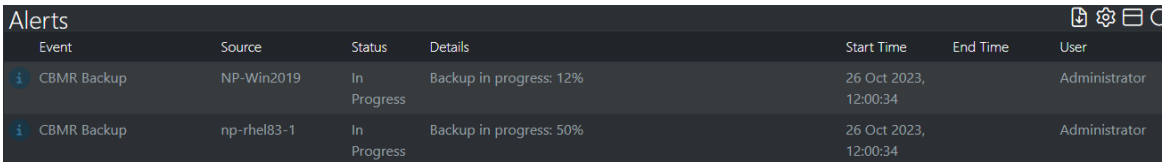
 - job or machine suspended.

3.3.1 Normal Operation

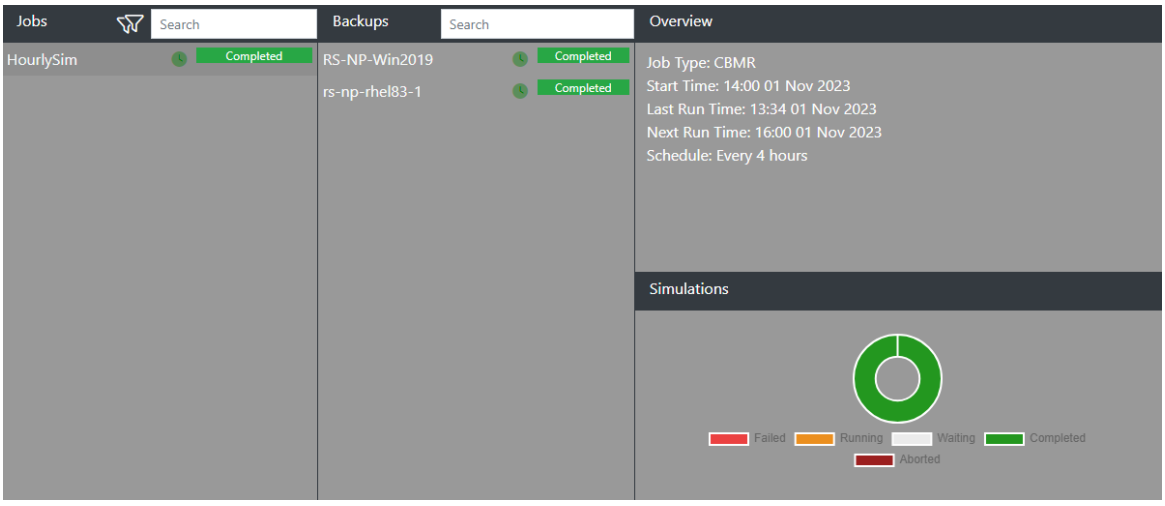
This is an example of backups running.



You will also see the Alerts updated with the job progress:



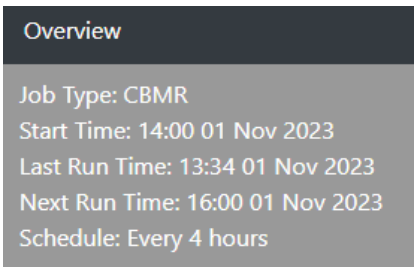
The machines in the job will backup independently of each other and so will progress at different rates and finish at different times. When the backups are complete you will see this:



The **Next Run Time** will now show an updated value on completion for the next run.

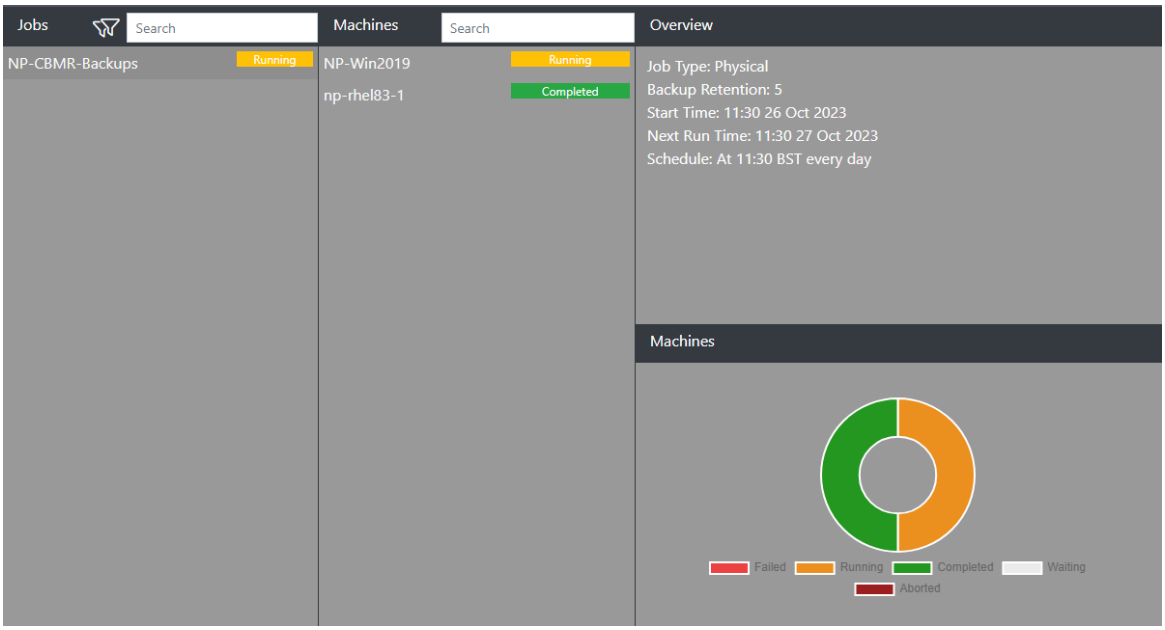
3.3.1.1 Job Overview

Certain job backup statistics will be shown in the **Overview** section for a job. Click on the job of interest (not a machine). You will then see something like this:



The information shown is self-explanatory.

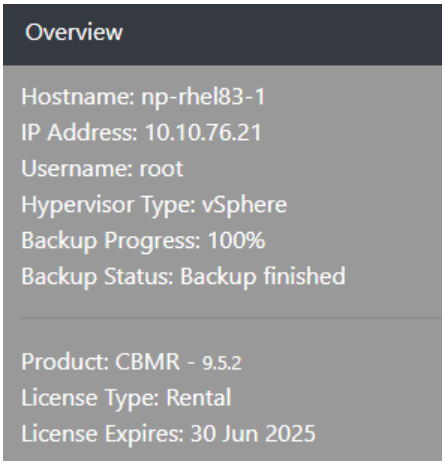
In the machines section for the job, you will be provided with a small pie-chart. This shows the break down of machines in the job and their current state.



In the example shown the chart shows the state for the 2 machines in the job. One is Running and the other is Complete.

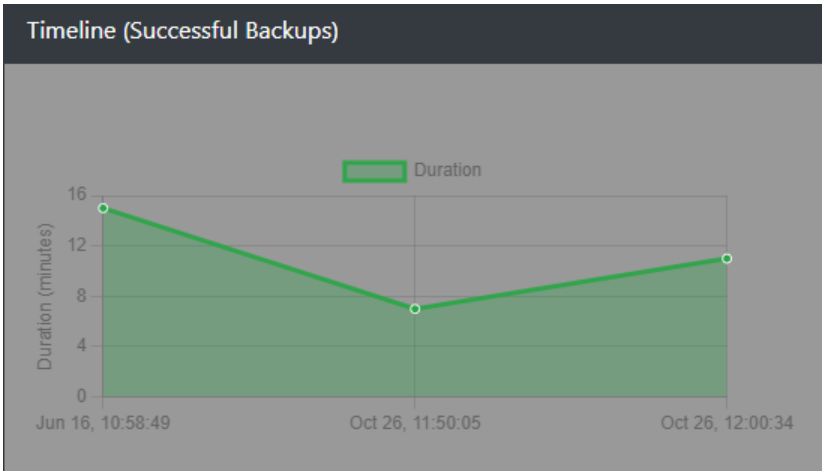
3.3.1.2 Machine Overview

Certain machine backup statistics will be shown in the **Overview** section for a machine in a job. Click on the machine of interest (not the job). You will then see something like this:

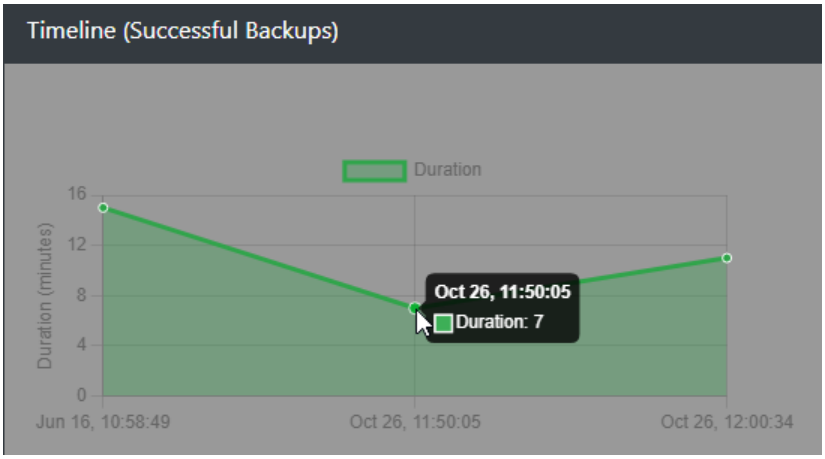


The information shown is self-explanatory.

In the machines section, when the machine has replicated a few times, you will be provided with a small graphical summary display of the duration of each backup (in green). Note that for Linux/ Solaris/AIX the initial run, which is a full clone, will always take longer than subsequent incremental backups.



You can click on any of the Backup data points in the graph for further information on the duration of the backup.

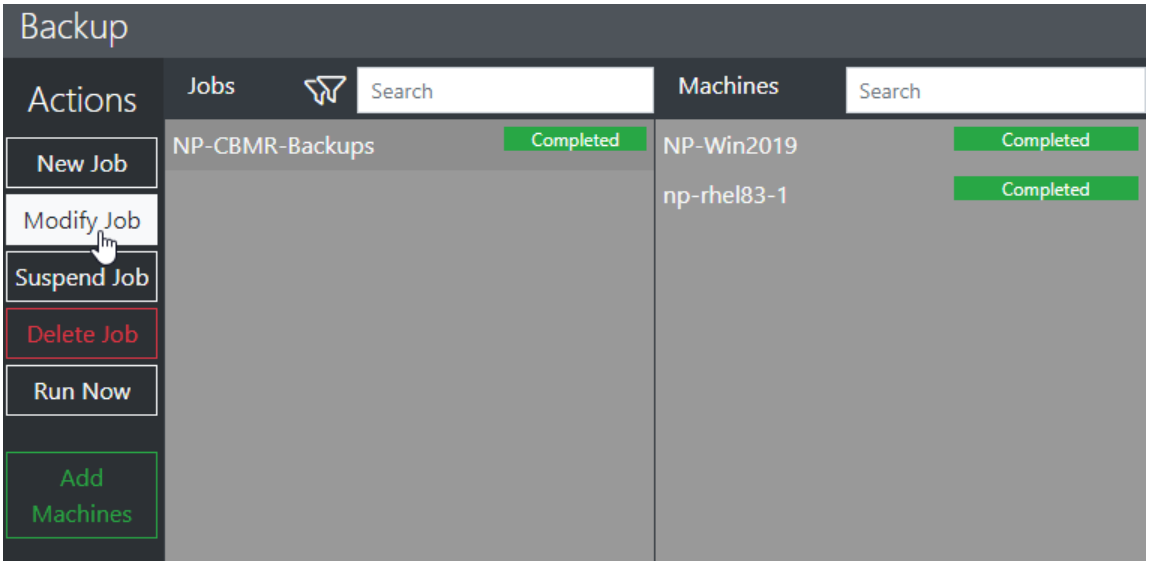


3.3.2 Modify

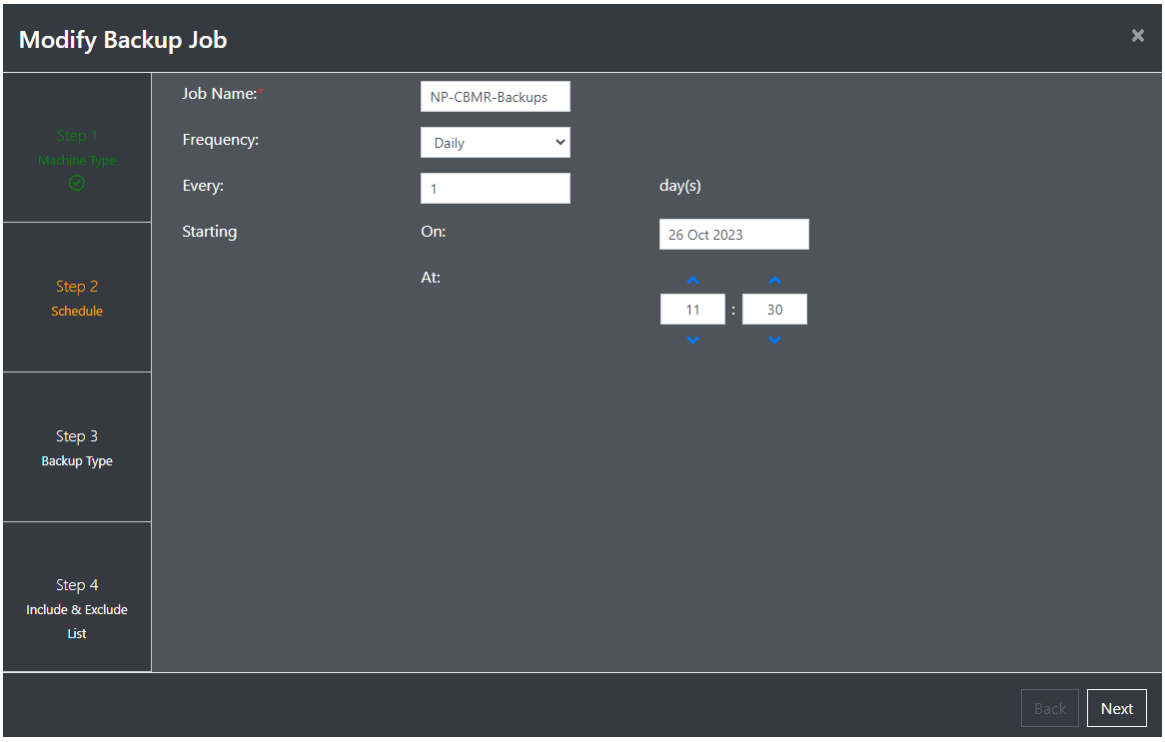
This option allows certain settings for the Backup job or any of it associated machines to be changed.

3.3.2.1 Job Settings

To modify a whole job (note backups for all machines in the job will be affected in this case), click on the job and then the Modify Job button.



You will then see ***Step 1*** of the wizard.



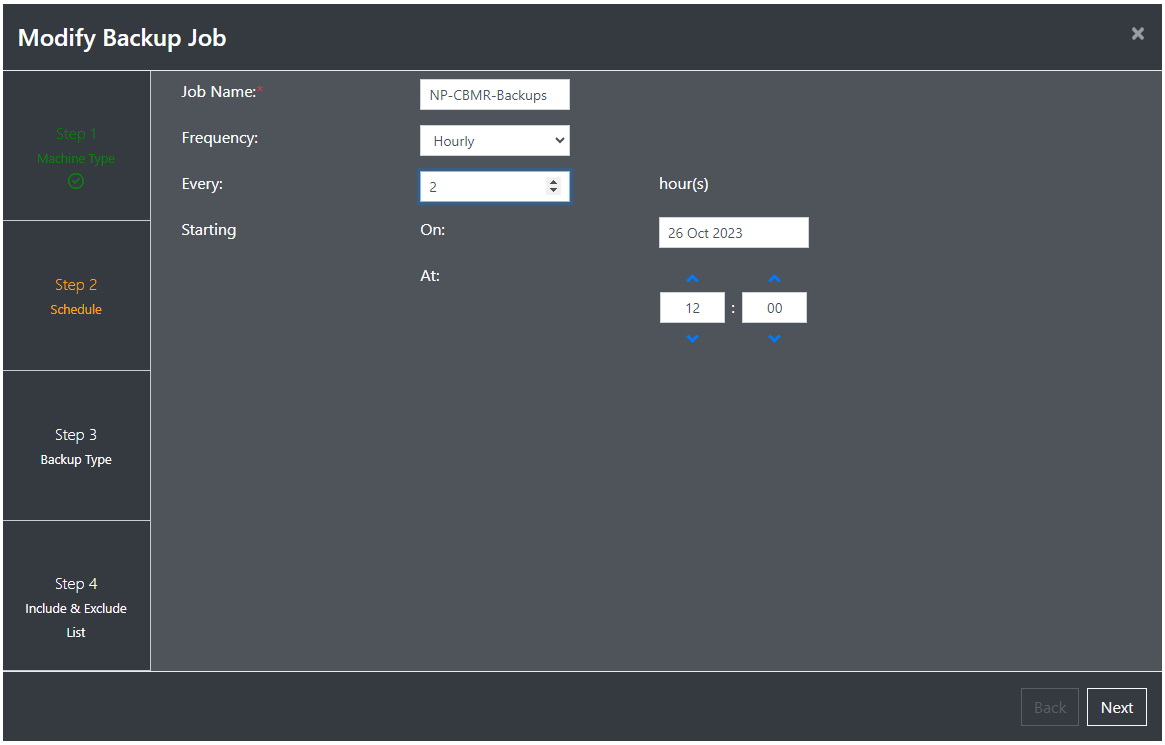
Note: the Back *button can be used at any point in the wizard to return to the previous step.*

Modify the job **Name** if required.

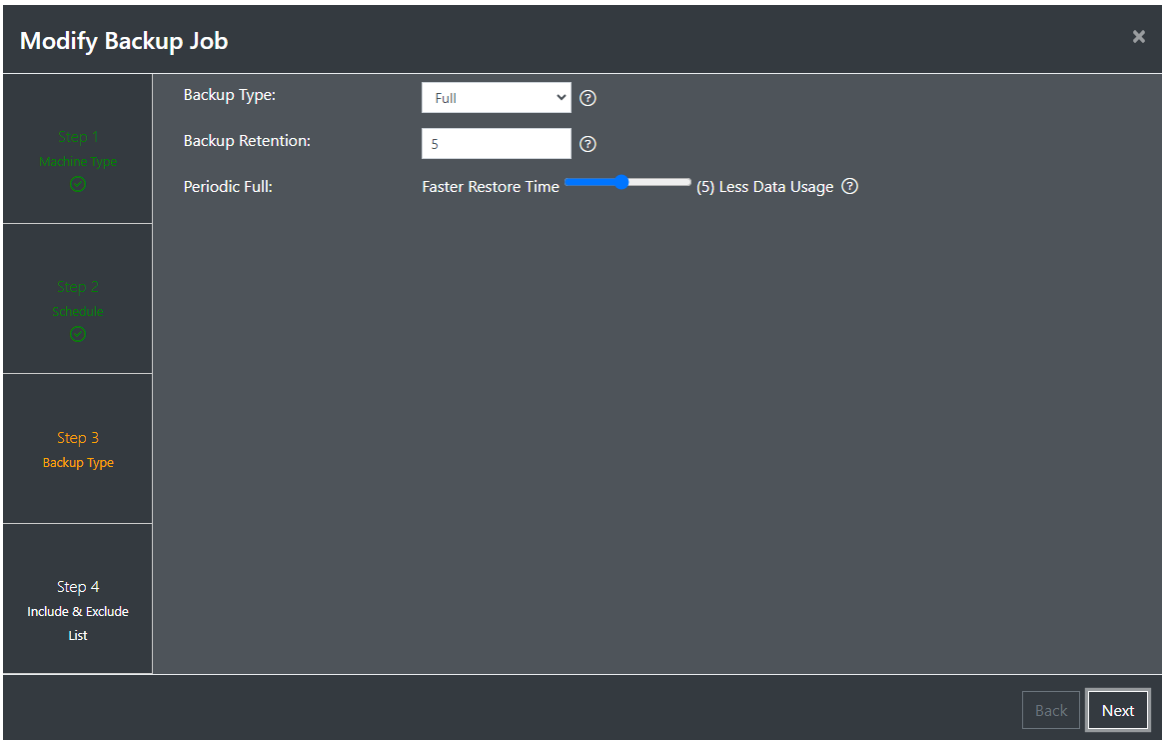
Modify the backup job **Frequency** and the **Interval**. The frequency/interval can be set as summarised in the table below.

Frequency	Description
Once	The backup is run once only at the specified date/time
Hourly	Backups run every user specified number of hours at a selected time
Daily	Backups run every user selected number of days at a selected time
Weekly	Backups run on specific user selected day(s) of the week (Monday/ Tuesday etc.) at a selected time
Monthly	Backups run only on a specified day of the month at a selected time

You may also specify when the next backup run will occur.



Click Next to move on to ***Step 3*** where the **Backup Type** can be selected.



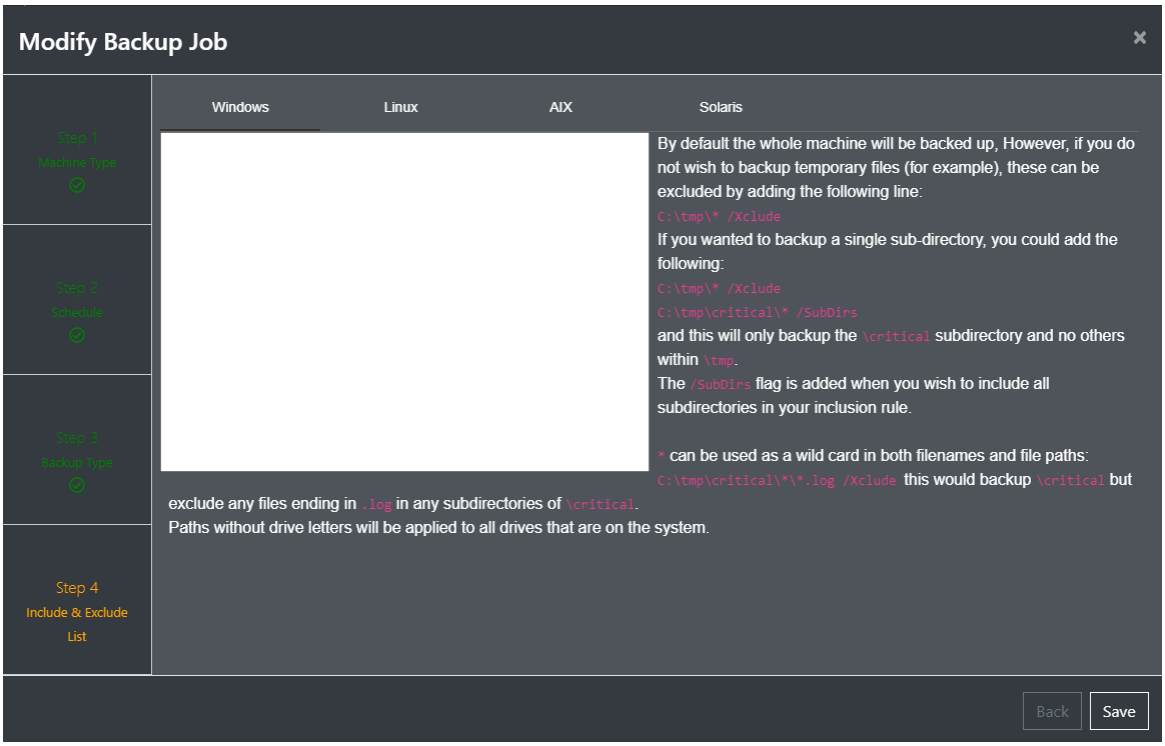
From the **Backup Type** drop-down list select ***Full*** or ***Incremental***. When the backup target is a VTD file on a network share, Full backups are always made regardless of this setting.

Backup Retention specifies the number of historical backups to be retained. The larger the number the more space the backups will occupy, but it will also provide you with more versions to restore in case of machine failure. In particular this is important should you find the latest stored

backup is not the version you require.

Periodic Full allows you to specify how frequently a Full backup is made. Move the adjuster to the left to reduce restore time (more Full backups). Move it to the right to reduce the backup storage required (fewer Full backups).

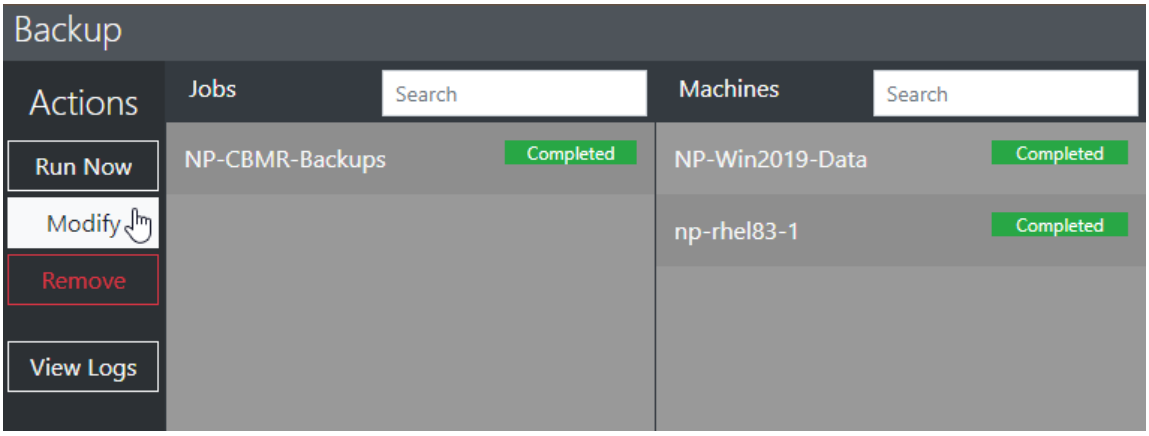
Click Next to move on to ***Step 4*** where files can be excluded from the backup. Note the format of the file exclusions varies according to platform type (Windows, Linux, AIX and Solaris). Please refer to the **Platform** tab for an on-screen discussion of the file/directory format for that platform.



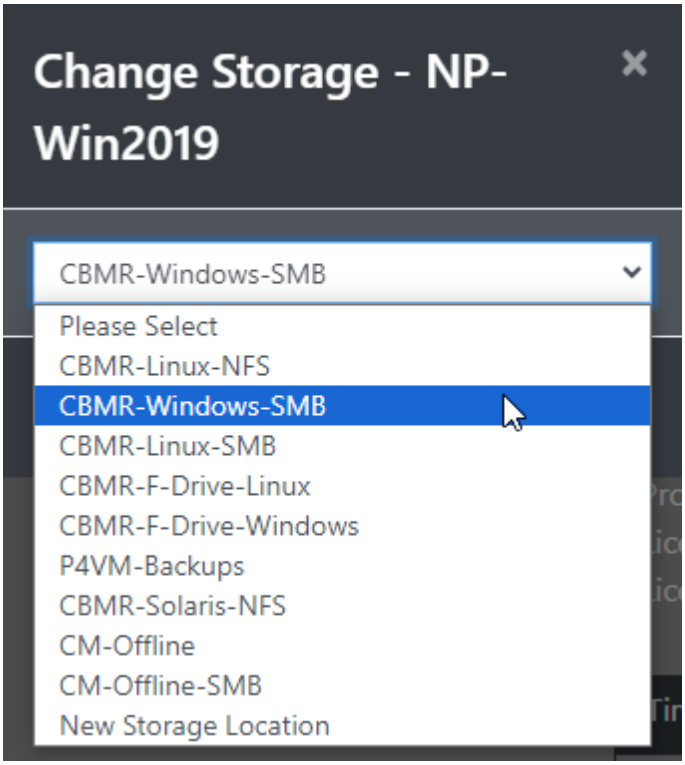
This is the last Step in the wizard sequence. Now click Save to modify the job.

3.3.2.2 Machine Settings

To modify the settings for a single machine in a job click on the machine and then the Change Storage button.



You will be prompted with:

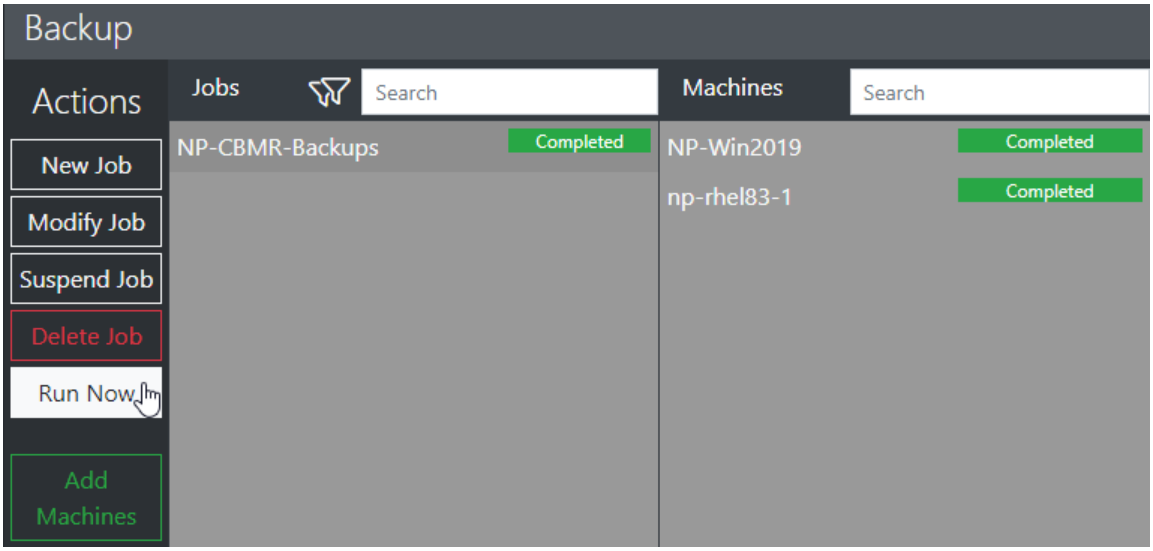


Select a new location and click Confirm. You can also define a new storage location from this dialogue if you wish.

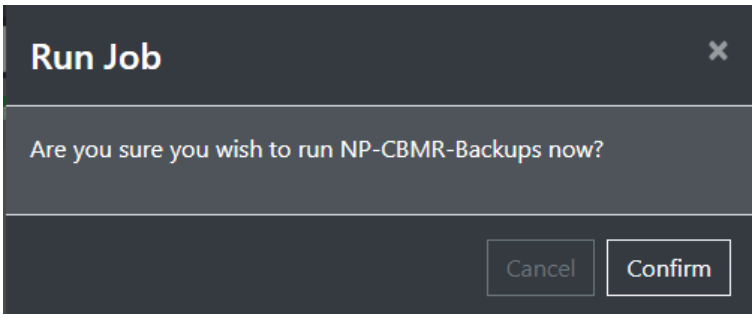
3.3.3 Run Now

Its possible to bypass the scheduled backups of either a job or an individual machine without disturbing the configured scheduling. This feature allows a user to create a new Backup on demand, say after a major update to a host.

To do this highlight either the complete job or the individual machine and click Run Now.

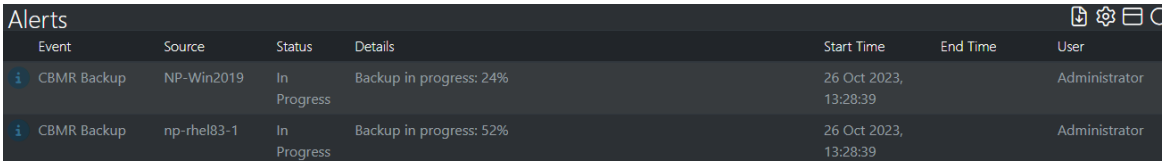


You will then be prompted to confirm the action:



Click Confirm to proceed. The job or machine backup will then be initiated. If a backup is already running the Run Now request will be ignored.

An appropriate **Alert** will also be generated for the running backups:



3.3.4 Suspend/Resume

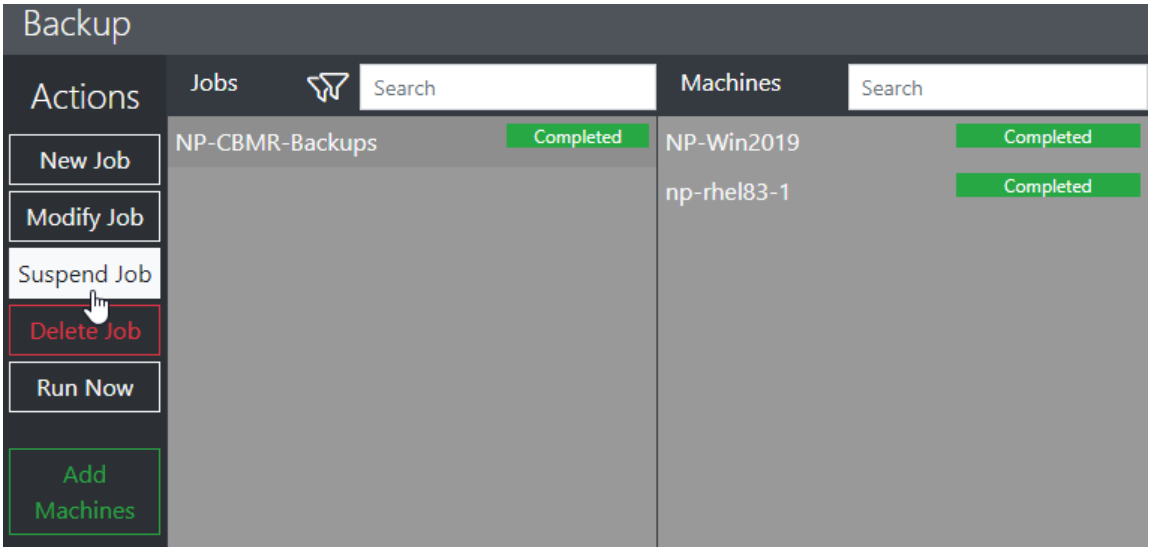
With a backup job running normally you may wish to temporarily suspend the whole job. This may be required for example if the source host is to undergo temporary maintenance.

Backups can then be resumed when the maintenance is finished.

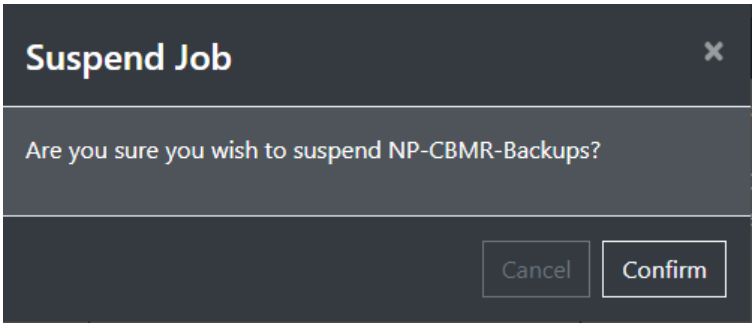
> ***Note: Its not possible to Suspend/Resume individual machines within a backup job.***

Suspend

To suspend a whole job (note backups for all machines in the job will be suspended in this case), click on the job and then the Suspend Job button.



You will then be prompted to confirm the suspension.

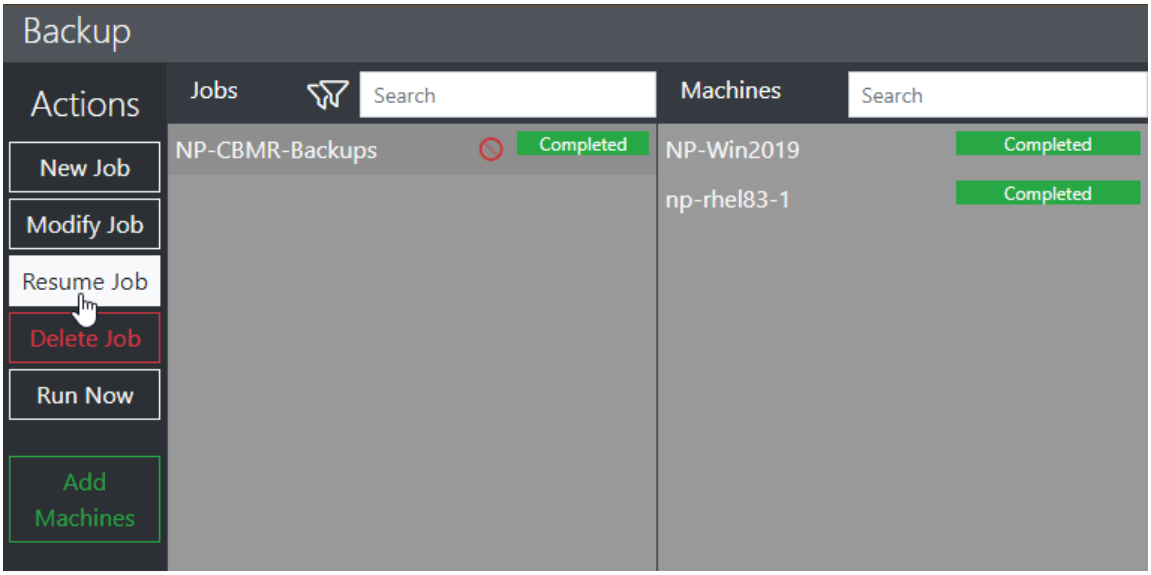


Click Confirm to proceed. The job will then be disabled and this indication will be shown on the job.

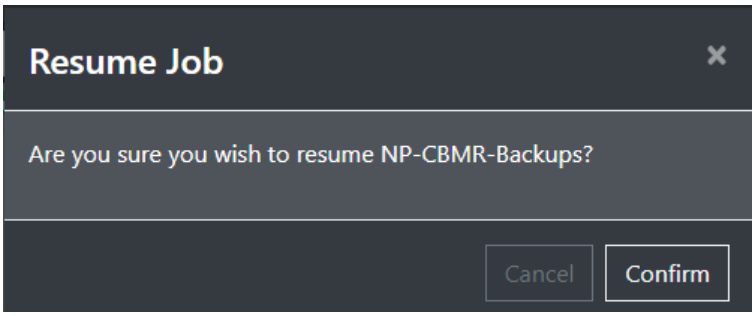
> ***Note: Attempting to Suspend a running job will only take effect when the job completes.***

Resume

To resume a suspended job click on the job and then click Resume.

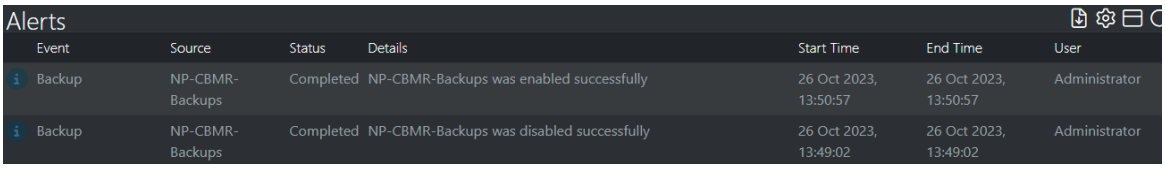


You will then be prompted to confirm the job resumption.



Click Confirm to proceed. The job will then be resumed and all machines will begin backing up at the next scheduled date/time. The indication on the job will be removed.

You will also see Alerts associated with the job Suspend/Resume activity.

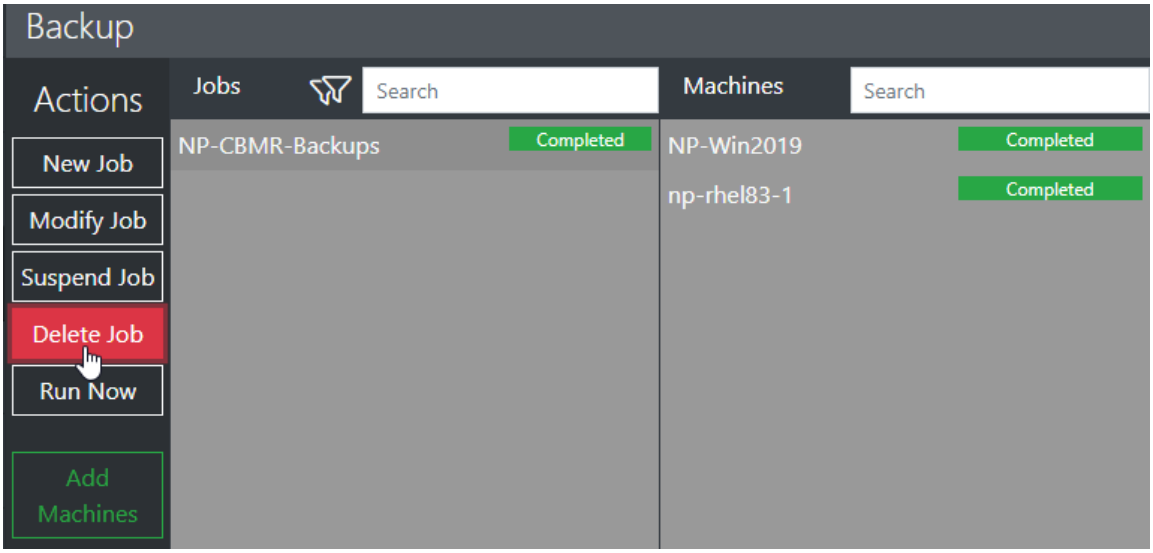


3.3.5 Delete

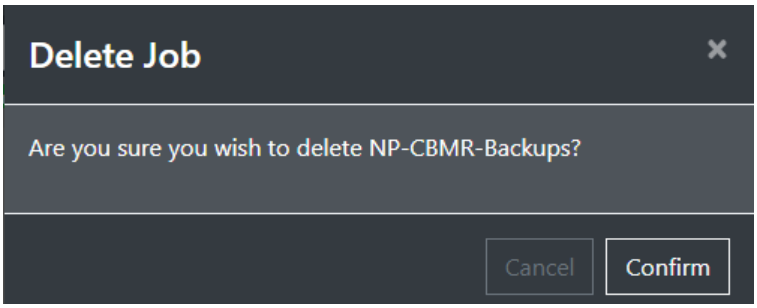
When you no longer need to run Backups for either a complete job or an individual machine it can be removed from the Cristie VA.

3.3.5.1 Whole Job

To delete a whole job (note all machines in the job will be be deleted), click on the job and then the Delete Job button.



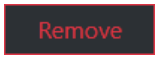
You will then be prompted to confirm the deletion.



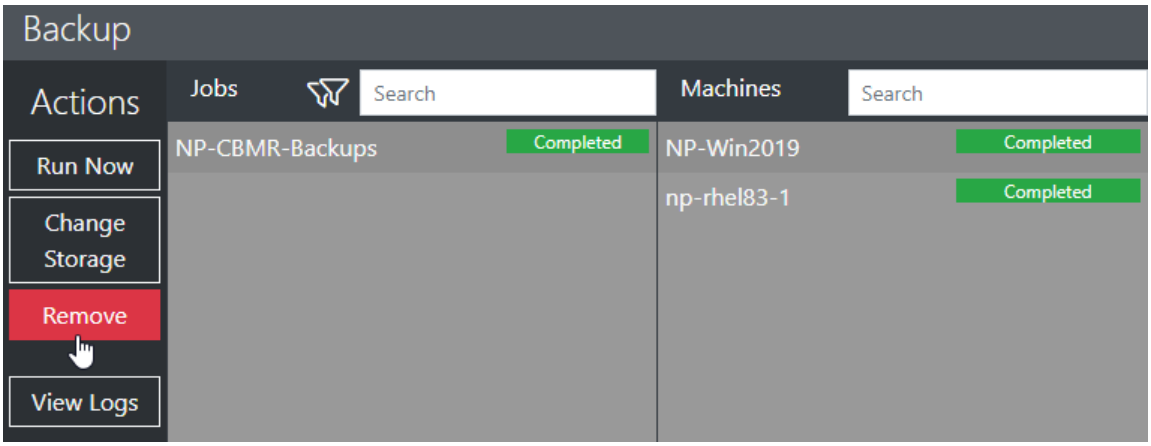
Click 

to proceed. The job and its associated machines will then be deleted.

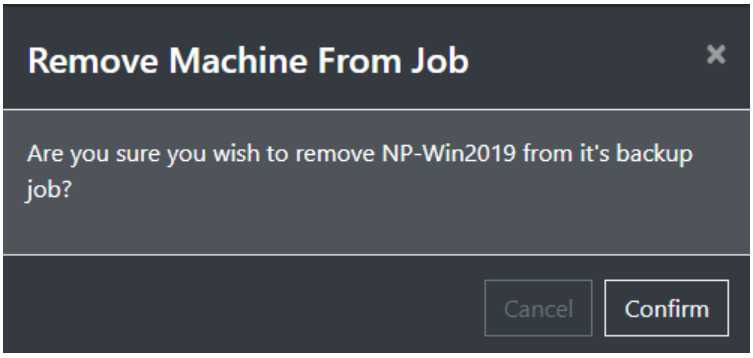
3.3.5.2 Individual Machine

To delete a single machine from a job click on the machine and then the 

button.



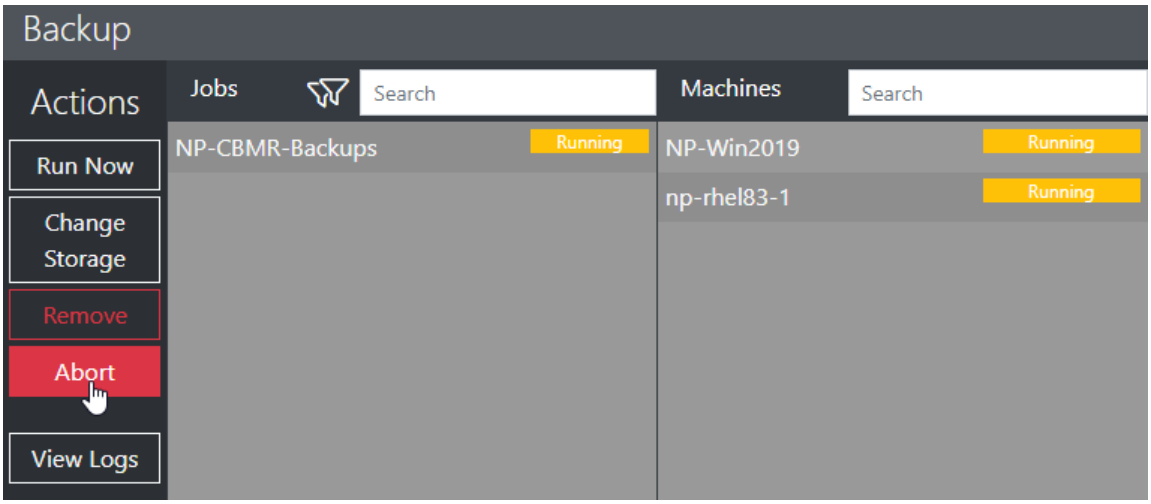
You will then be prompted to confirm the deletion.



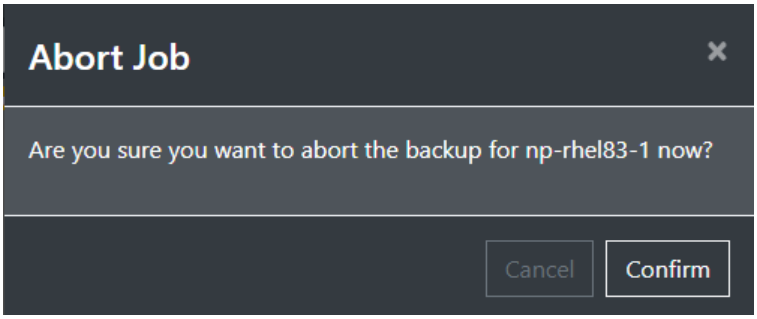
Click Confirm to proceed. The machine will then be removed from the job. If other machines are associated with the job they will continue to backup normally.

3.3.6 Abort

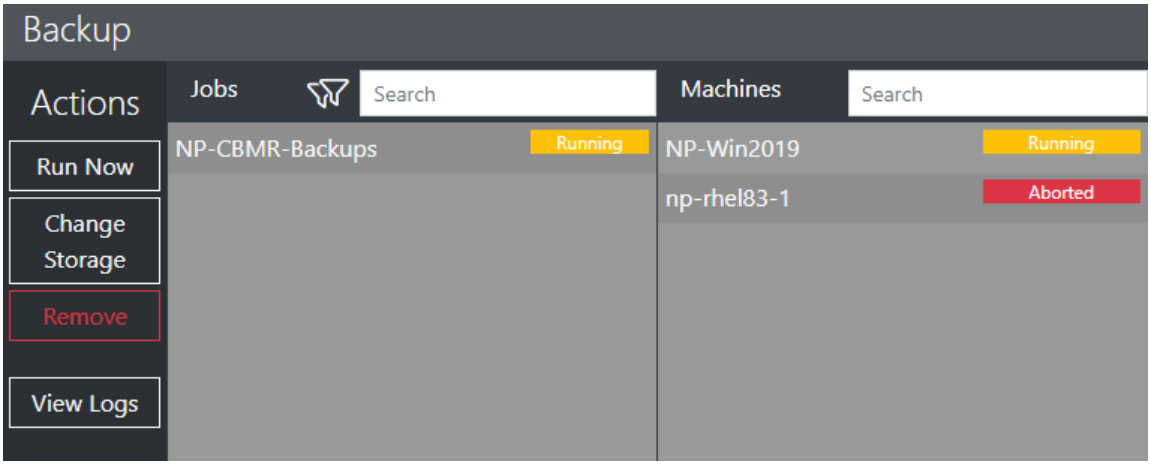
If you wish to cancel a running backup machine highlight it and select Abort



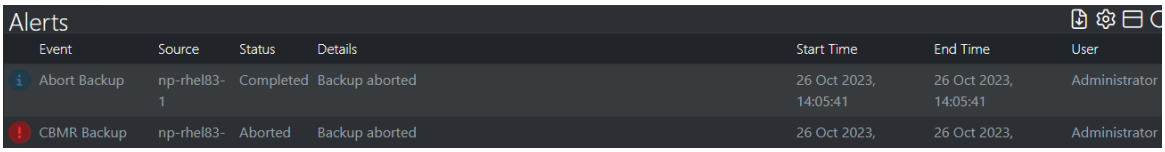
You will then be prompted to confirm the abort.



Click Confirm to proceed. The machine backup will then be cancelled. Note it may take a few minutes for the backup to come to a halt.



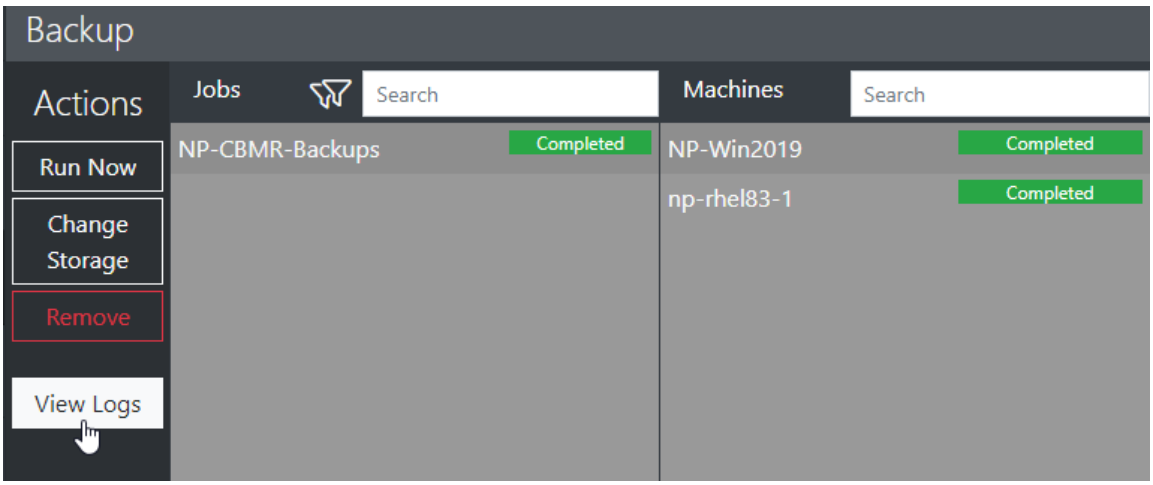
You will also see Alerts associated with the job Abort activity.



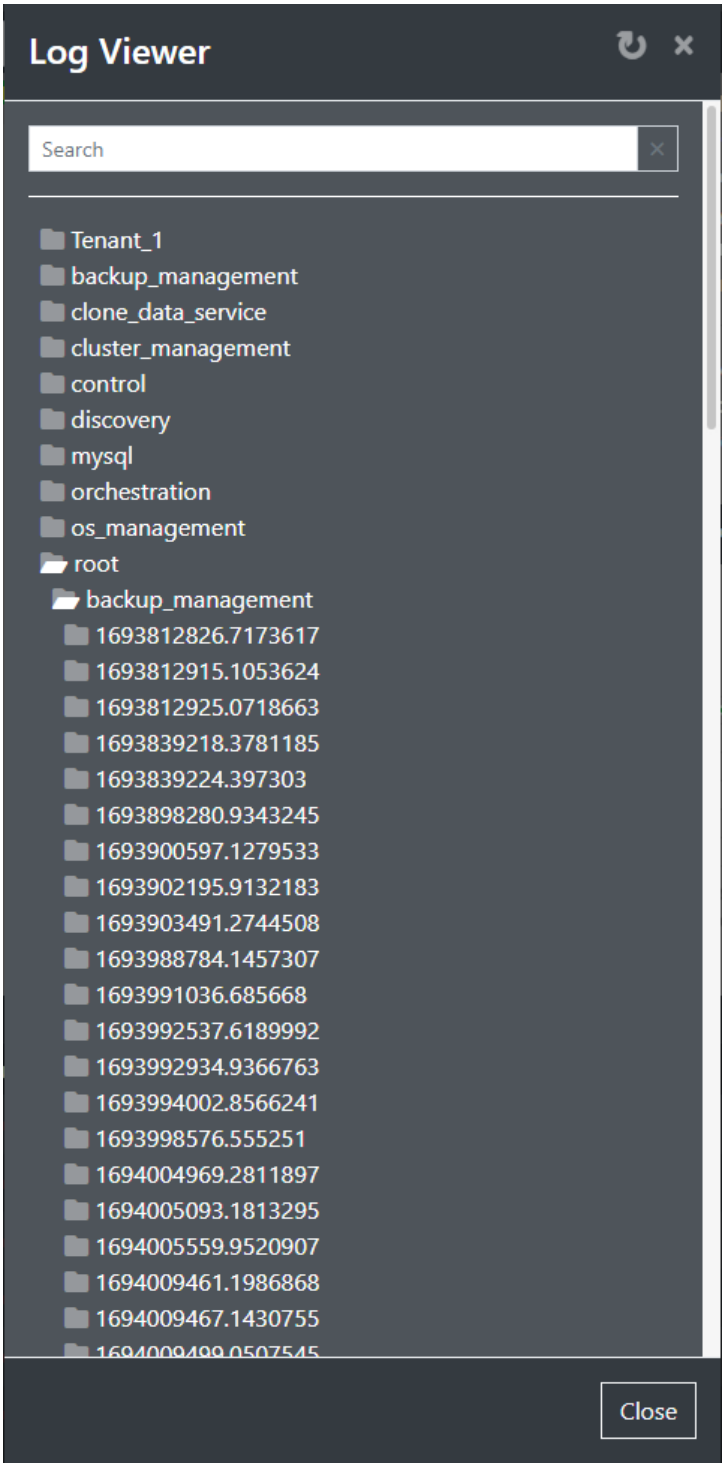
If other machines are associated with the job they will continue to backup normally.

3.4 View Logs

If you want to view backup logs for a machine click the job first and then the desired machine. Then click View Logs.



The Log Viewer will then be displayed with the Log directory open at the correct point for the job/ machine:



To view the log file for a particular backup click on file for the desired host:

At this point you can optionally Download the Log file to your browser's default download location or click Close to remove the Log Viewer from the screen.

4 Recovery

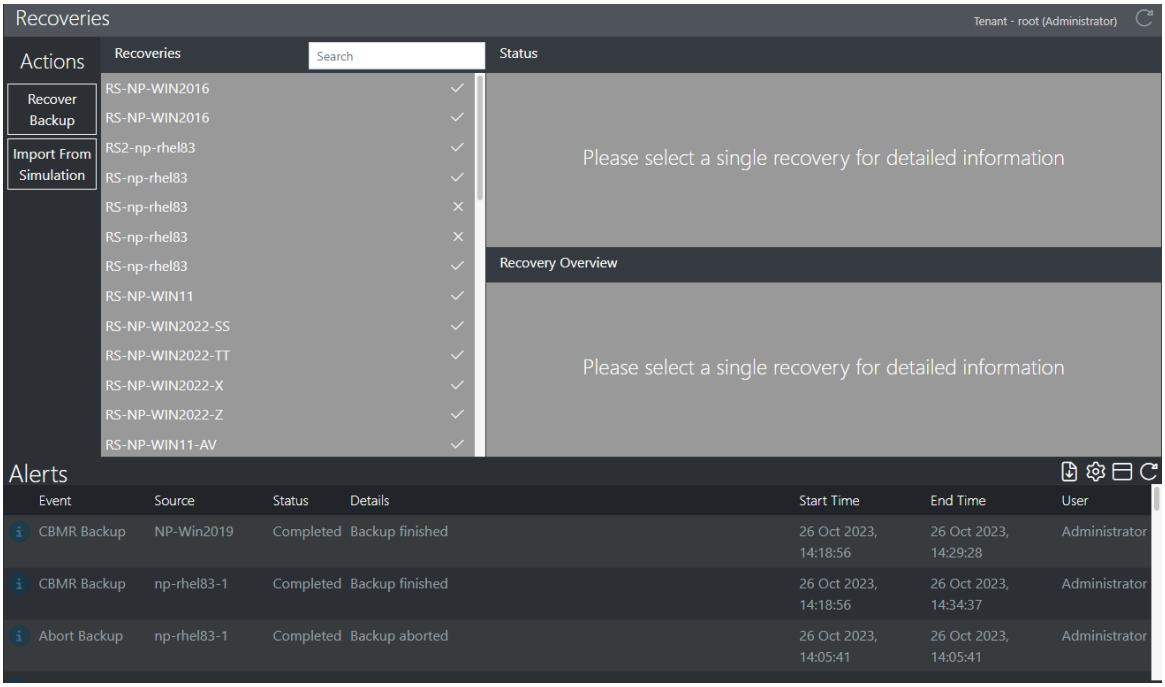
The **Backup Recovery** features of the Cristie VA are divided into **Recover** and **Simulation** modes.

Recover allows a fast single-shot recovery of an existing backup and this option should be used for a quick validity check of a backup. There is no scheduling option available in this mode. ***Simulation*** allows a recovery job to be created and regular scheduled test recoveries made for one or more selected machines.

The Cristie VA only supports recoveries for Windows/Linux machines. Solaris/AIX recovery monitoring is supported by manually hooking into the VA via the DR environment.

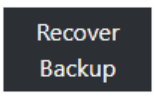
4.1 Recover

To start a test recovery of an existing backup using **Recover** firstly open the Cristie VA Dashboard, and then navigate to **Recover**  . You will then see this dialogue.

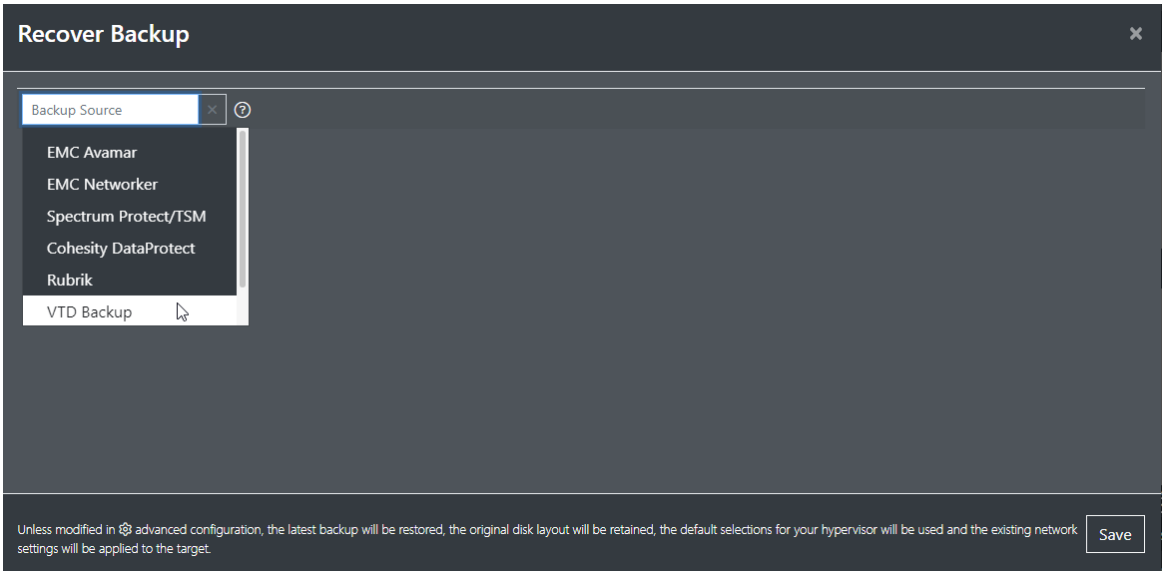


There are 2 main ways to start a recovery - ***Recover Backup*** and ***Import From Simulation***.

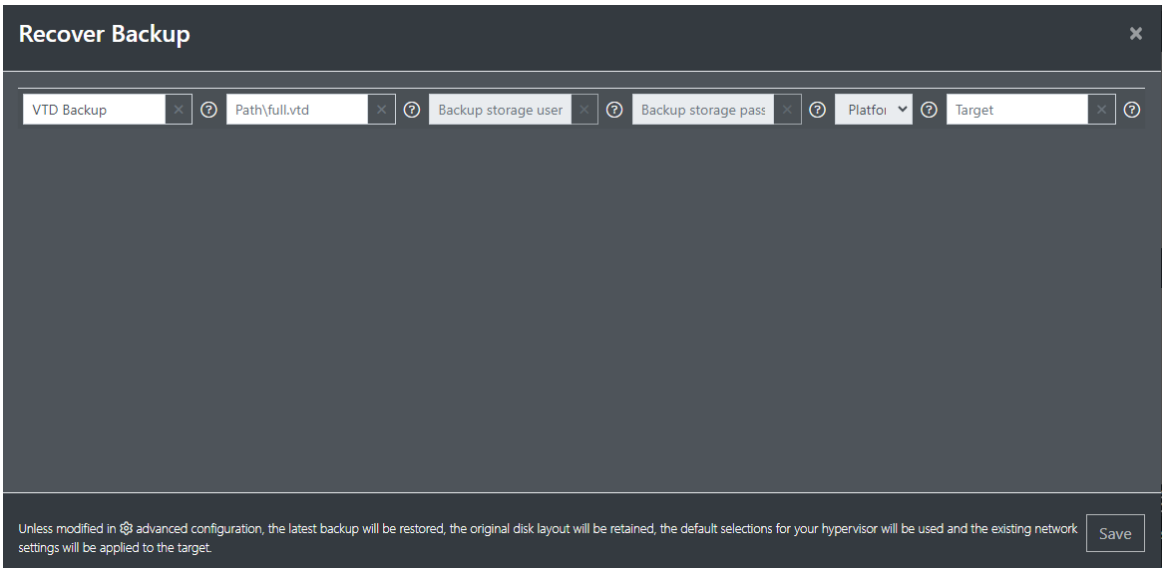
Recover Backup allows a previously created CBMR backup to be restored. Note this option can also be used for recovering Protect for VMs backups. This option is covered in the ***Protect for VMs User Guide***.

So click 

and select **VTD Backup Location** from the Backup Source drop-down list to begin the process.



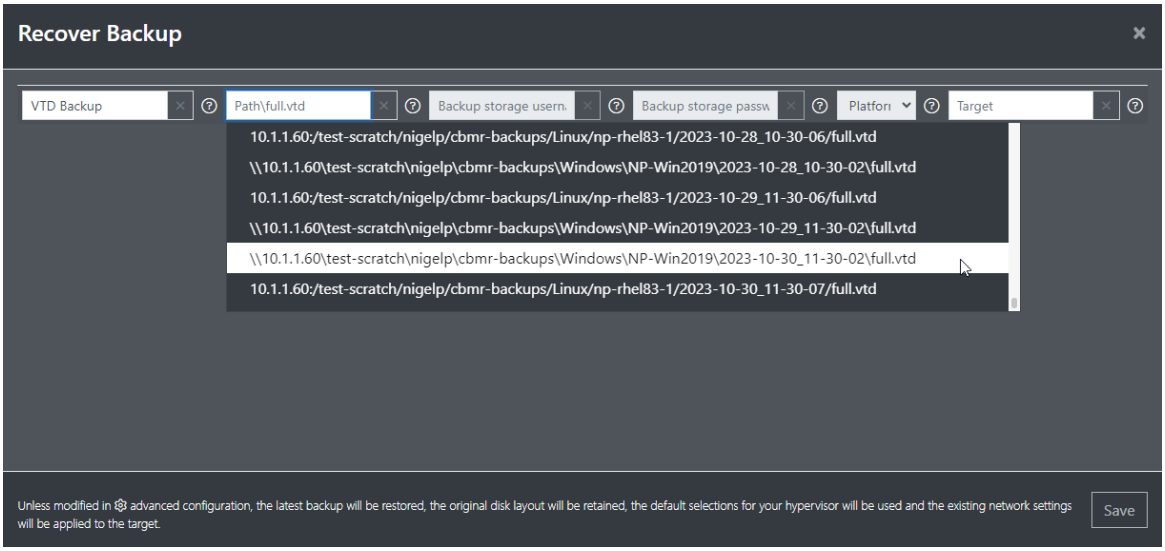
You will then be presented with a dialogue that allows the recovery details to be configured.



The fields to be filled in are:

Path\full.vtd

The full path to the CBMR VTD backup file. Clicking this field displays a drop-down list with several further choices.



- **Specify manually** - A manually entered path to the backup CBMR VTD of interest.
- **Choose from backup job** - Select a backup direct from a current backup job.
- **A list of historical VTD backups made by the Cristie VA** - Select one that corresponds to the system and date/time you want to restore.

Backup Storage Username/Password

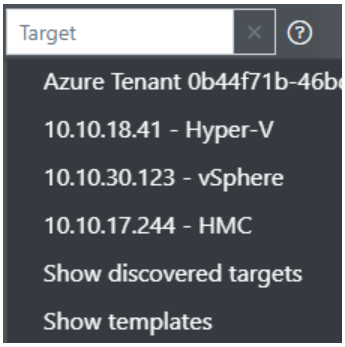
Network share access credentials for the VTD path above. These will get filled automatically if the path is recognised by the Cristie VA. Note this is required for SMB shares only.

Platform

Windows/Linux/AIX

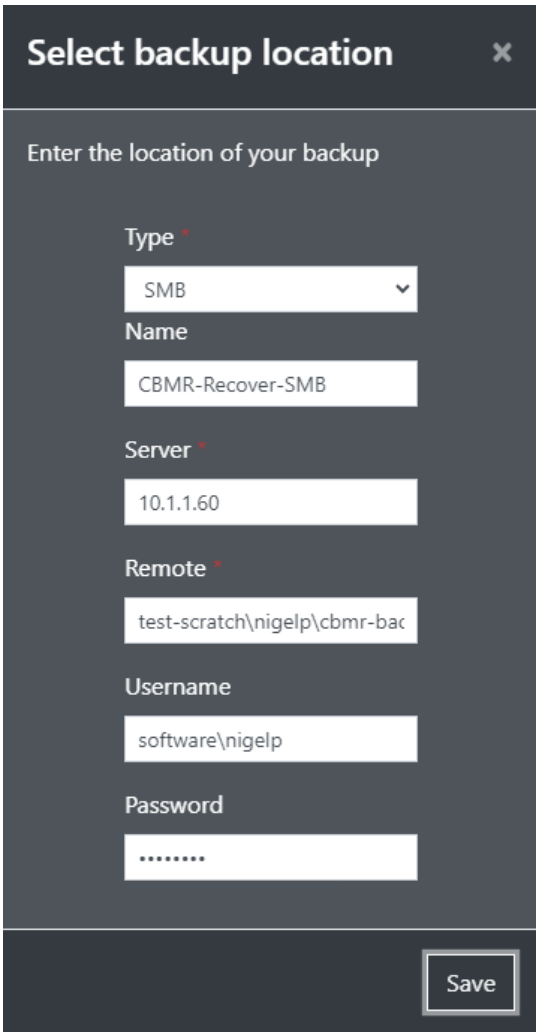
Target

The backup will be recovered to a new VM on the specified Hypervisor. The hypervisor must have been previously configured in the VA. Alternatively the target could be a physical target manually booted into the appropriate recovery environment. Select **Show discovered targets** or **Show templates** for the latter option.



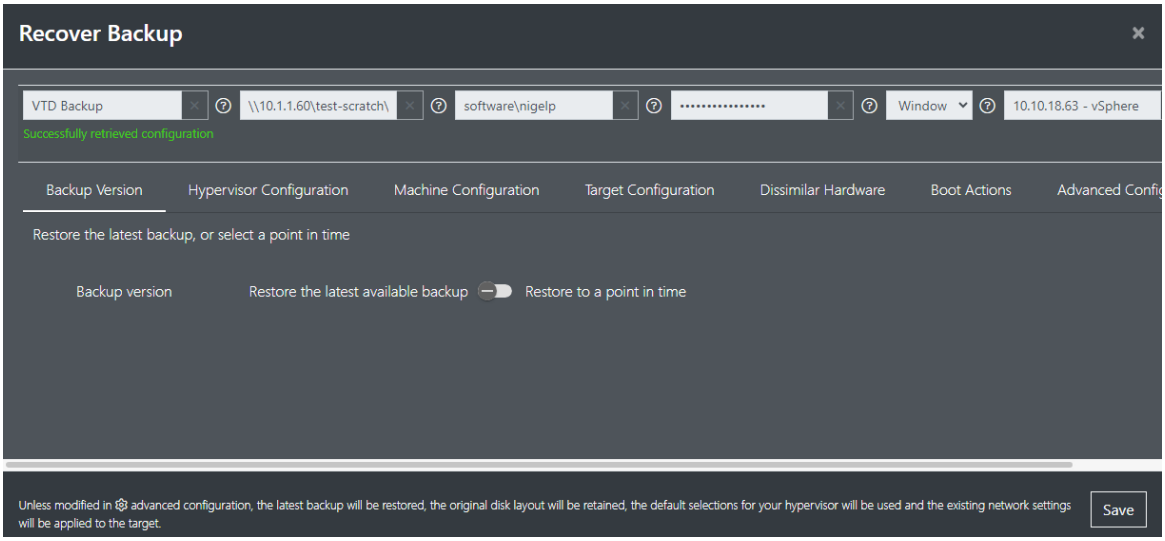
4.1.1 Specify Manually

Select this option to choose recovery from any CBMR VTD Backup located on a network share. First specify the location of where your VTD backup resides. Configure either an NFS or SMB network share.

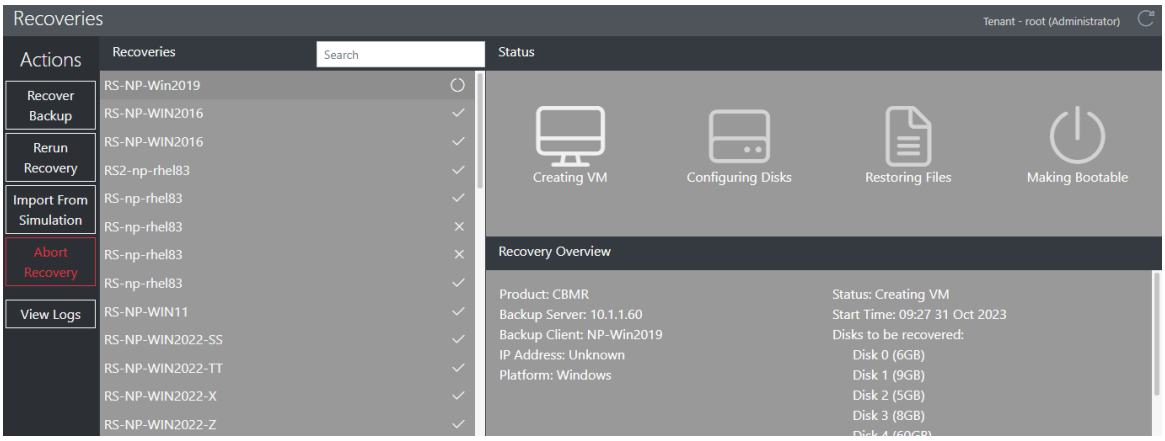


Note the VTD does not have to have been created by a Cristie VA CBMR backup job.

Click Save to continue. Unless modified in advanced configuration the latest backup will be restored, the original disk layout will be retained, the default selections for your hypervisor will be used and the existing network settings will be applied to the target. If you wish to change the recovery configuration click ⚙ to see:



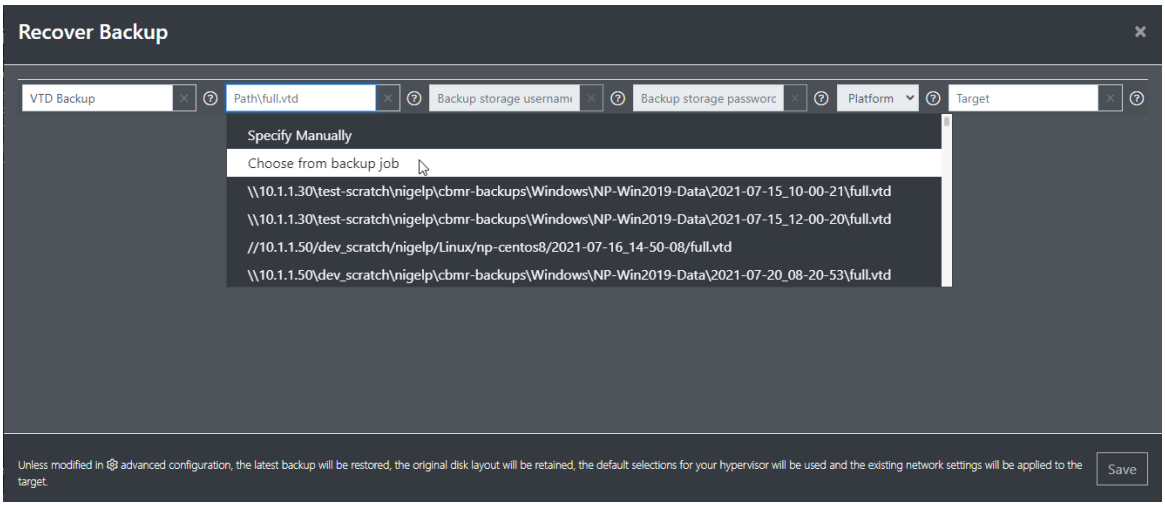
Click **Save** to begin the recovery.

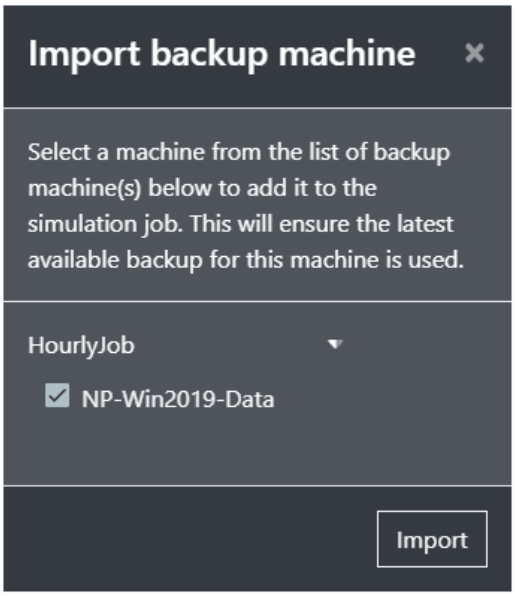


Refer to the section entitled Recover Sequence for the next steps which are common.

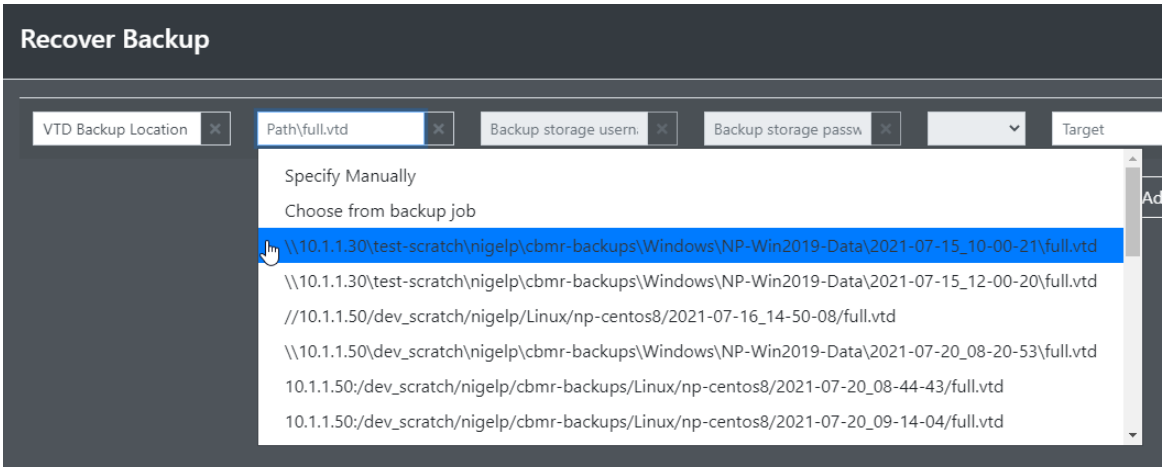
4.1.2 Choose From Backup Job

After selecting VTD Backup, select this option to choose recovery from an existing Cristie VA CBMR backup job.



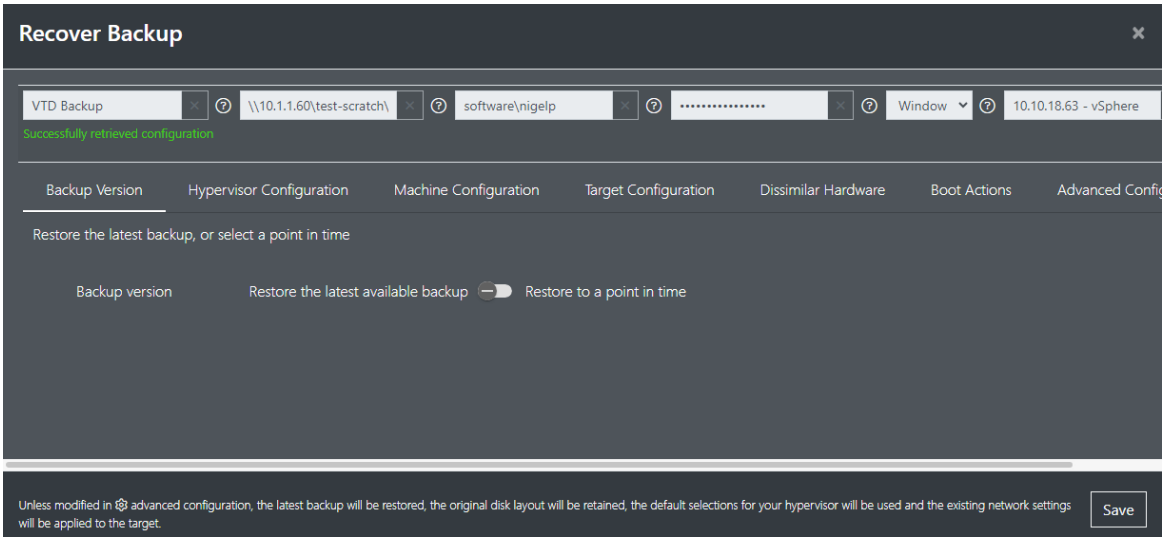


Click the job containing the host backup you wish to recover and click Import. If you then re-display the **Path\full.vtd** field you will get a list of all backups for that job:

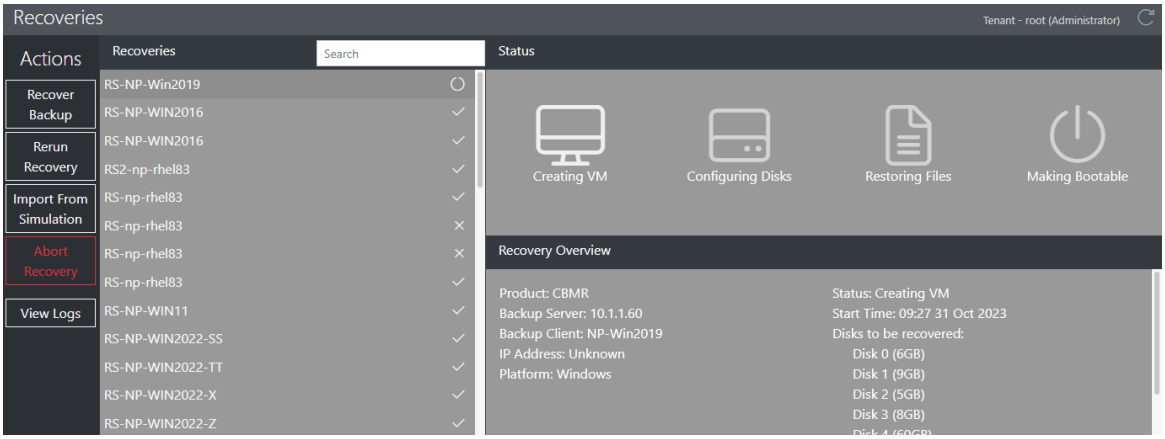


Click the required ***Host*** and ***Date/Time*** from the list. You will then need to set the share credentials if not pre-set, the Platform and the Target.

Unless modified in advanced configuration the latest backup will be restored, the original disk layout will be retained, the default selections for your hypervisor will be used and the existing network settings will be applied to the target. If you wish to change the recovery configuration click  to see:



Click  to begin the recovery.

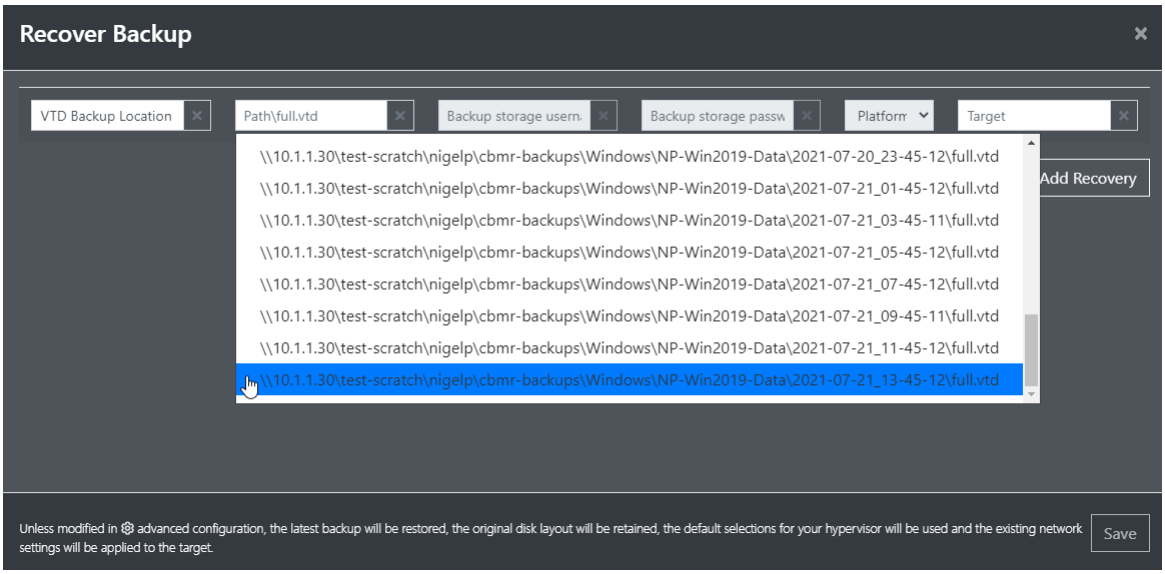


Refer to the section entitled Recover Sequence for the next steps which are common.

4.1.3 List of Historical VA Backups

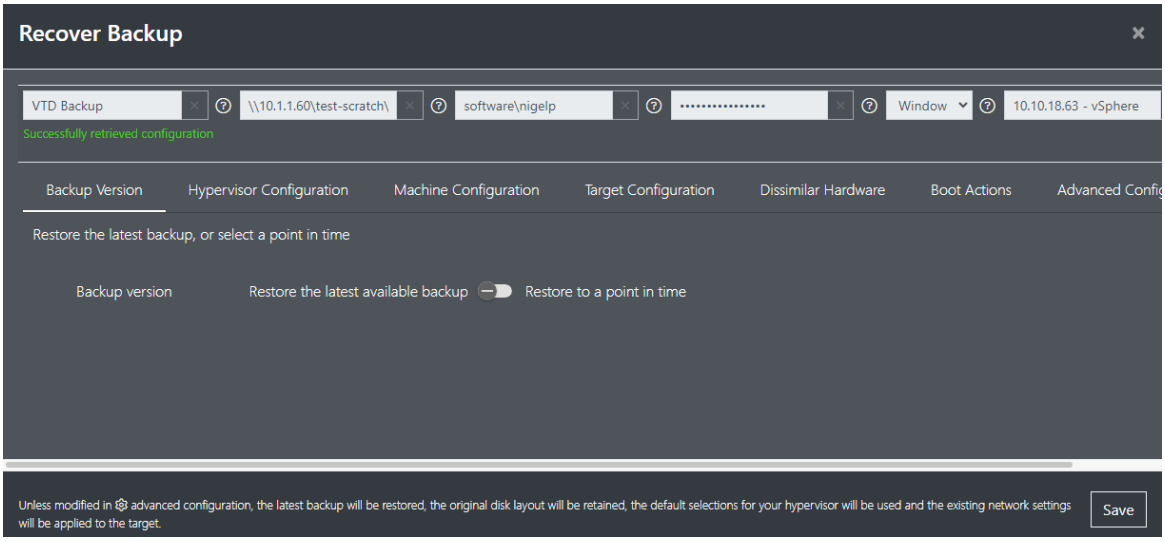
Select this option to choose recovery from any historical Cristie VA CBMR backup job.

If you then re-display the **Path\full.vtd** field you will get a list of all backups:

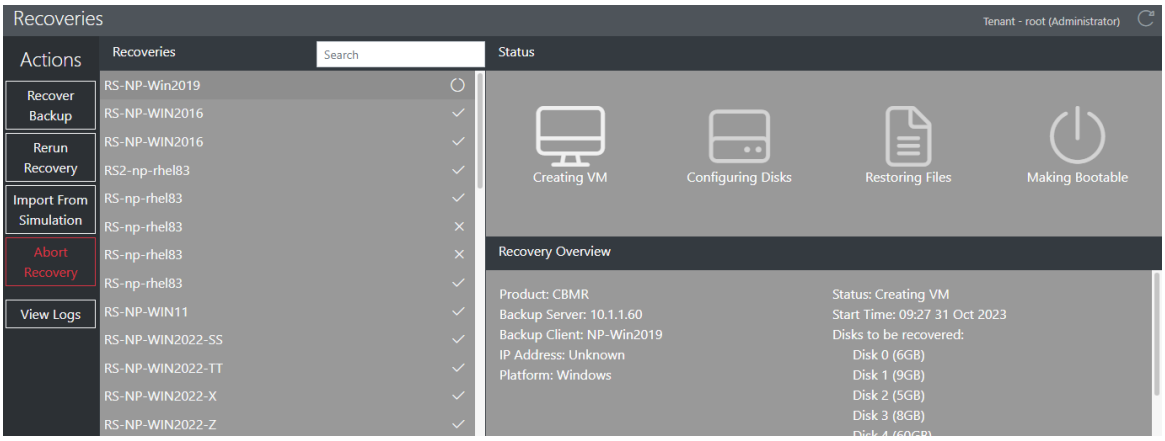


Click the required ***Host*** and ***Date/Time*** from the list. You will then need to set the share credentials if not pre-set, the Platform and the Target.

Unless modified in advanced configuration the latest backup will be restored, the original disk layout will be retained, the default selections for your hypervisor will be used and the existing network settings will be applied to the target. If you wish to change the recovery configuration click  to see:



Click **Save** to begin the recovery.



Refer to the section entitled Recover Sequence for the next steps which are common.

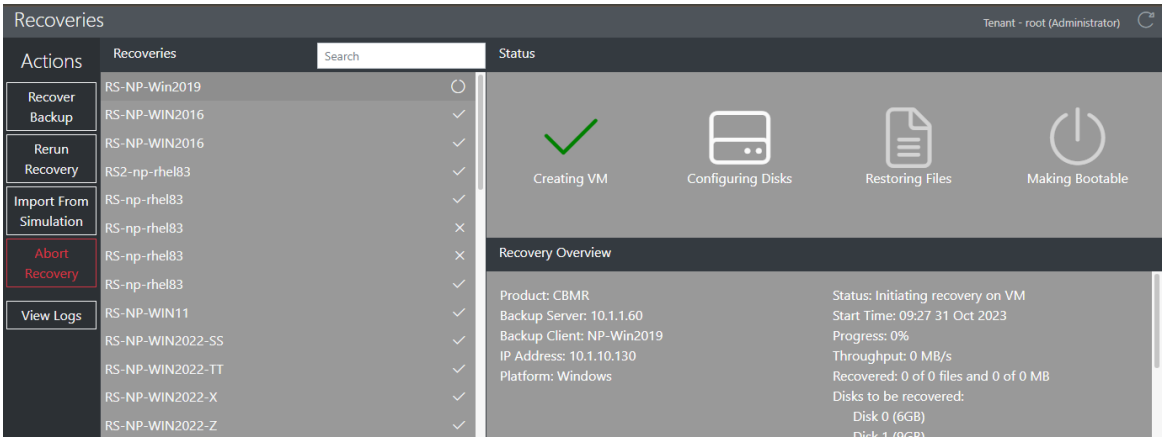
4.1.4 Import from Simulation

This option allows a **Recover** operation to be quickly created directly from an existing **Simulation** job. Click **Import From Simulation** to start the import process.

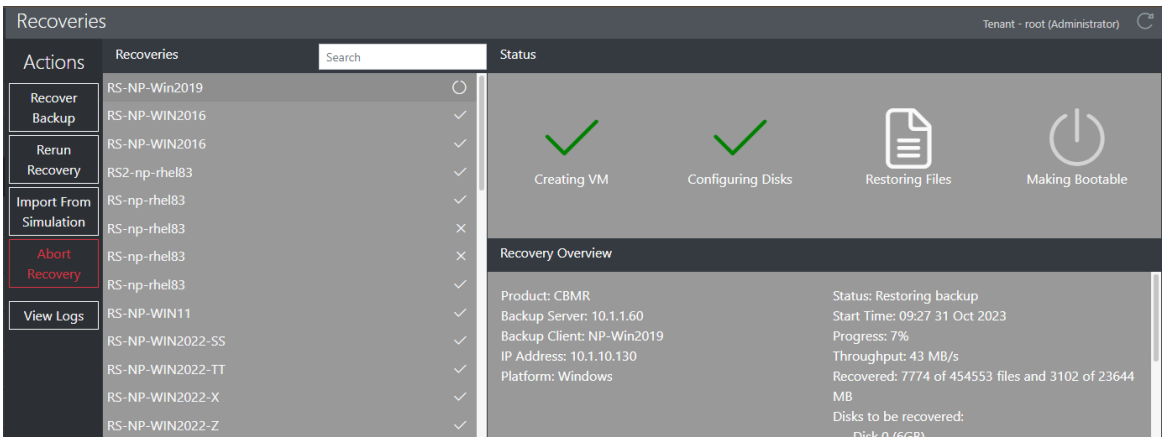
4.1.5 Recover Sequence

When the Recovery starts it will go through various stages which are reported in the Status section of the main Recover dialogue. Corresponding Alerts for each stage will also be generated. The ***completion*** of a stage is signified with a ✓.

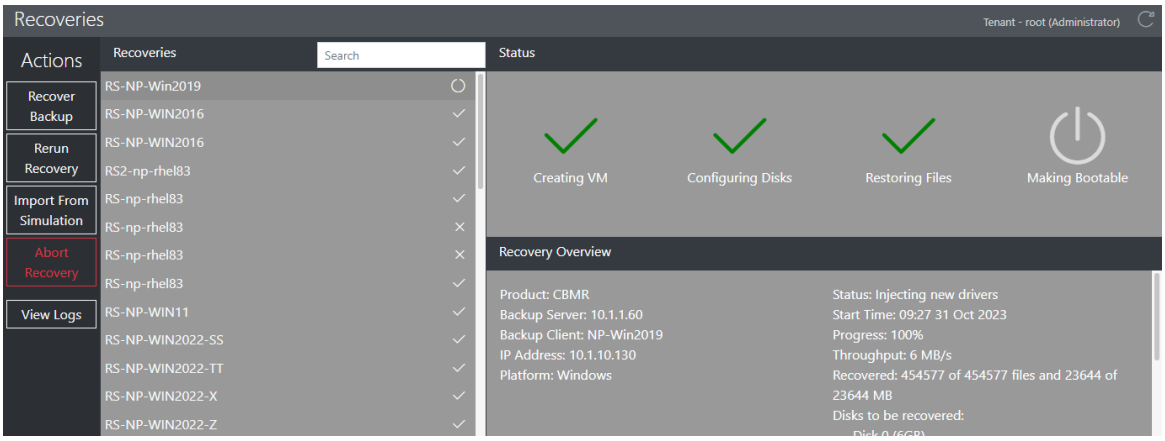
Creating VM



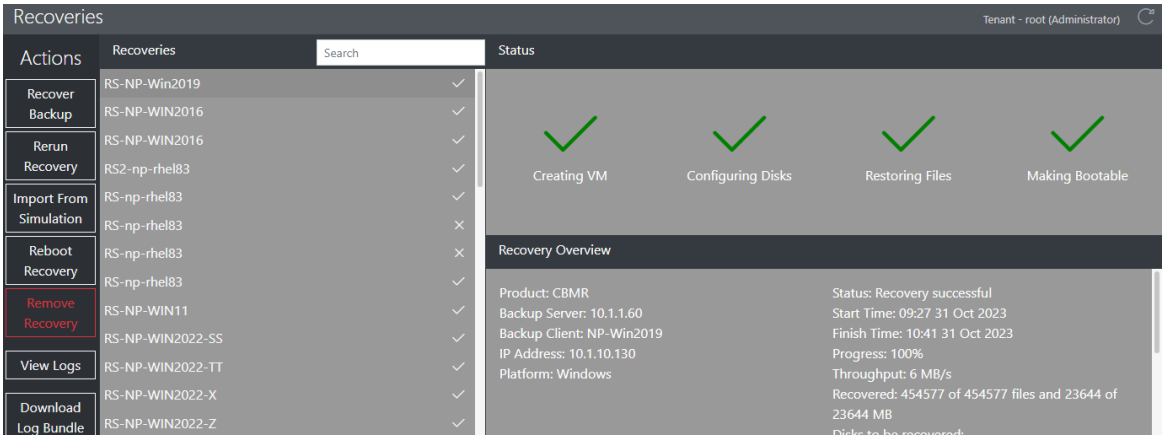
Configuring Disks



Restoring Files

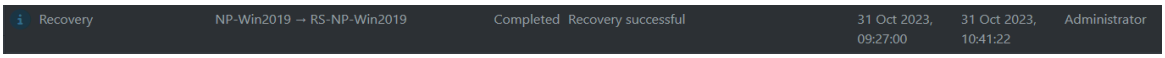


Making Bootable

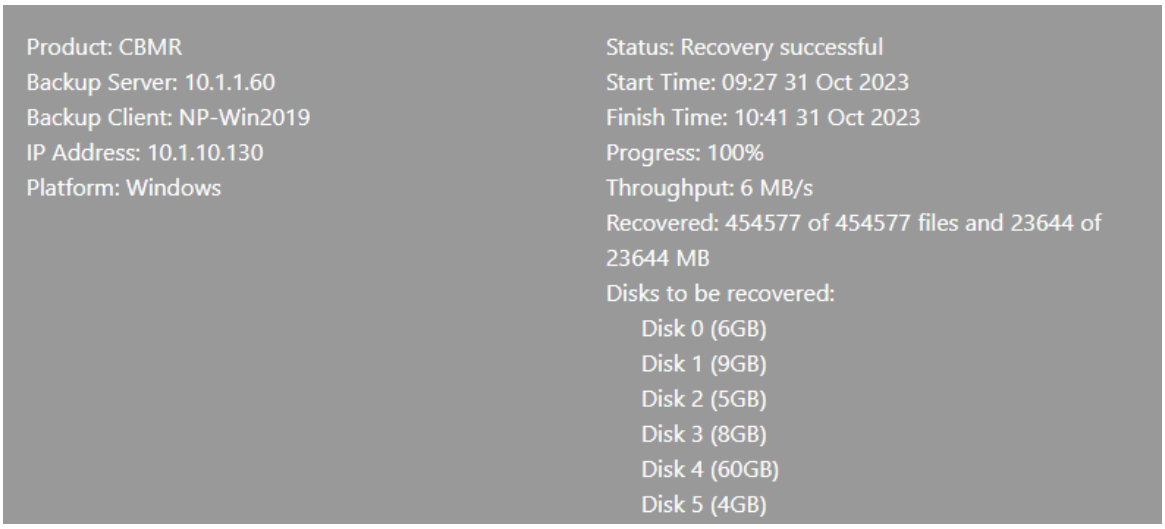


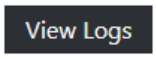
At any point during the recovery sequence you can use 

to cancel the operation. You will see an Alert of the following form to confirm the current state of the recovery.



The **Recovery Overview** summarises the statistics for the operation.



Click 

to examine the Recovery Logs for the currently selected recovery.

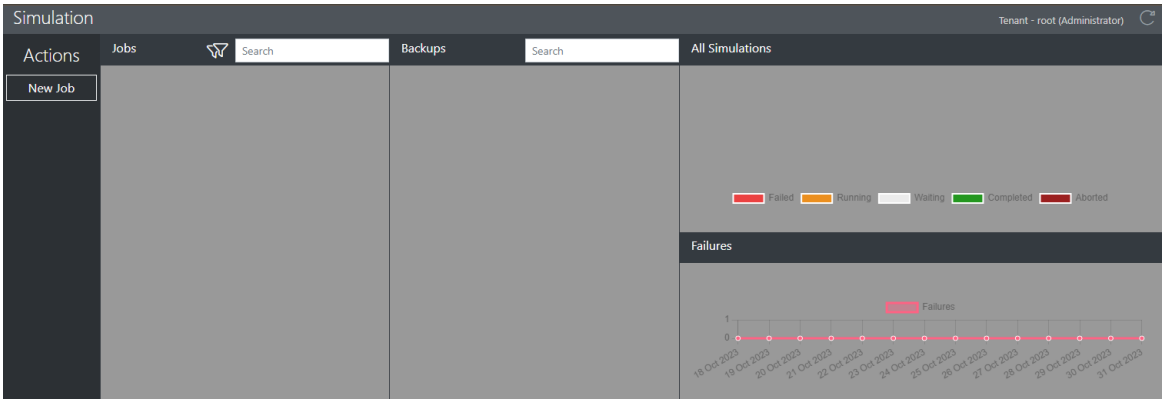
The recovery will stay listed on the dialogue until removed by using 

.

4.2 Simulation

A **Simulation** allows sceduled test recoveries of ***any supported Cristie BMR product*** backups to be made - not just CBMR.

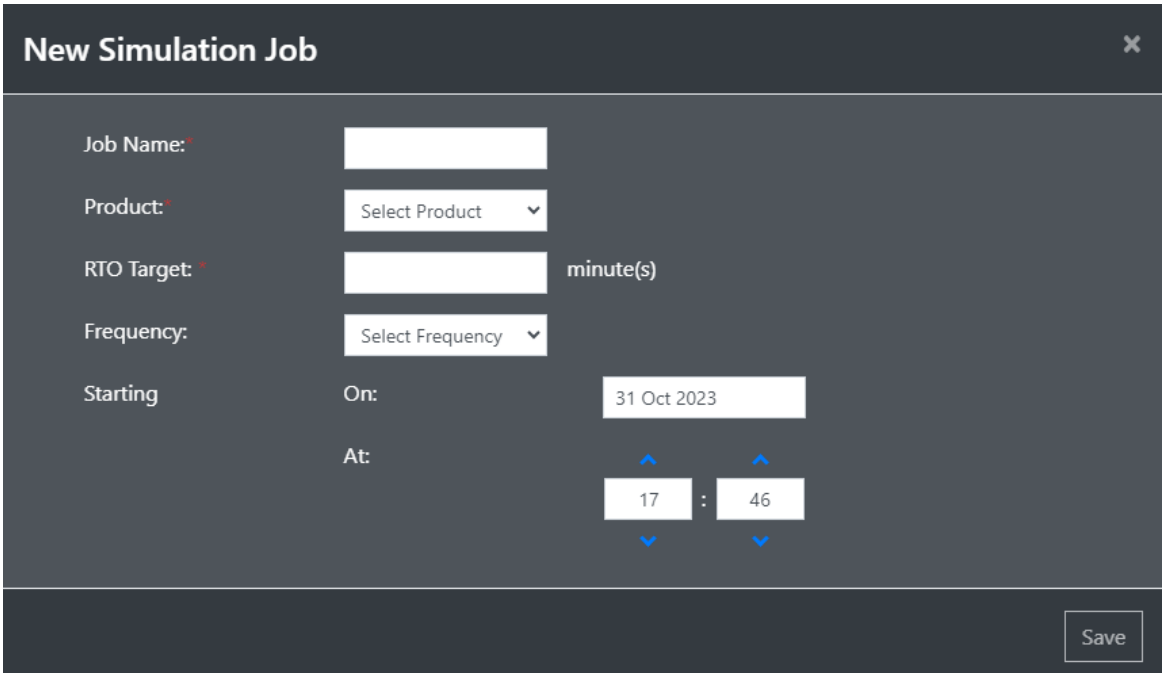
To start a test recovery using **Simulate** firstly open the Cristie VA Dashboard, and then navigate to **Simulate**  . You will then see this dialogue.



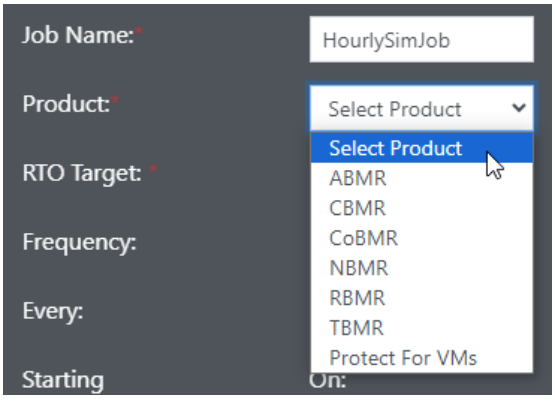
You will now need to Add a Job.

4.2.1 Add a Job

On the Cristie VA Dashboard, navigate to **Simulate** and then select New Job. You will then see this dialogue.



Give the new job a unique **Name** and select the correct Cristie Product.

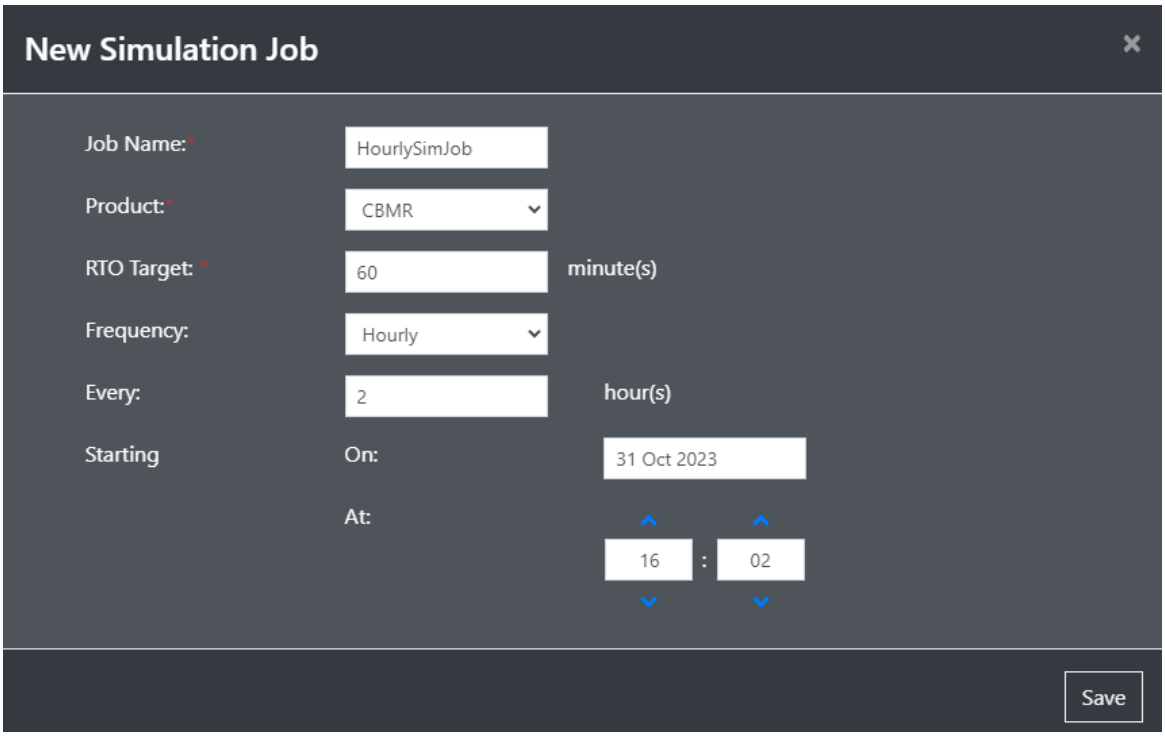


Specify the simulation **Frequency** and the **Interval**. The frequency/interval can be set as summarised in the table below.

Frequency	Description
Once	Run once only at the specified date and time
Hourly	Syncs run every user specified number of hours at a selected time
Daily	Syncs run every user selected number of days at a selected time
Weekly	Syncs run on specific user selected day(s) of the week (Monday/Tuesday etc.) at a selected time
Monthly	Syncs run only on a specified day of the month at a selected time

Set the **Recoverry Time Objective** (RTO) in minutes if required otherwise leave blank.

You may also specify when the first simulation run will occur.



Now click Save to create the new job.

4.2.2 Add Recovery to Job

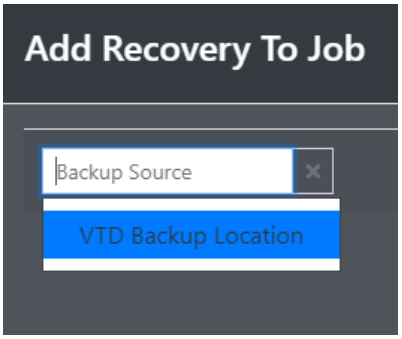
With a **Simulation** job in place you can now add the recovery backup or backups to the job. This discussion is very specific to CBMR simulations, but the process of adding the recovery backup for the other supported BMR products is very similar.

Note: The backups can be a mix of Windows and/or Linux.

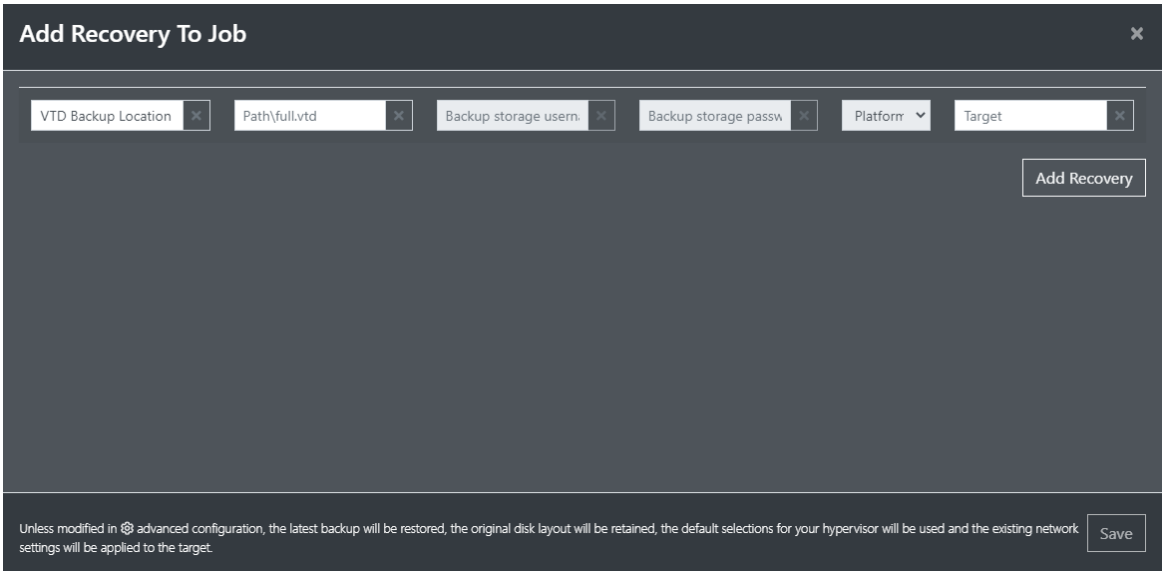
Select the job and then click Add Simulation. This will bring up a dialogue where you can select the source backup to be added. Click the **Backup Source** field and then the backup location type from

the drop-down list. Since we selected CBMR as product type for the job in this example the only choice offered is a VTD backup location.

> ***Note: The backup location choices offered will be dictated by the Cristie BMR product selected for the job.***



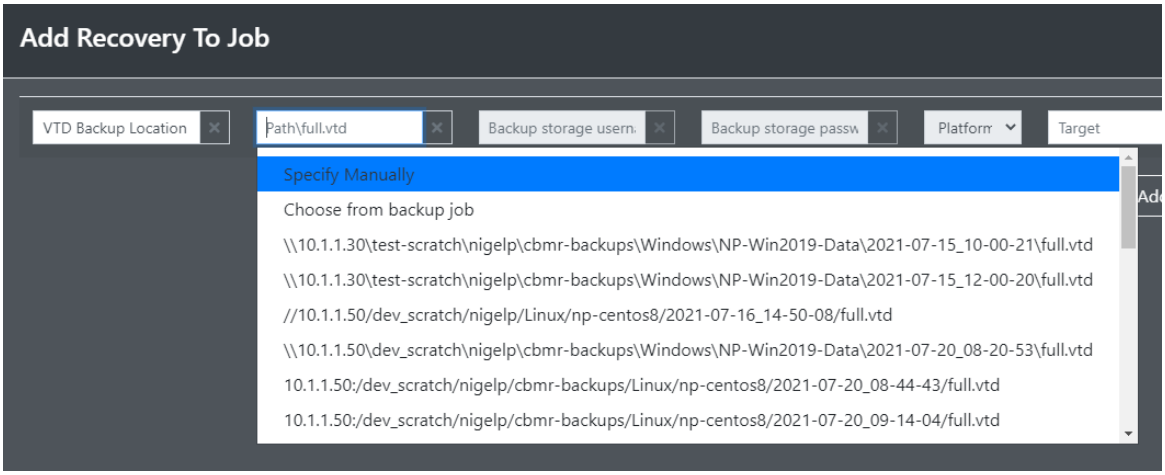
You will then be presented with a dialogue that allows the recovery details to be configured.



The fields to be filled in are:

Path\full.vtd

The full path to the CBMR VTD backup file. Clicking this field displays a drop-down list with several further choices.



- **Specify manually** - A manually entered path to the CBMR VTD of interest. Please refer to the section Specify Manually for more information.
- **Choose from backup job** - Select a backup direct from a current backup job. Please refer to the section Choose From Backup Job for more information.
- **A list of historical VTD backups made by the Cristie VA** - Select one that corresponds to the system and date/time you want to restore. Please refer to the section List of Historical VA Backups for more information.

Backup Storage Username/Password

Network share access credentials for the VTD path above. These will get filled if the path is recognised by the Cristie VA. Note this is required for SMB shares only.

Platform

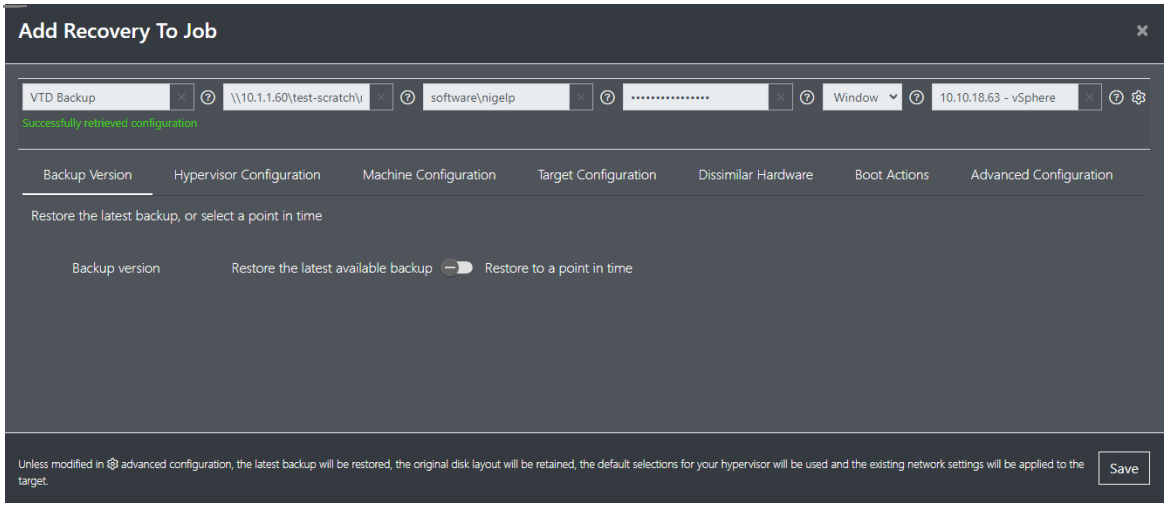
Windows/Linux/AIX

Target

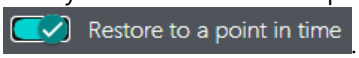
The backup will be recovered to a VM on the selected Hypervisor. This must have been previously configured in the VA.

4.2.2.1 Settings

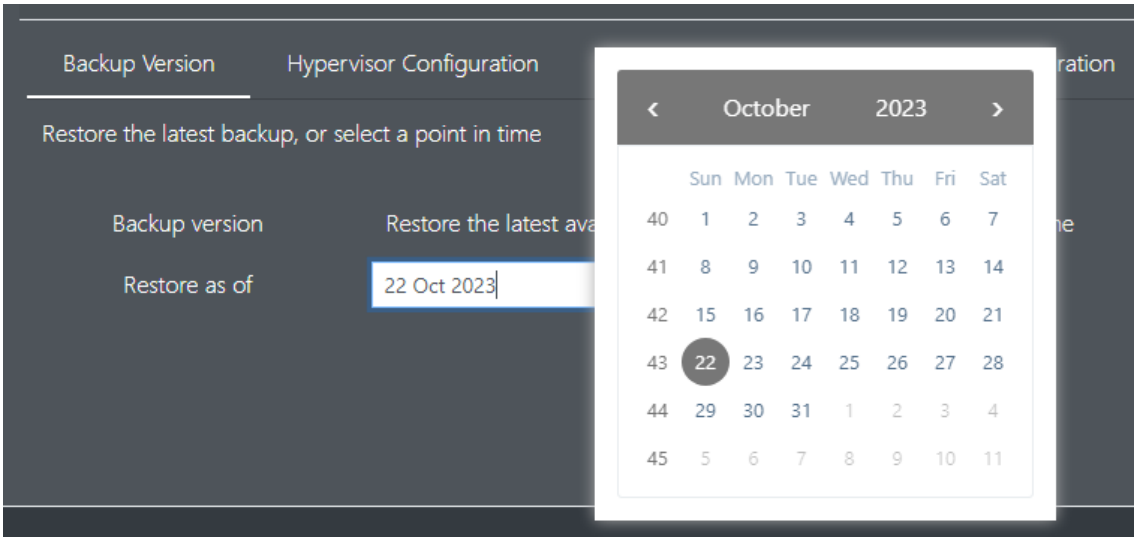
To configure non-default recovery settings for a host machine click the Settings icon after the configuration has been retrieved. This will then display a dialogue like this containing several tabs:



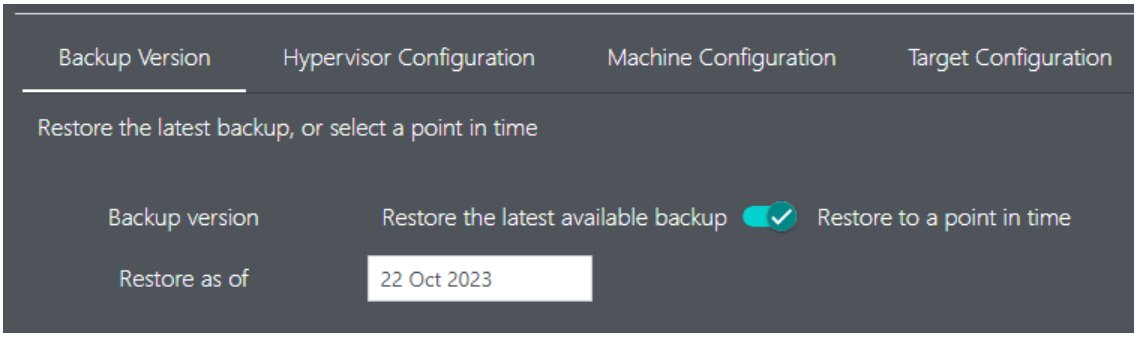
Backup Version tab

Here you can select a backup version - not just the latest version (the default). Click the slider to 

. This will display a new Date field where you can select a date.

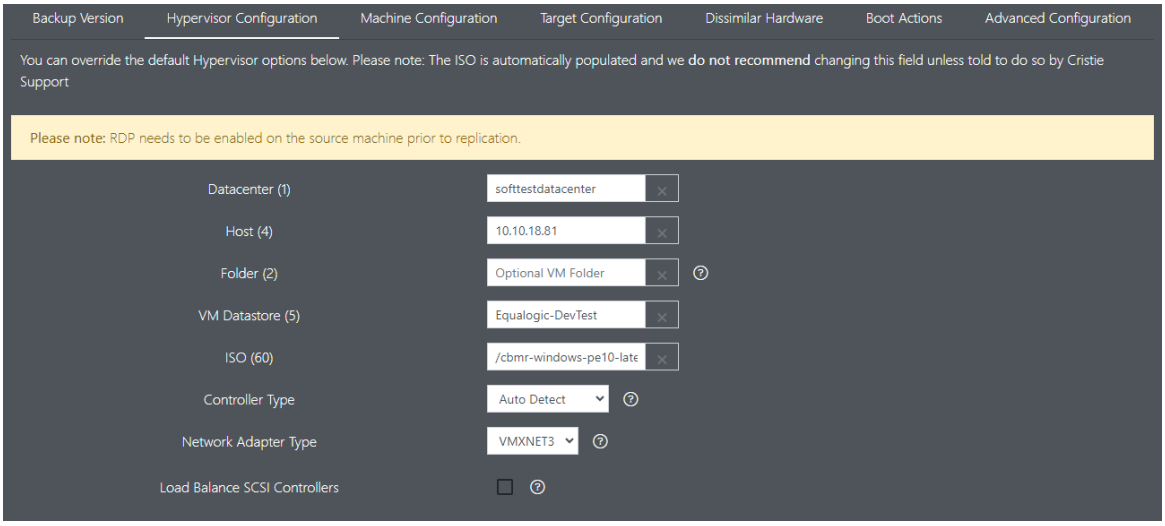


Click on a date or manually enter one. Add a time as required.



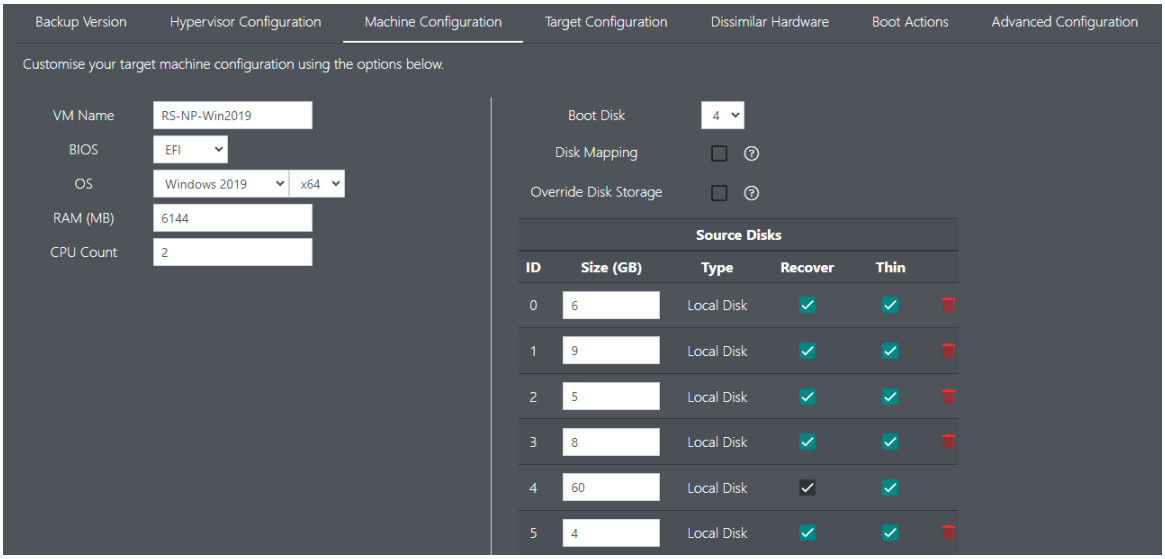
Hypervisor Configuration tab

This tab allows the default settings for the Hypervisor to be set:



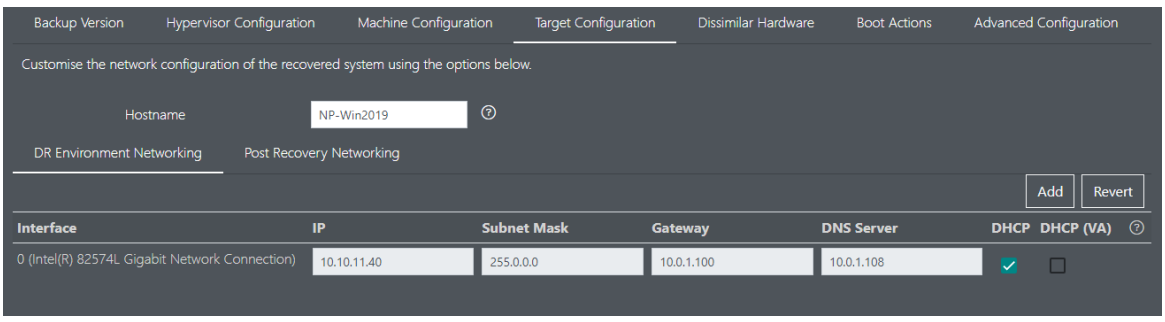
Machine Configuration tab

Use this tab to set the recovered target machine configuration. The default is to copy the source machine OS and disk settings but it can be modified here.



Target Configuration tab

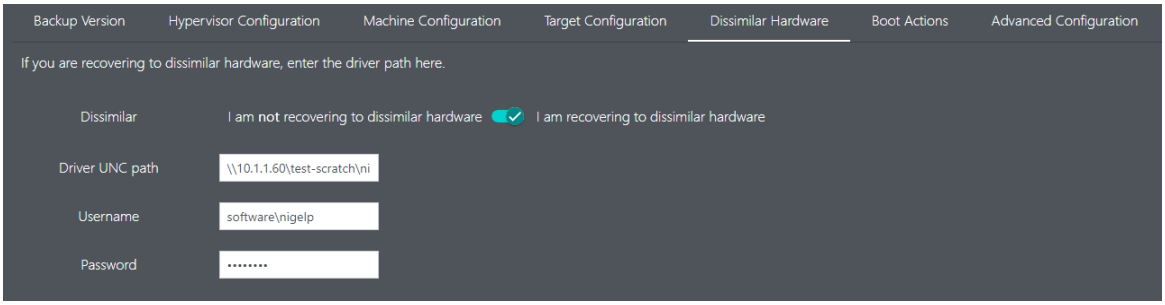
Use this tab to set the recovered target machine hostname and network configuration. The default is to copy the equivalent source machine settings but it can be modified here.



Dissimilar Hardware

This tab allows you to configure any additional drivers for dissimilar targets.

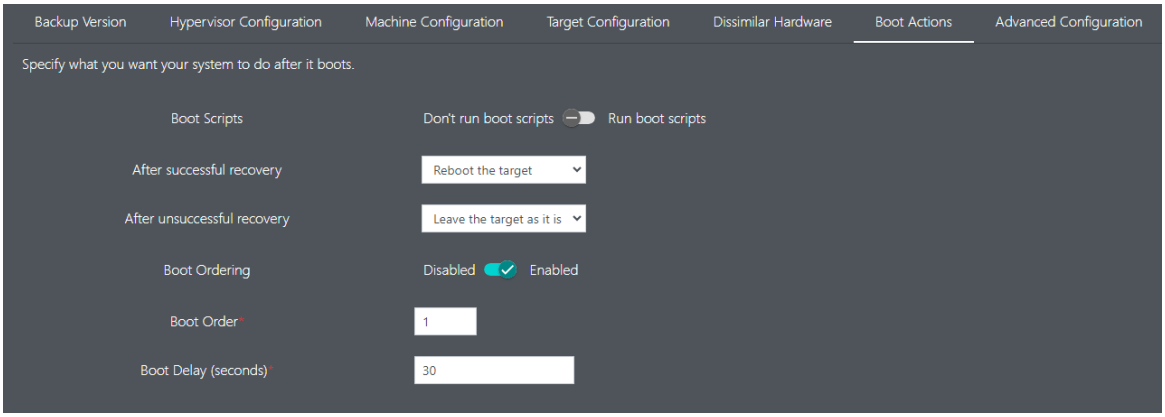
Click the slider to enable Dissimilar HardWare (DHW) mode. Then add a path to where the drivers can be found:



These drivers will be injected into the replication target system at boot.

Boot Actions tab

Use this tab to set the recovered target machine boot actions. The default is to leave the target as is for both successful and unsuccessful recoveries, but it can be modified here.



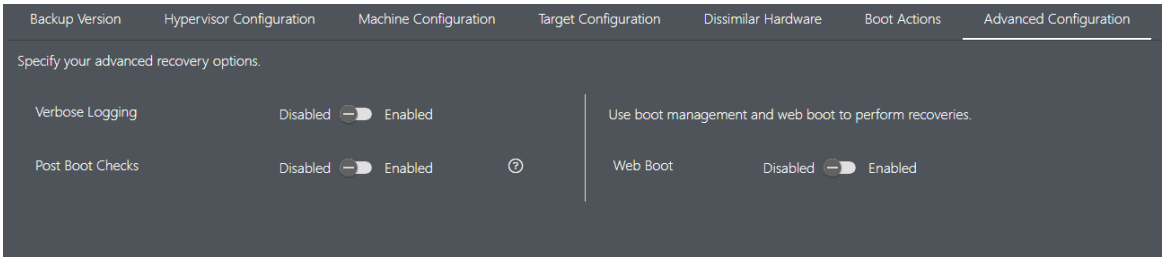
Boot Order

This setting allows the boot order of all machines in a job to be set. So when a job is booted the order and boot delay can be set. Default behaviour is to boot all machines in the job together which may not always be sensible.

To set the order move the slider to **Enabled** and the select the boot order of this target and delay. This is not necessary if the target is the only machine in the job.

Advanced Configuration

There are some Replication settings which do not need to be changed very frequently from their default values. They are grouped in this tab. You should consult Cristie Support for guidance before you change these settings.

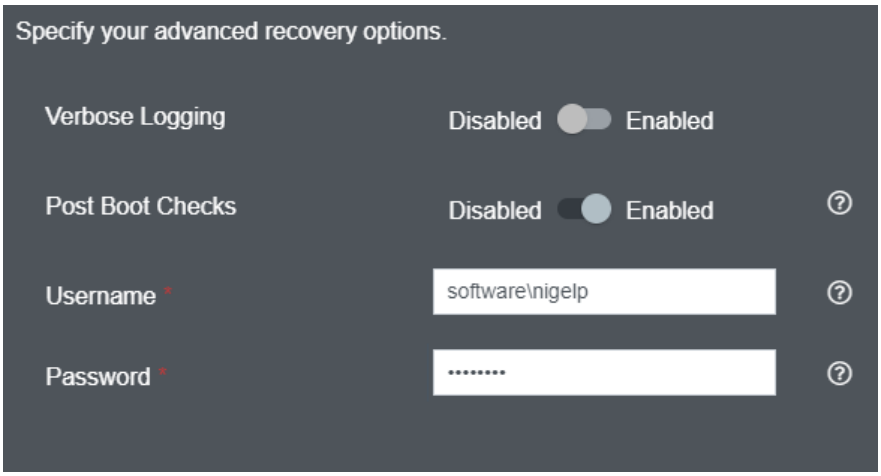


Verbose Logging

Enable **Verbose Logging** if you are having problems with the replication and have been directed to do so by **Cristie Support**. Otherwise leave this setting at Disabled.

Post Boot Checks

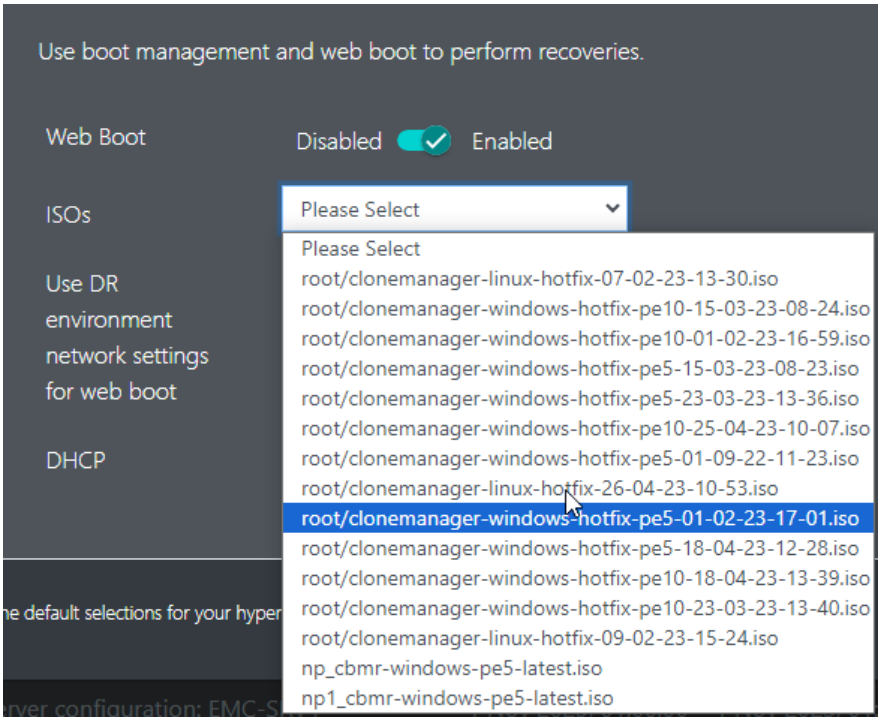
After a replication target has been booted its system integrity can be checked to give an indication that the booted system is viable. To do this enable the option and enter the target Login credentials.



Note running these checks is not a guarantee of a useable recovered system.

Web Boot

This option allows a custom build replication ISO to be used for the target (this may have custom drivers or be a hotfix test ISO for example). Enable the option and then select the ISO from the drop-down.

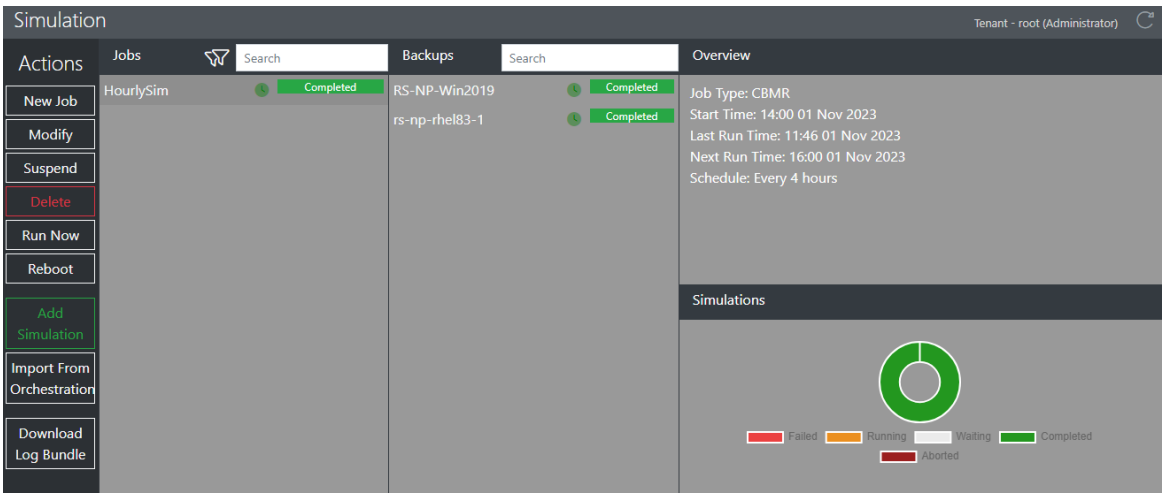


You may override the network settings of the selected ISO as required.

4.2.3 Run Simulations

With the Simulate job created and at least one recovery machine added to the job it will continue to restore simulations indefinitely until either manually booted, the job is suspended or the job or machine is deleted.

It is possible to add multiple simulation machines to the same job. The machines in the job do not need to be the same platform type. Here is an example with 1 Windows machine and 1 Linux machine.



There is no constraint on how many machines can be added to a job. Cristie suggests grouping machines in the same job where they need to be controlled together.

These are the job/machine icons you will see in the Backup section and their meanings.

 - job or machine simulation suspended.

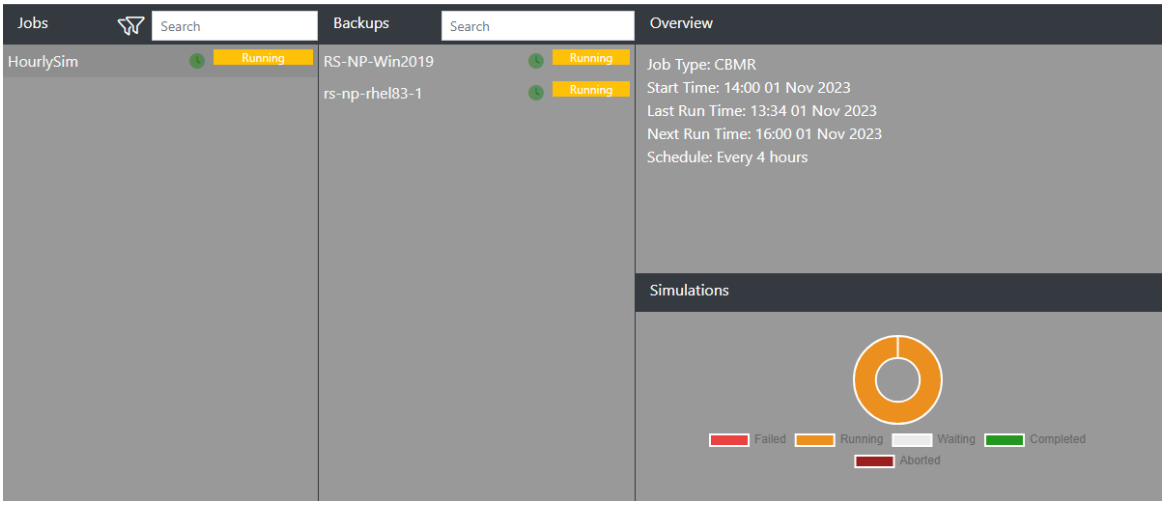
 - job or machine RTO on target.

 - job or machine RTO not on target.

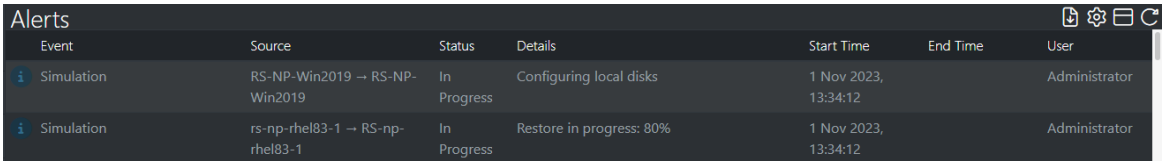
 - shown on the job - one or more machine recoveries has not met the specified RTO target.

4.2.3.1 Normal Operation

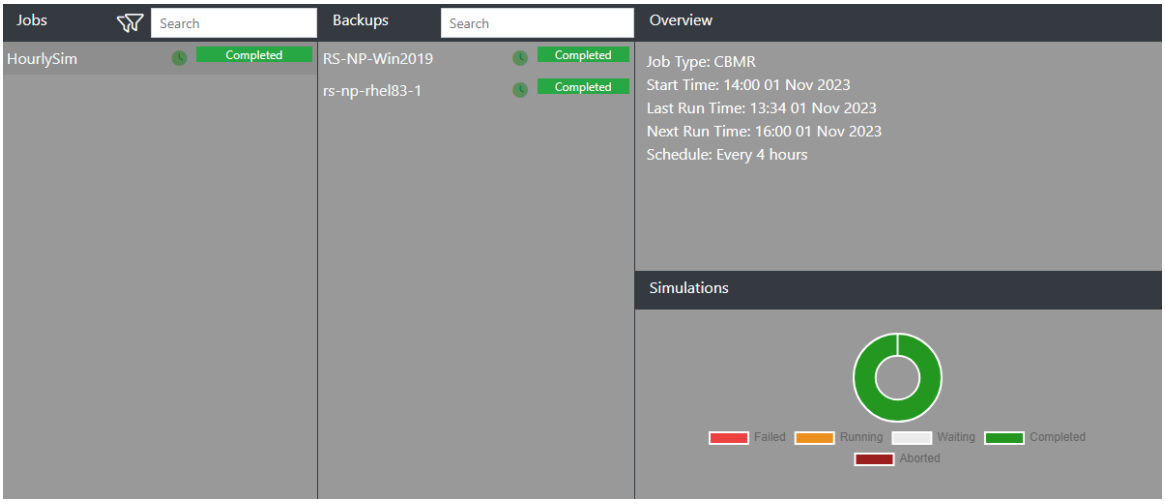
This is an example of simulations running.



You will also see the Alerts updated with the job progress:



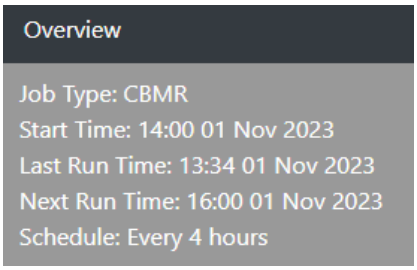
The machines in the job will recover independently of each other and so will progress at different rates and finish at different times. When the recoveries are complete you will see this:



The **Next Run Time** will now show an updated value on completion for the next run.

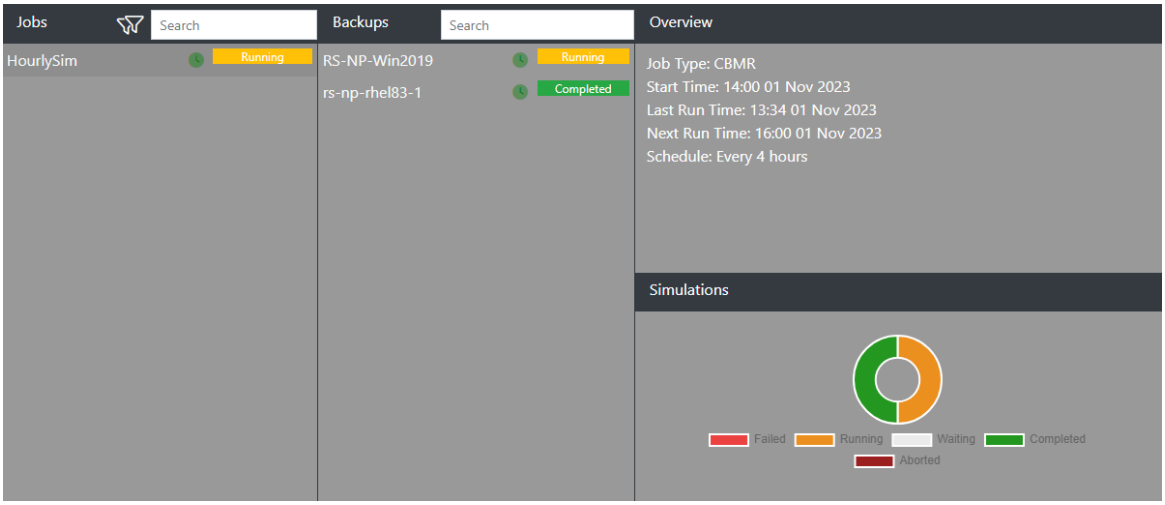
Job Overview

Certain job simulation statistics will be shown in the **Overview** section for a job. Click on the job of interest (not a machine). You will then see something like this:



The information shown is self-explanatory.

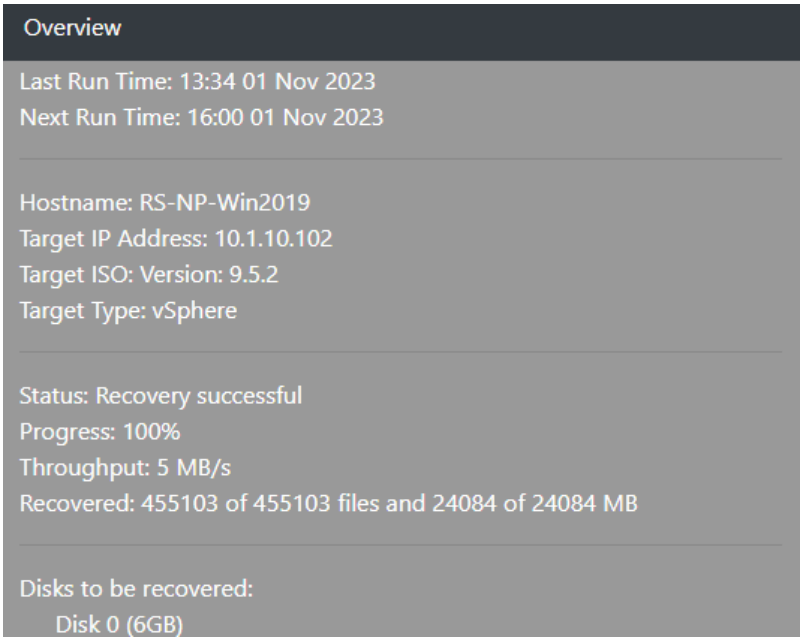
In the machines section for the job, you will be provided with a small pie-chart. This shows the break down of machines in the job and their current state.



In the example shown the chart shows the state for the 2 machines in the job. One is Running and the other is Complete.

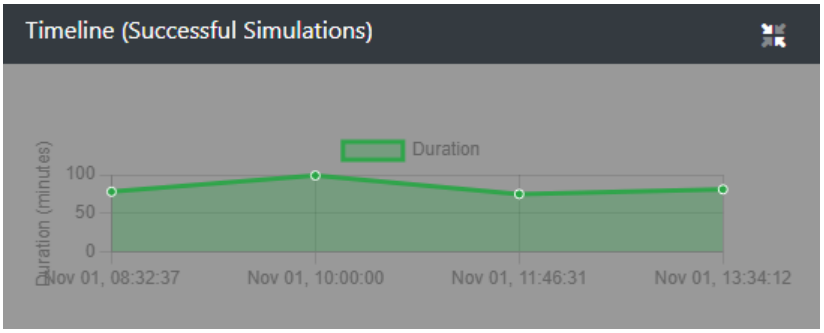
Machine Overview

Certain machine simulation statistics will be shown in the **Overview** section for a machine in a job. Click on the machine of interest (not the job). You will then see something like this:

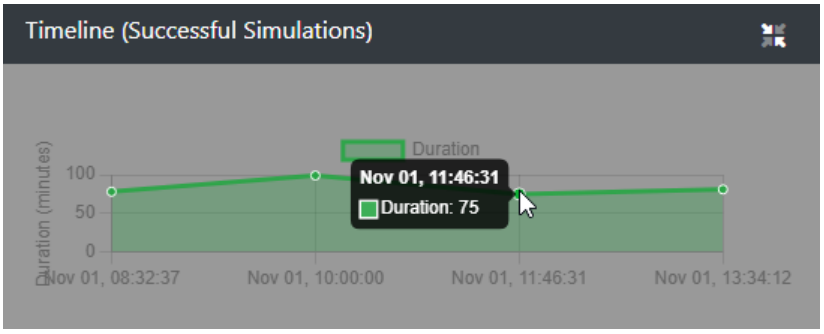


The information shown is self-explanatory.

In the machines section, when the machine has recovered a few times, you will be provided with a small graphical summary display of the duration of each backup (in green).



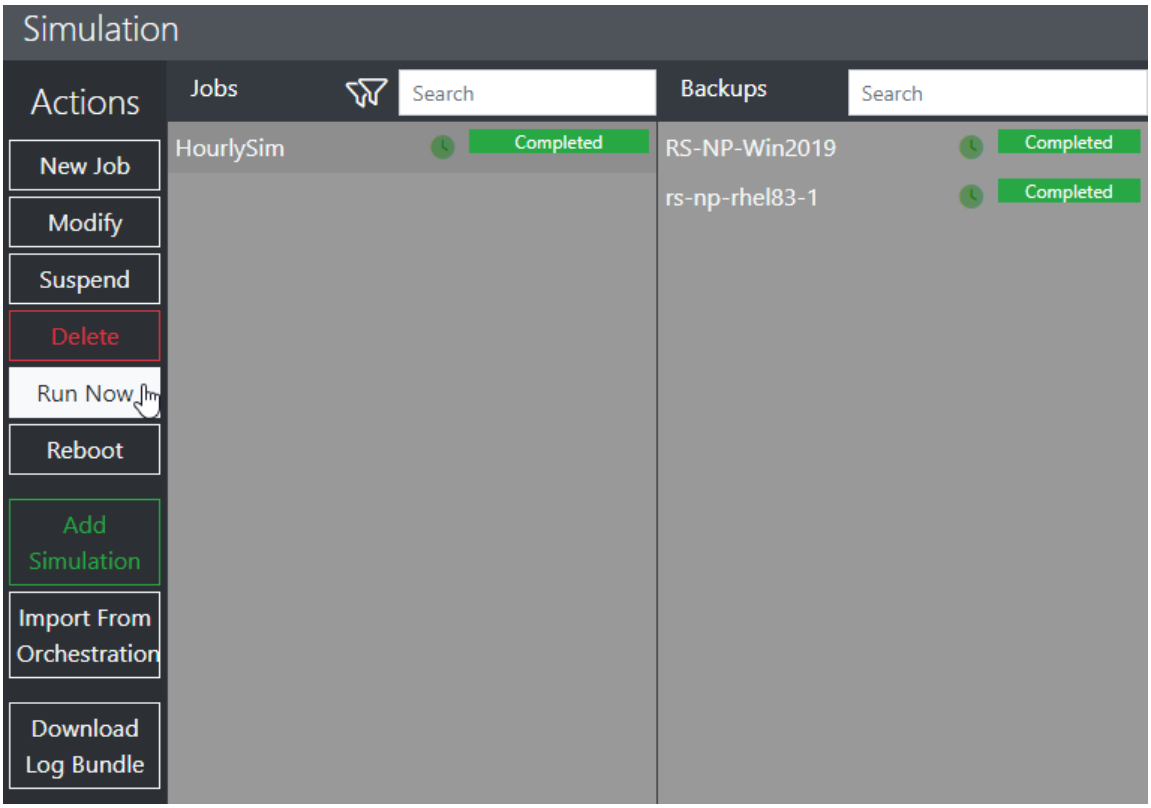
You can click on any of the simulation data points in the graph for further information on the recovery duration (in minutes).



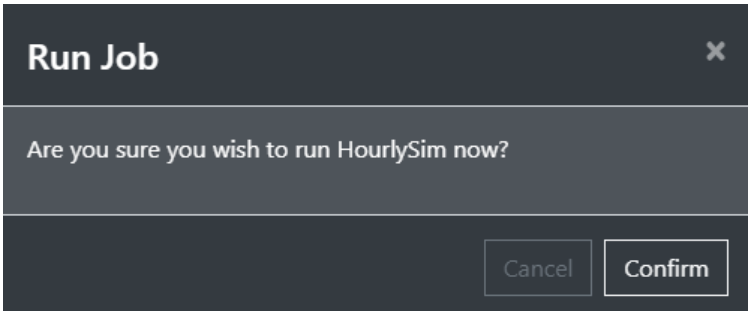
4.2.4 Run Now

Its possible to bypass the scheduled simulations of either a job or an individual machine without disturbing the configured scheduling. This feature allows a user to create a new simulation on demand, say after a major update to a host.

To do this highlight either the complete job or the individual machine and click Run Now.

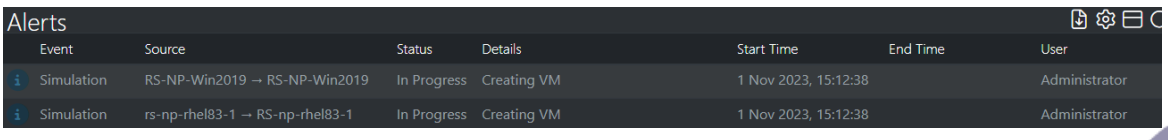


You will then be prompted to confirm the action:



Click Confirm to proceed. The job or machine simulation will then be initiated. If a simulation is already running the Run Now request will be ignored.

An appropriate **Alert** will also be generated for the running simulations:

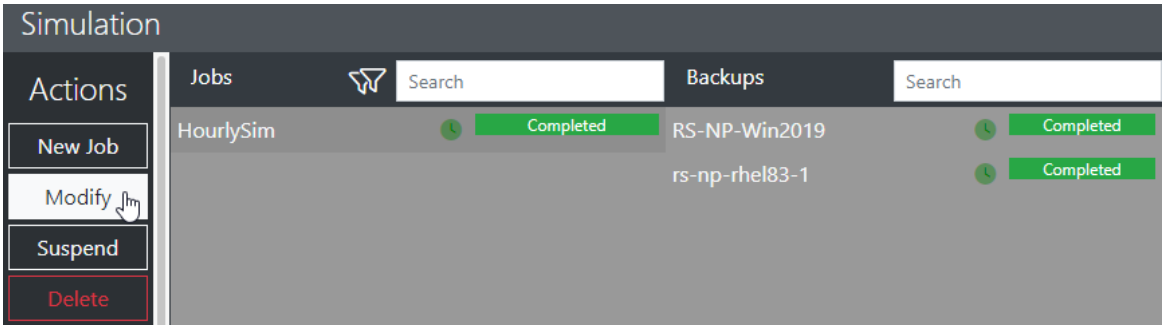


4.2.5 Modify

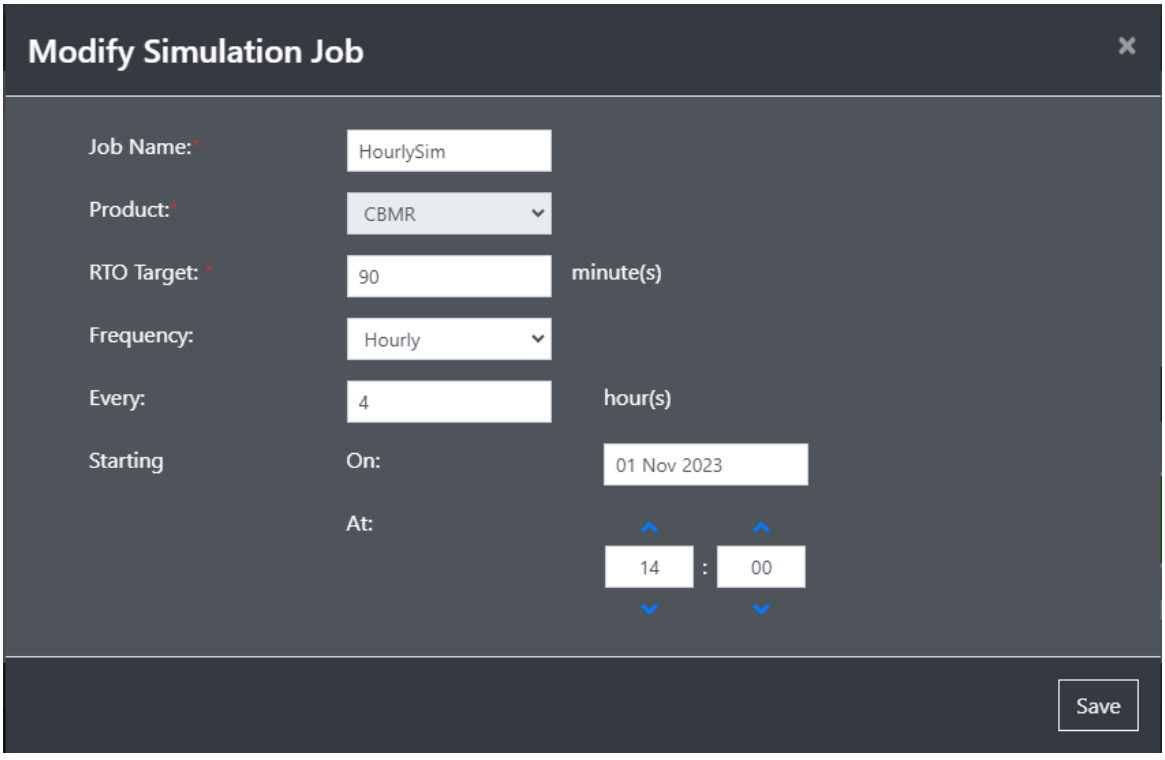
This option allows certain settings for the simulation job or any of it associated machines to be changed.

4.2.5.1 Job Settings

To modify a whole job (note simulations for all machines in the job will be affected in this case), click on the job and then the Modify Job button.



You will then see the current scheduling settings.



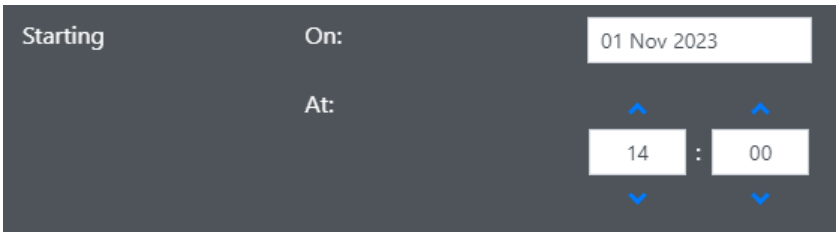
Modify the job **Name** if required.

The Product cannot be changed.

Modify the simulation job **Frequency** and the **Interval**. The frequency/interval can be set as summarised in the table below.

Frequency	Description
Once	Run once only at the specified date and time
Hourly	Backups run every user specified number of hours at a selected time
Daily	Backups run every user selected number of days at a selected time
Weekly	Backups run on specific user selected day(s) of the week (Monday/ Tuesday etc.) at a selected time
Monthly	Backups run only on a specified day of the month at a selected time

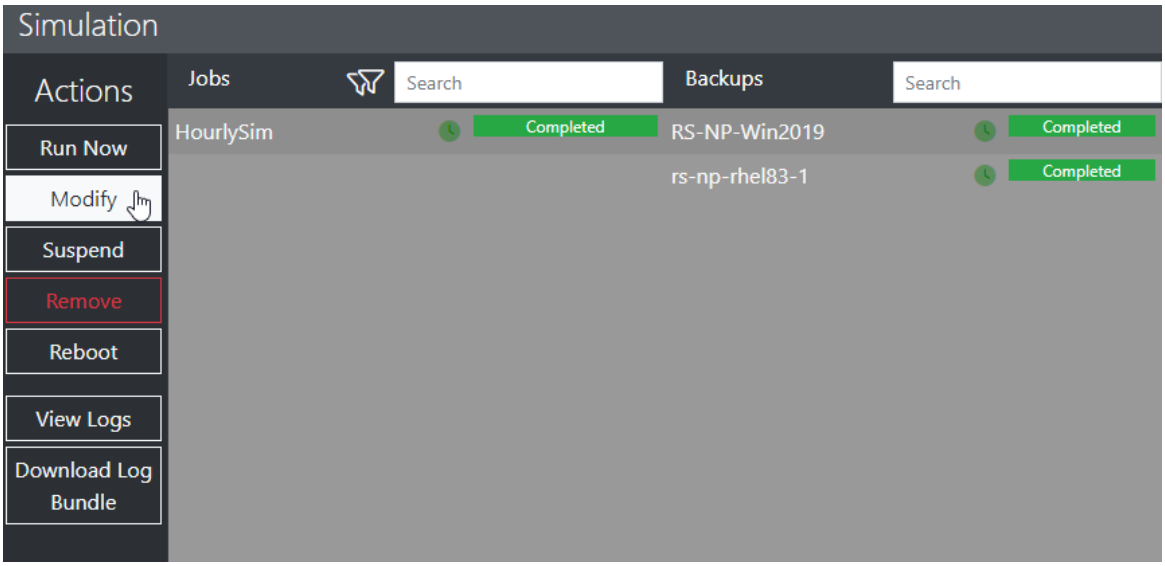
You may also specify when the next backup run will occur.



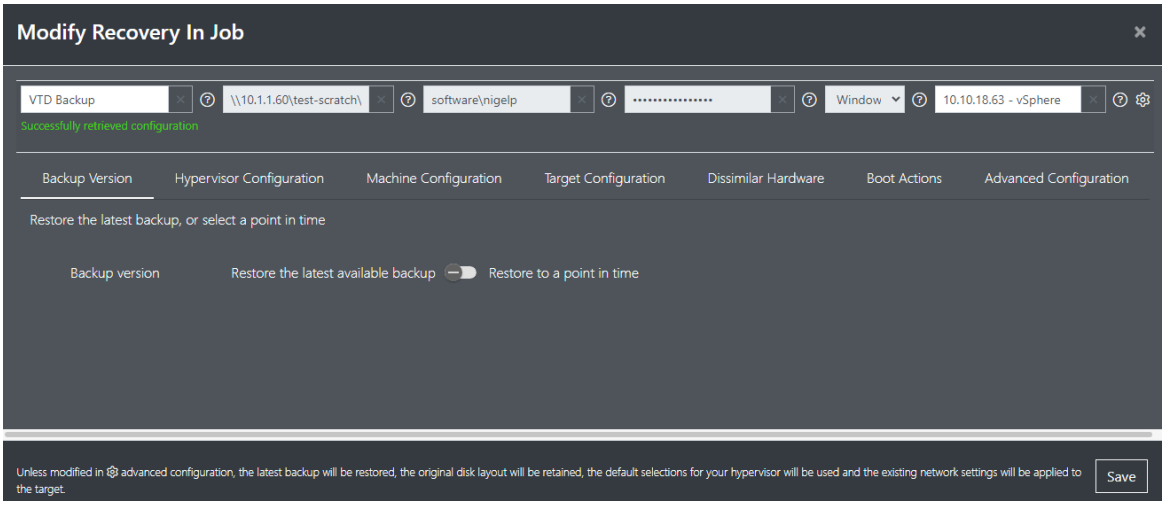
Now click Save to modify the job.

4.2.5.2 Machine Settings

To modify the settings for a single machine in a job click on the machine and then the Modify button.

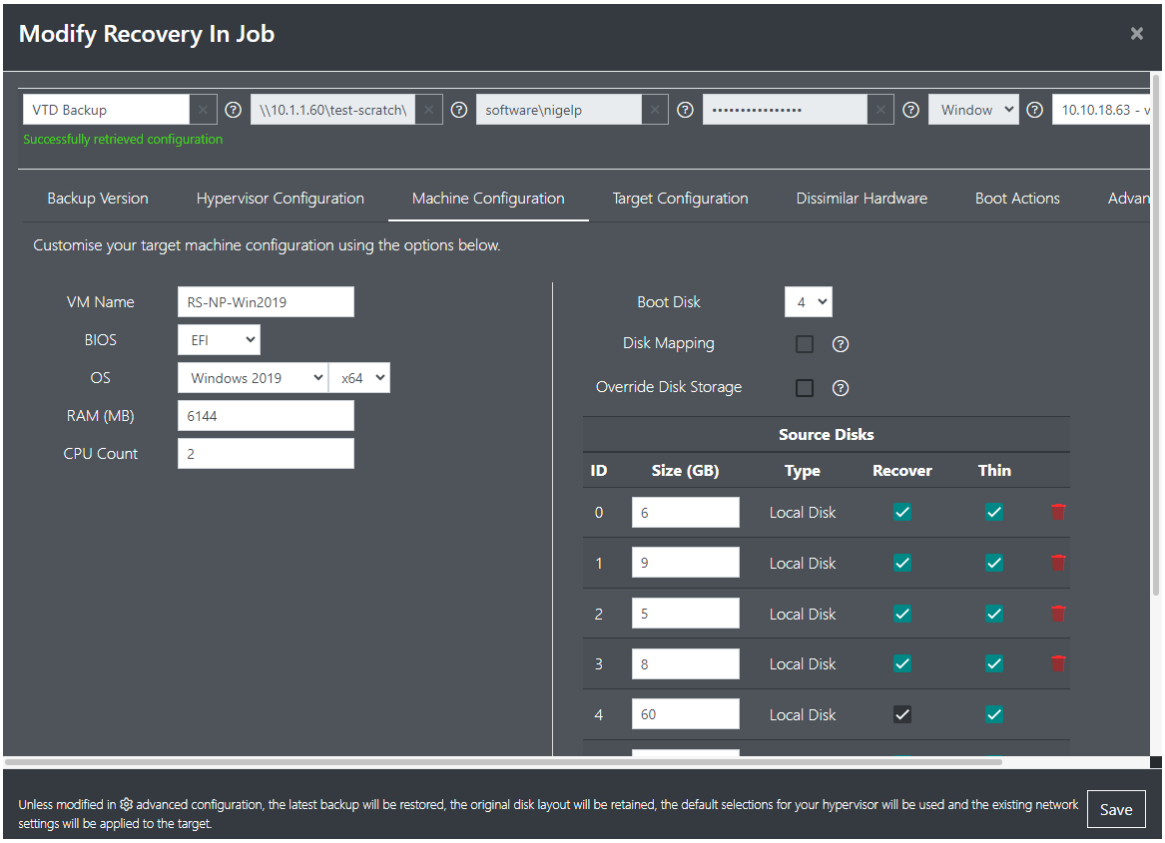


The selected machine backup configuration will be restored and this dialogue displayed.



Re-add the storage location password and then click the advanced settings icon  . Click on any of the settings tabs and make the changes you require.

Advanced settings is described in the section Advanced Configuration under Add Recovery to Job.



Click Save to confirm and save your changes.

4.2.6 Suspend/Resume

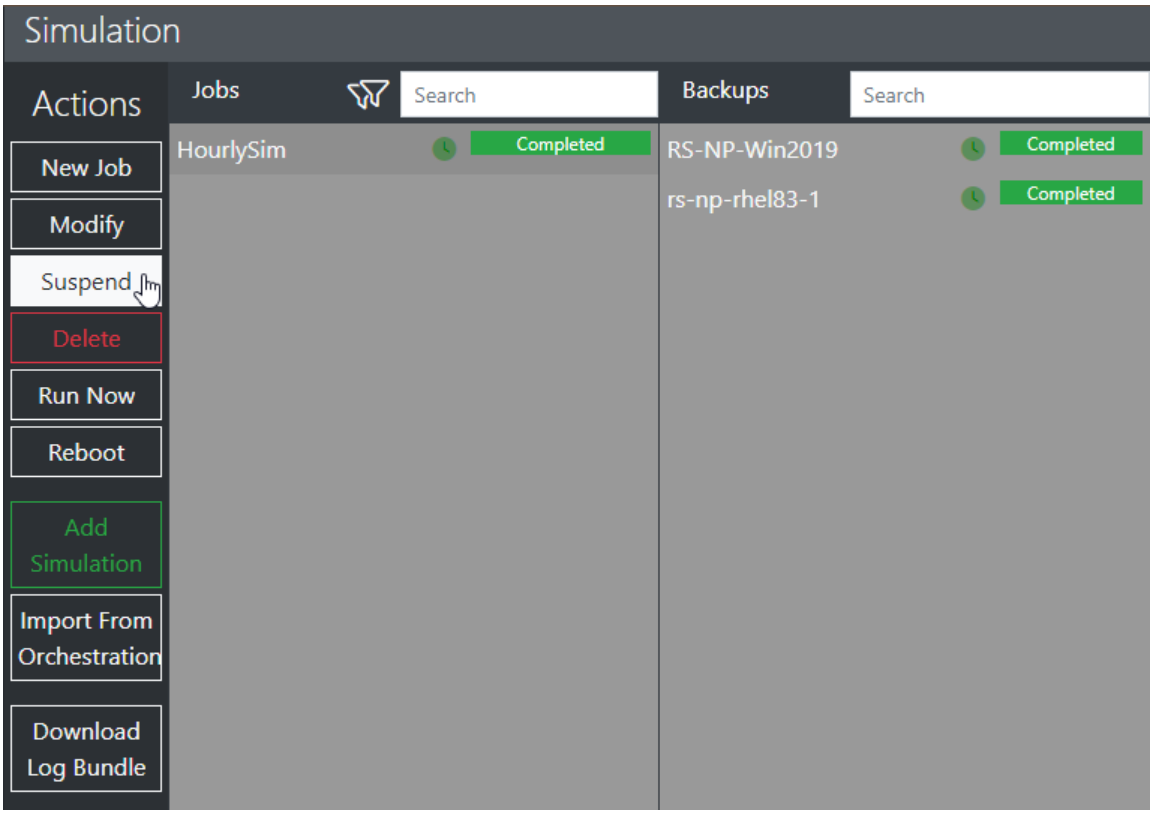
With a simulation job running normally you may wish to temporarily suspend the whole job or one of the machines associated with the job. This may be required for example if the target Hypervisor host is to undergo temporary maintenance.

Simulations can then be resumed when the maintenance is finished.

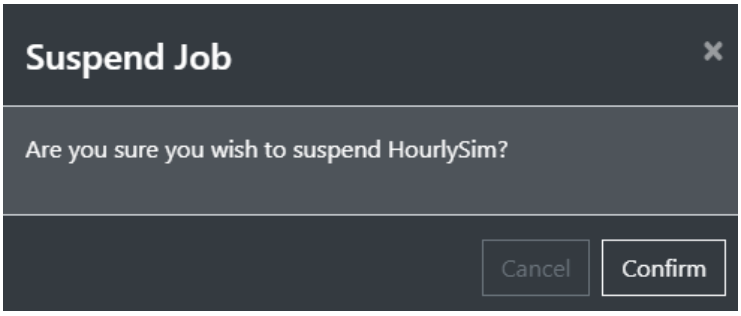
4.2.6.1 Whole Job

Suspend

To suspend a whole job (note simulations for all machines in the job will be suspended in this case), click on the job and then the Suspend button.



You will then be prompted to confirm the suspension.

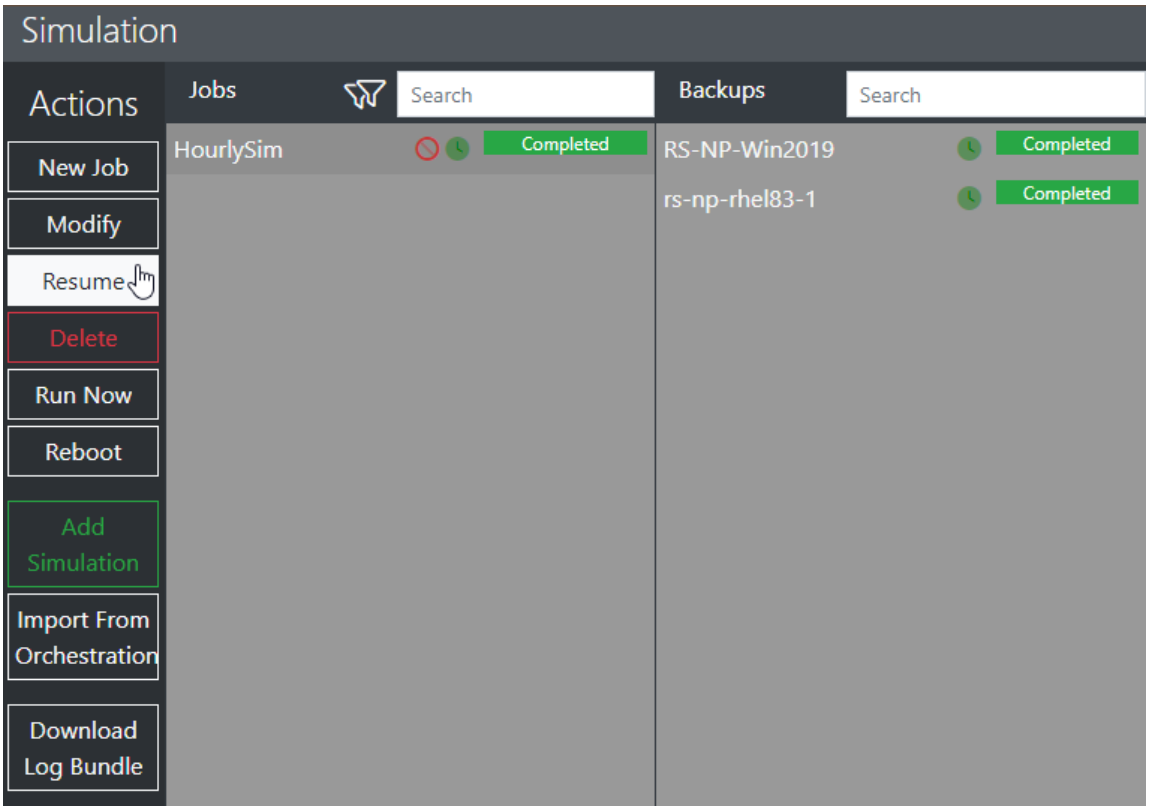


Click Confirm to proceed. The job will then be disabled and this indication will be shown on the job.

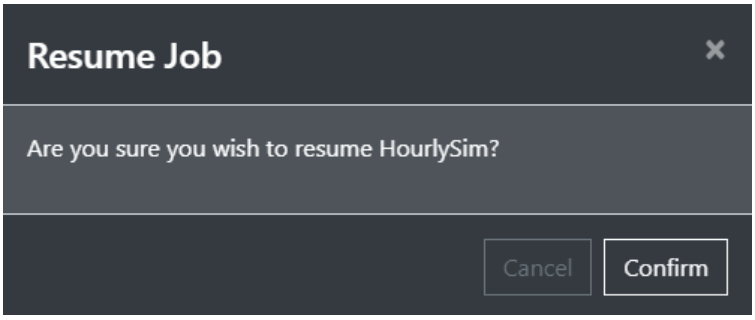
Note: Attempting to Suspend a running job will only take effect when the job completes.

Resume

To resume a suspended job click on the job and then click Resume.

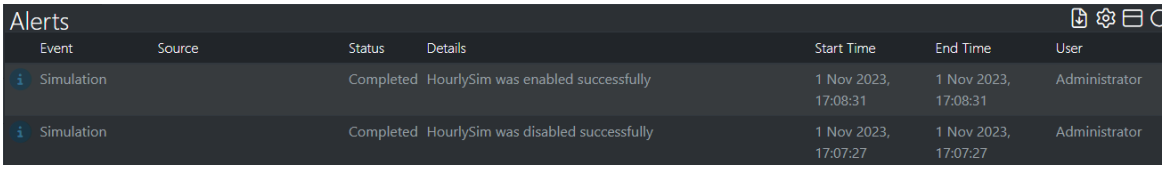


You will then be prompted to confirm the job resumption.



Click Confirm to proceed. The job will then be resumed and all machines will begin running simulations at the next scheduled date/time. The indication on the job will be removed.

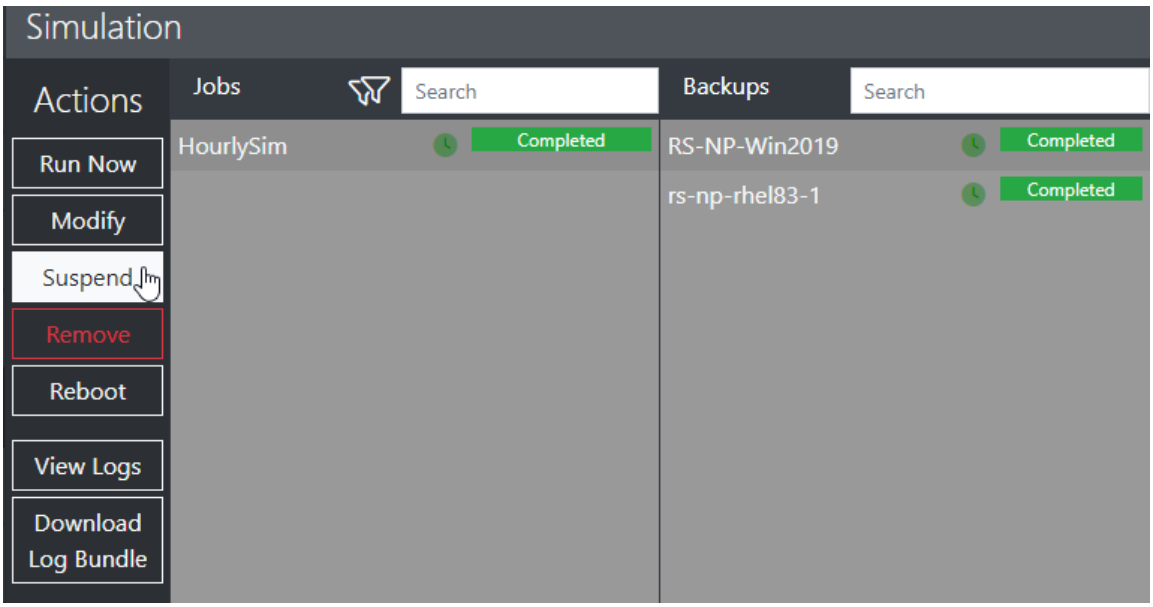
You will also see Alerts associated with the job Suspend/Resume activity.



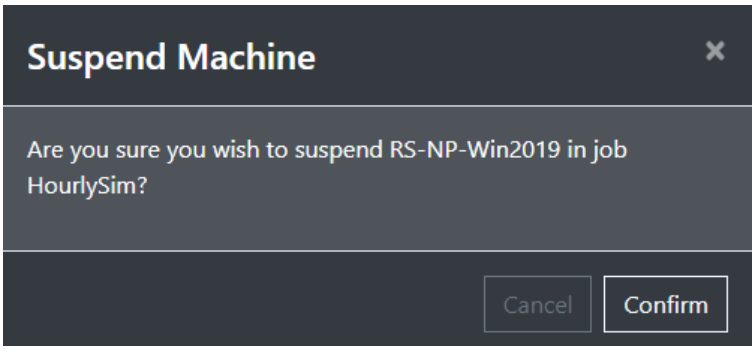
4.2.6.2 Individual Machine

Suspend

To suspend one machine in a job, click on the machine and then the Suspend button.



You will then be prompted to confirm the suspension.

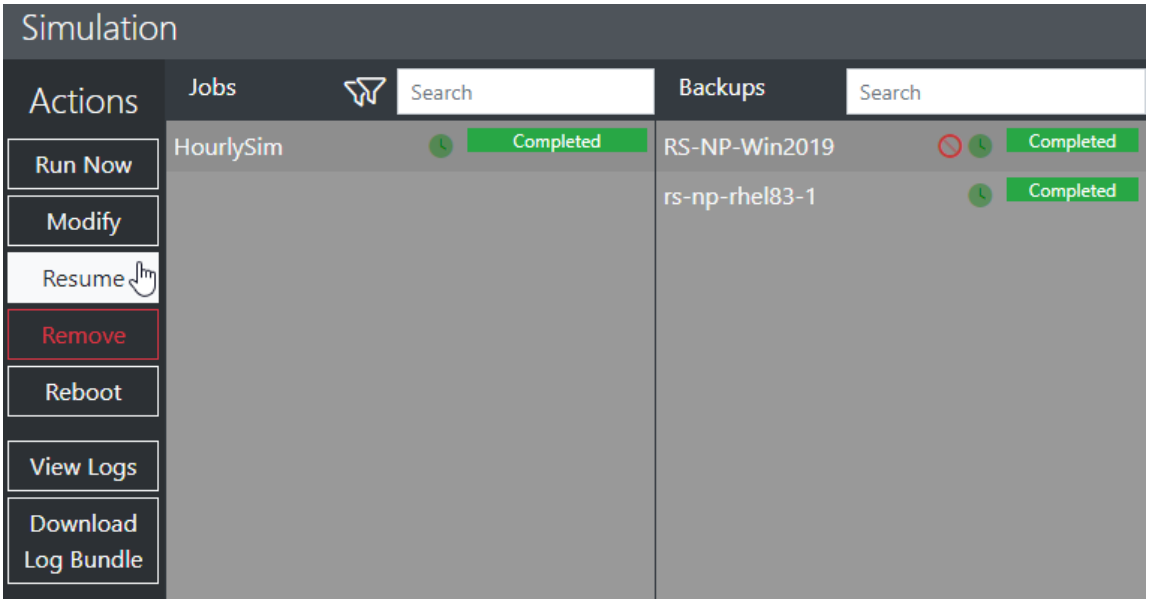


Click Confirm to proceed. The job will then be disabled and this indication will be shown on the job.

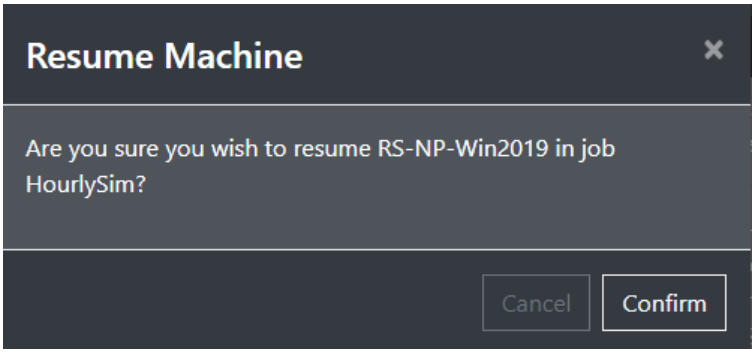
> ***Note: Attempting to Suspend a running job will only take effect when the job completes.***

Resume

To resume a suspended job click on the job and then click Resume.

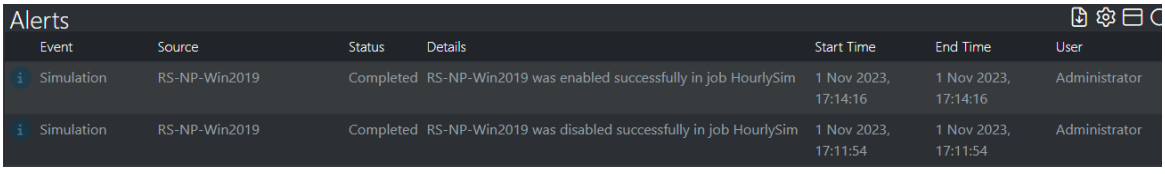


You will then be prompted to confirm the job resumption.



Click Confirm to proceed. The job will then be resumed and all machines will begin running simulations at the next scheduled date/time. The indication on the job will be removed.

You will also see Alerts associated with the job Suspend/Resume activity.

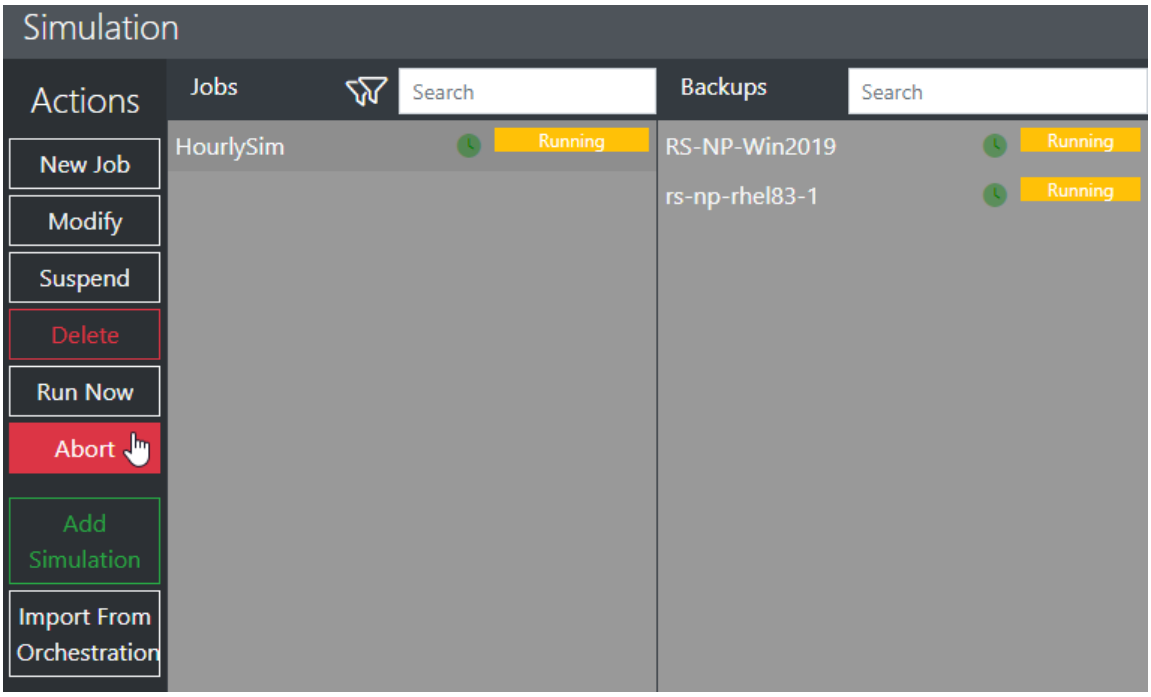


4.2.7 Abort

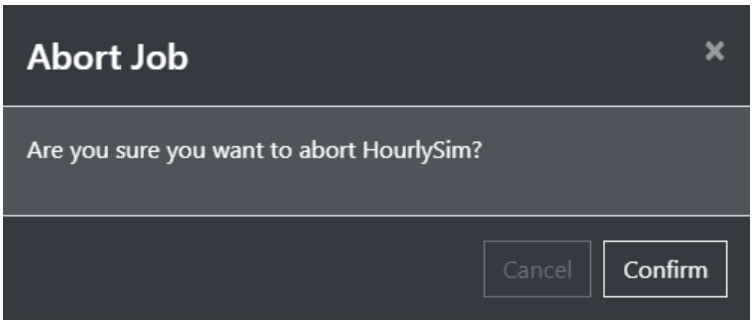
While a simulation is running it is possible to abort the operation before it completes if necessary. As a consequence the target VM or VMs will be deleted since it or they would now be in an inconsistent state.

4.2.7.1 Whole Job

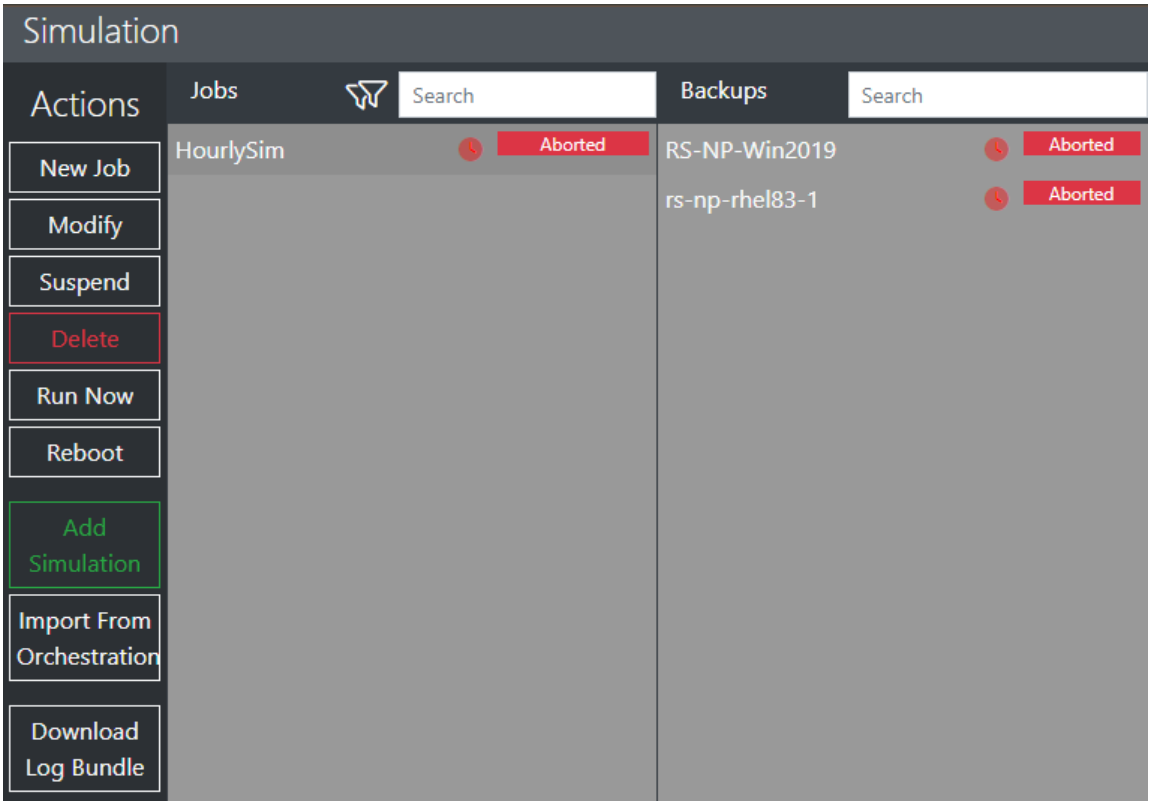
To abort simulations for a whole job (note all machines in the job will be be aborted), click on the job and then the Abort button.



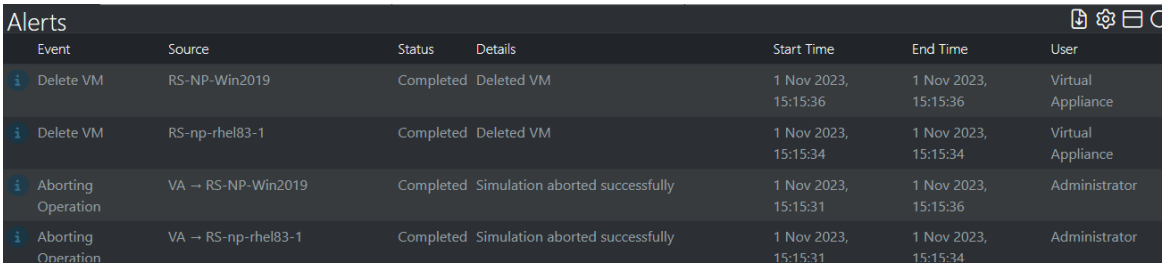
You will then be prompted to confirm the abort action.



Click Confirm to proceed. Any simulations currently in progress for the selected job and its associated machines will then be stopped. The associated target VMs will be deleted.



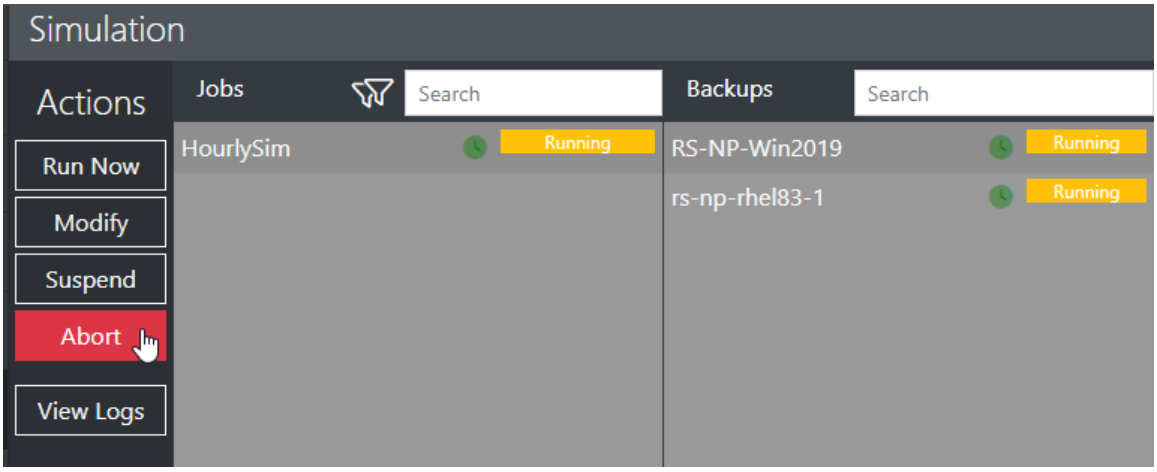
You will also see an Alerts of this form:



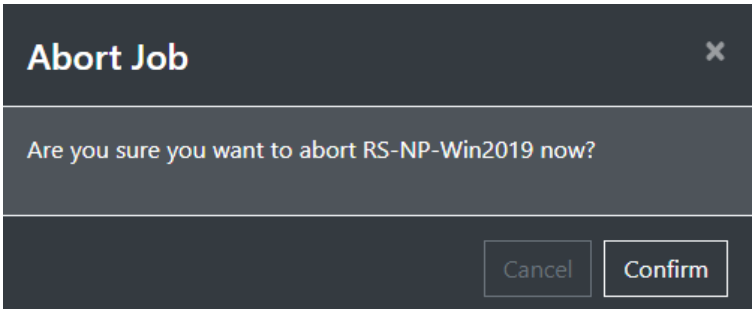
Note: Scheduled simulations for the aborted job and its associated machines will continue to run at the next scheduled time. New target VMs will be created.

4.2.7.2 Individual Machine

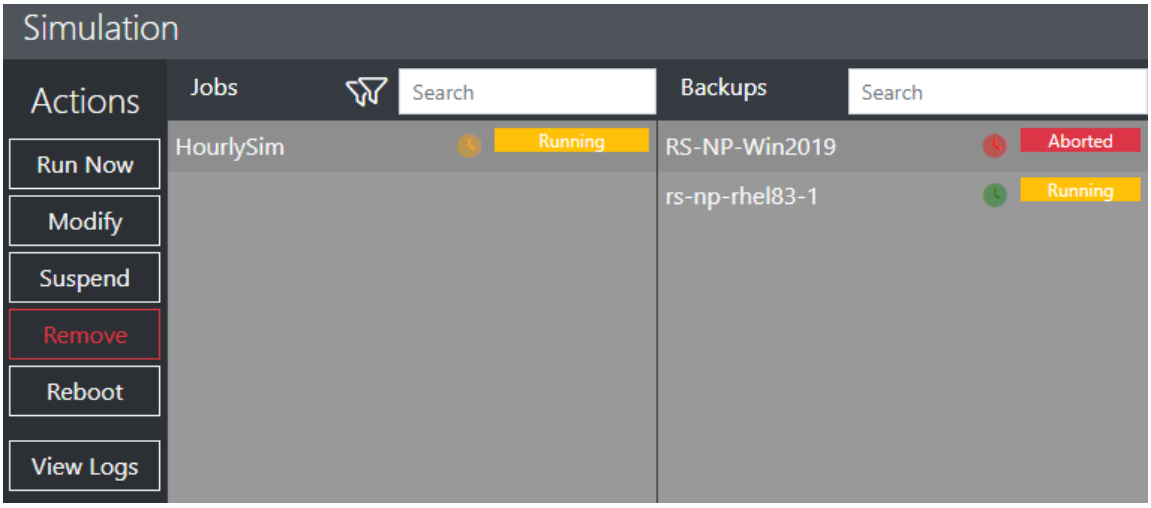
To abort the simulation for a single machine from a job click on the machine and then the Abort button. Note the machine must be in the ***Running*** state for this to work.



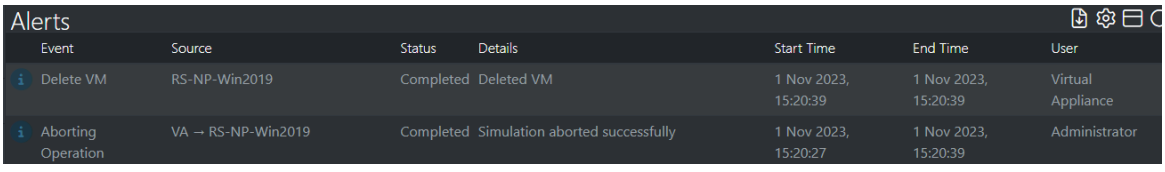
You will then be prompted to confirm the abort action.



Click Confirm to proceed. The simulation for the selected machine will then be stopped and the associated target VM will be deleted. If other machines are associated with the job they will continue to run simulations normally.



You will also see an Alerts of this form:



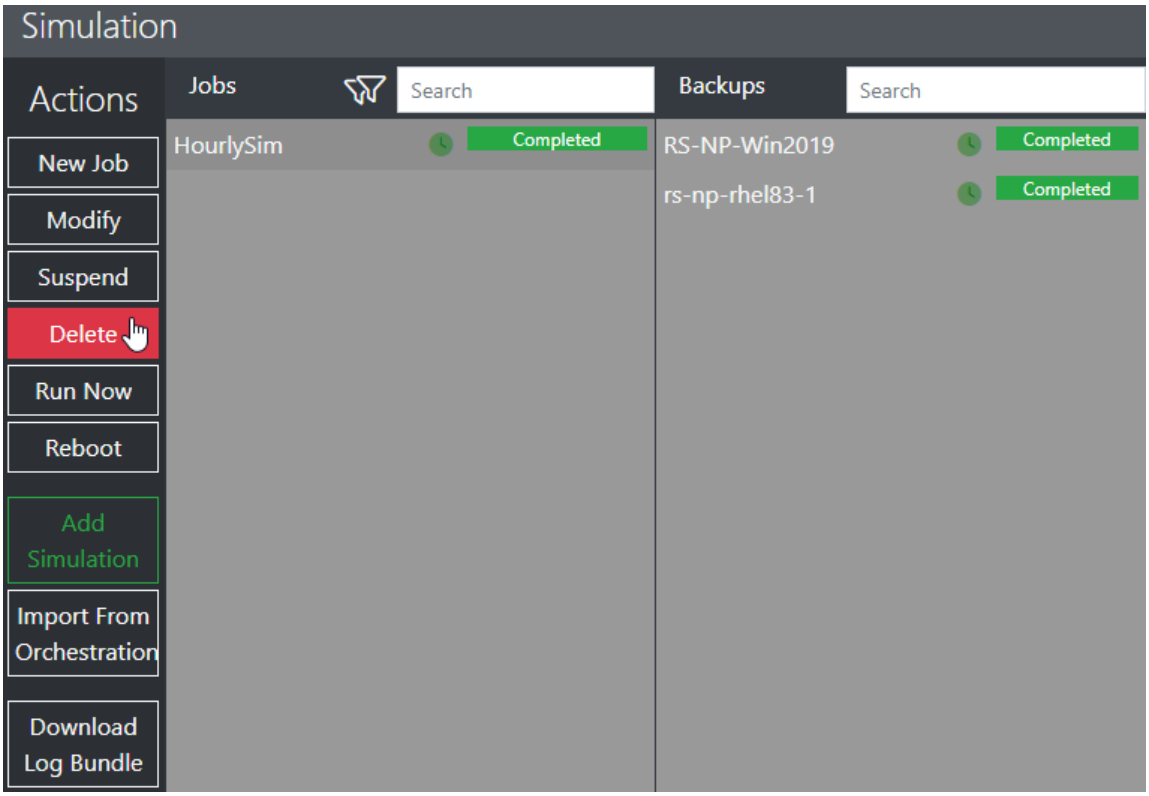
Note: Scheduled simulations for the aborted machine will continue to run at the next scheduled time. A new target VM will be created.

4.2.8 Delete

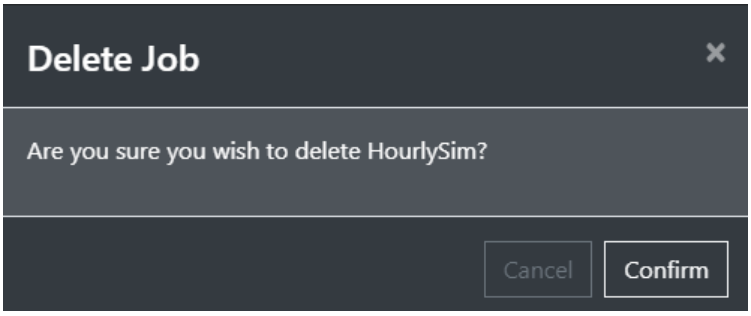
When you no longer need to run simulations for either a complete job or an individual machine it can be removed from the Cristie VA.

4.2.8.1 Whole Job

To delete a whole job (note all machines in the job will be be deleted), click on the job and then the Delete button.



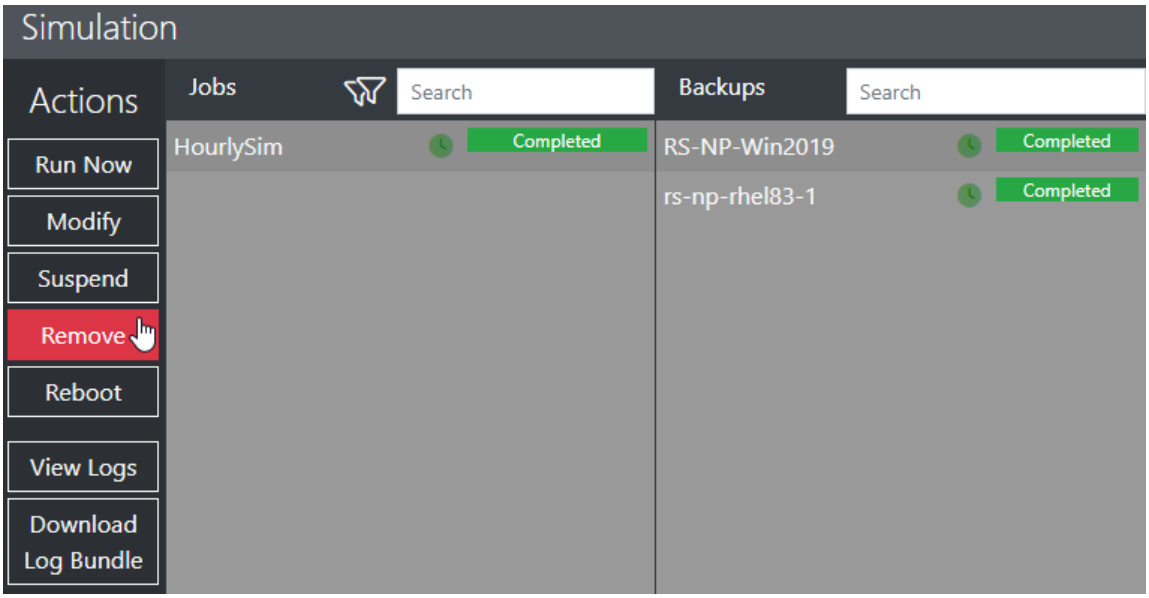
You will then be prompted to confirm the deletion.



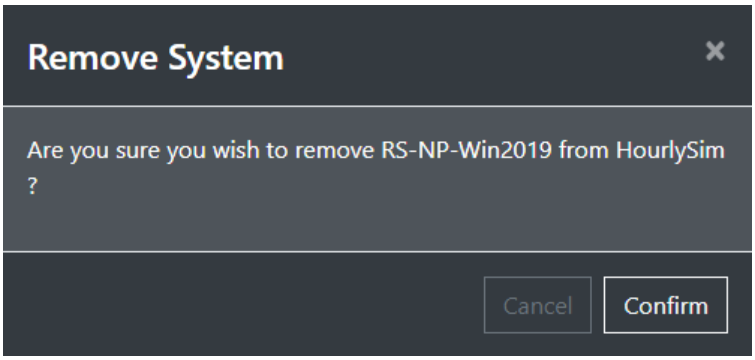
Click Confirm to proceed. The job and its associated machines will then be deleted.

4.2.8.2 Individual Machine

To delete a single machine from a job click on the machine and then the Remove button.



You will then be prompted to confirm the deletion.



Click Confirm to proceed. The machine will then be removed from the job. If other machines are associated with the job they will continue to run simulations normally.

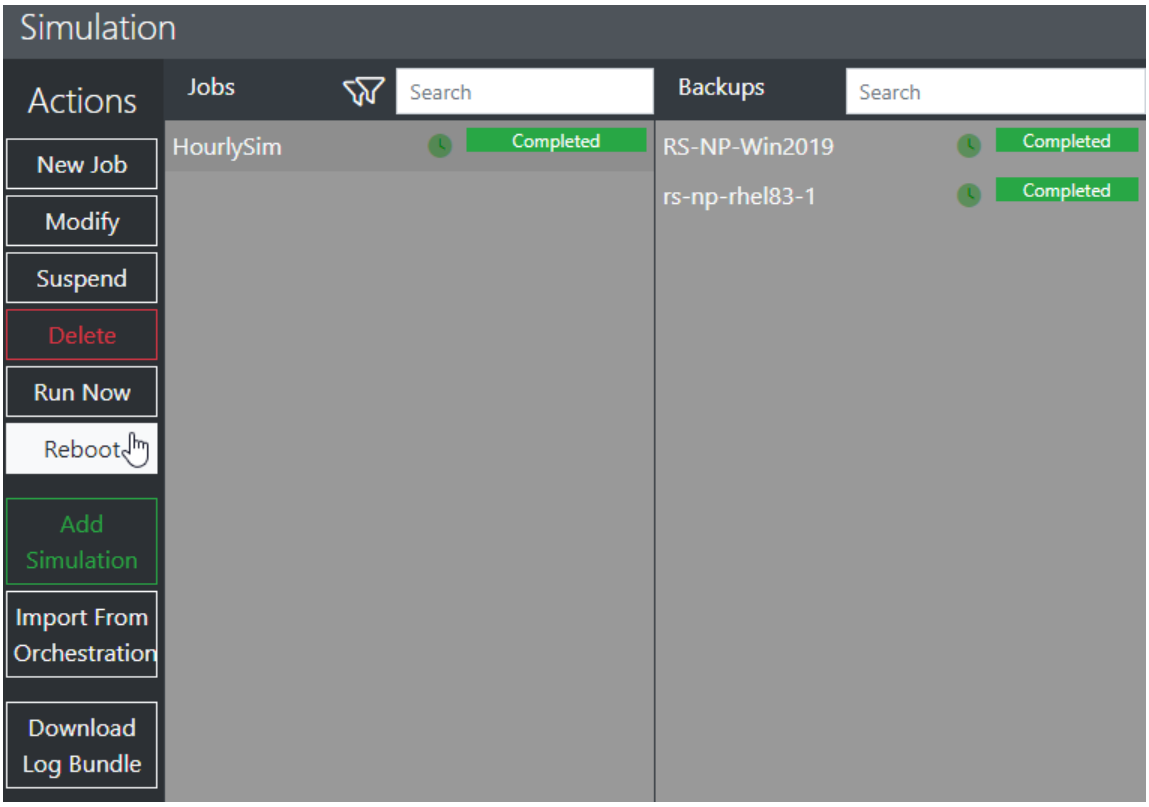
4.2.9 Reboot

After a simulation has completed either the job or a selected machine in the job can be booted using the Reboot action.

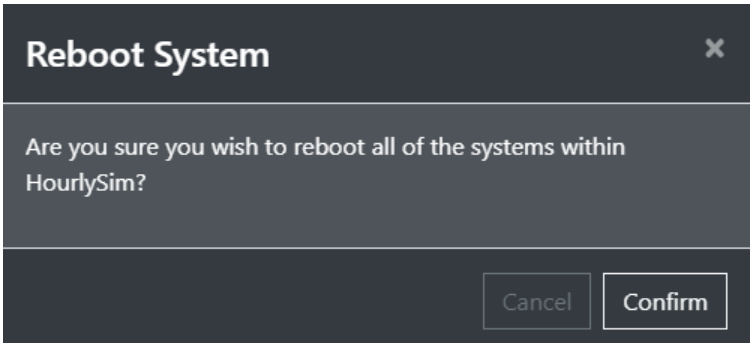
> ***Note: If you reboot the target and still have the original source machine active there could be either a hostname or a network IP address conflict when the target boots.***

4.2.9.1 Whole Job

To boot all machines in a job, click on the job and then the Reboot button.



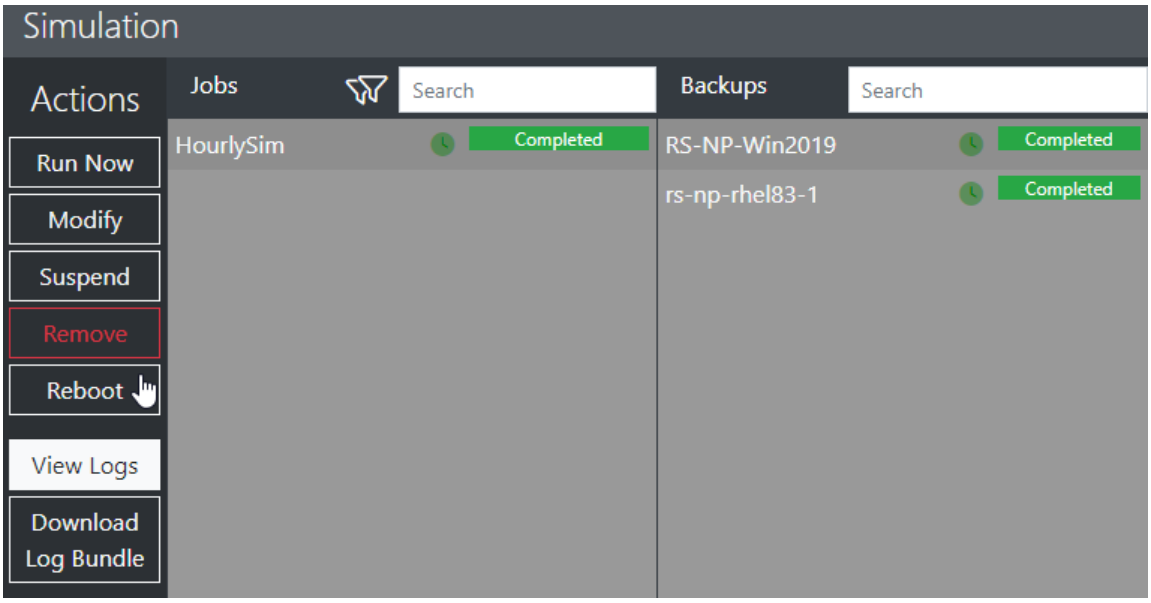
You will then be prompted to confirm the boot operation.



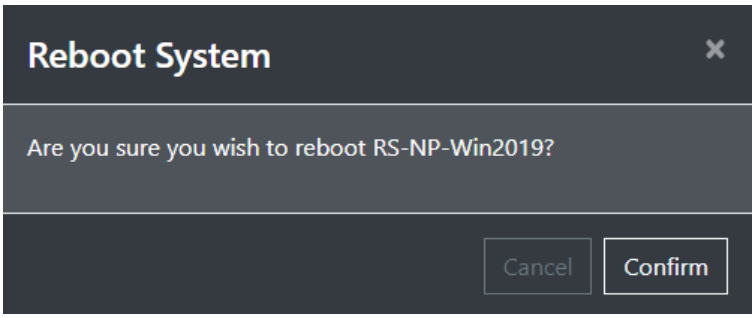
Click Confirm to proceed. The job will be suspended and all its associated machines will then be booted.

4.2.9.2 Individual Machine

To boot a single machine from a job click on the machine and then the Reboot button.



You will then be prompted to confirm the boot operation.

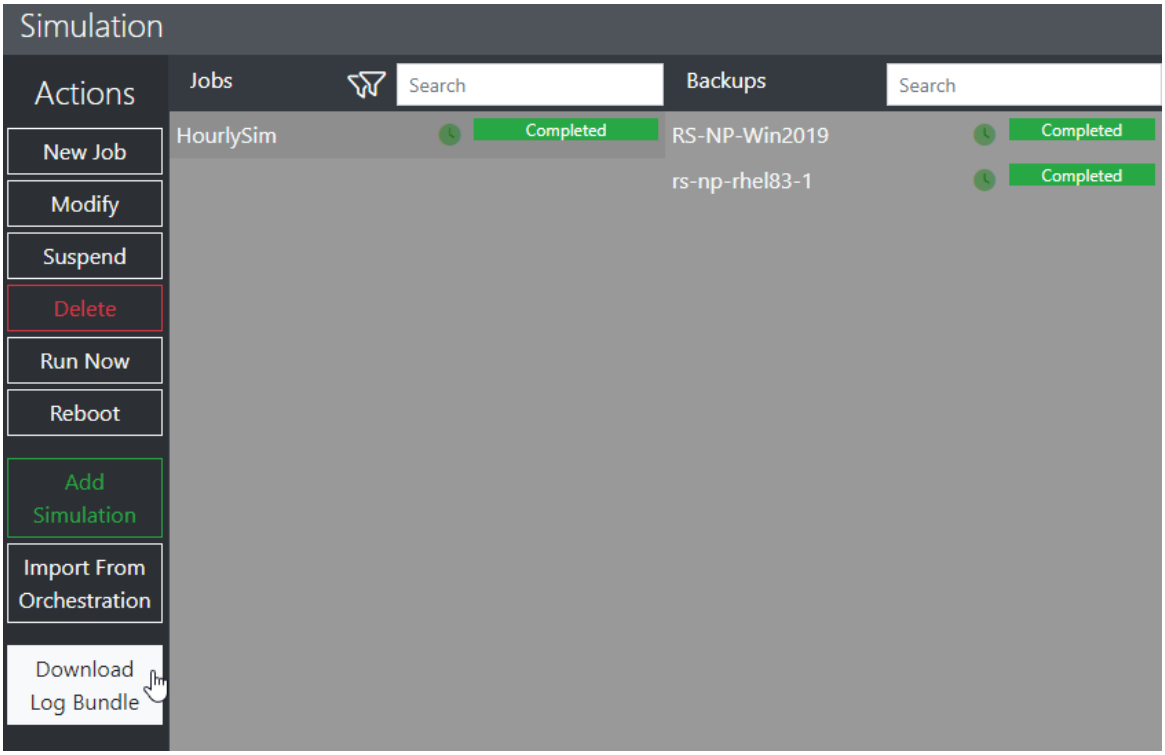


Click Confirm to proceed. The machine will then be booted and suspended from the job. If other machines are associated with the job they will continue to run simulations normally.

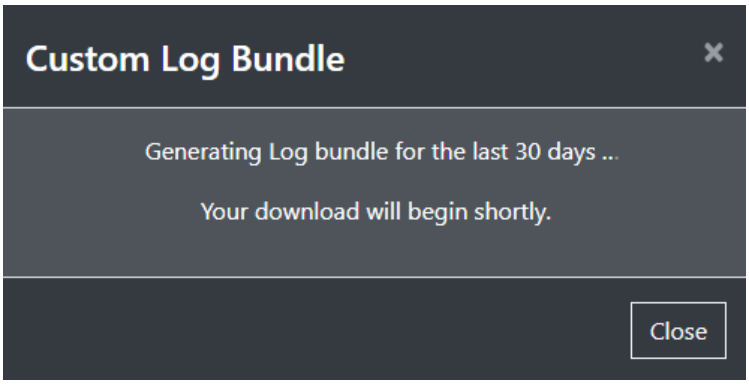
4.2.10 Download Log Bundle

Select Download Log Bundle to generate a complete set of entire Cristie VA logs in ZIP file format. By default this bundle will contain log files for the last 30 days. However this can be changed in **Options/Advanced Settings**.

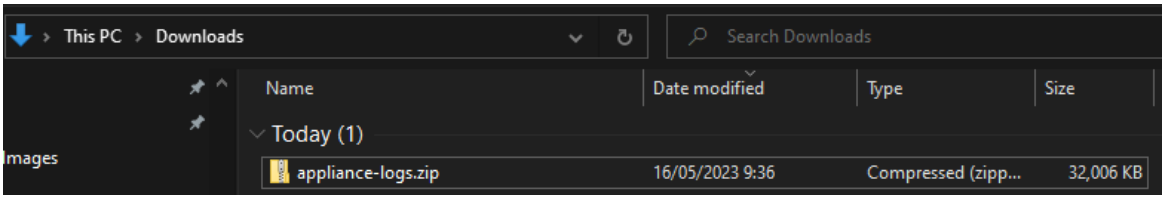
To generate a log bundle for all machines in a job, click on the job and then the Download Log Bundle button.



Once selected the bundle will be generated but may take a little time if the logs are large:



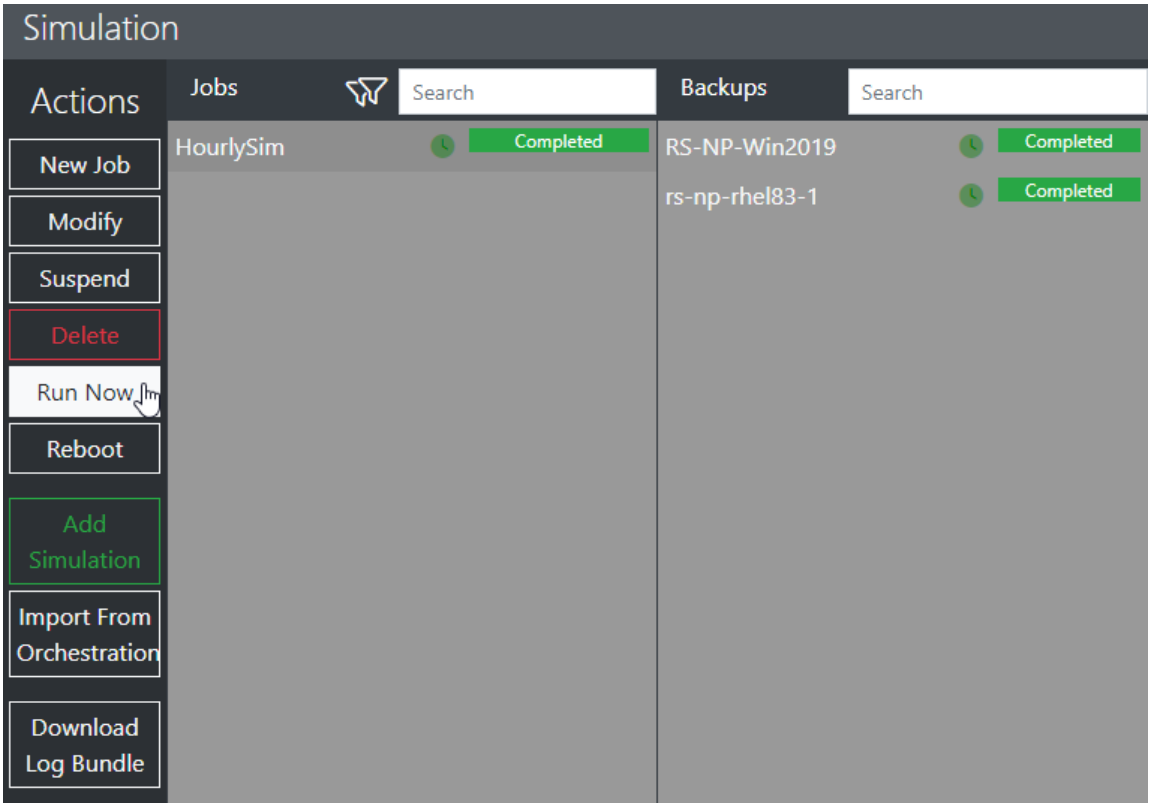
Once created the ZIP file will be downloaded to your configured browser downloads folder.



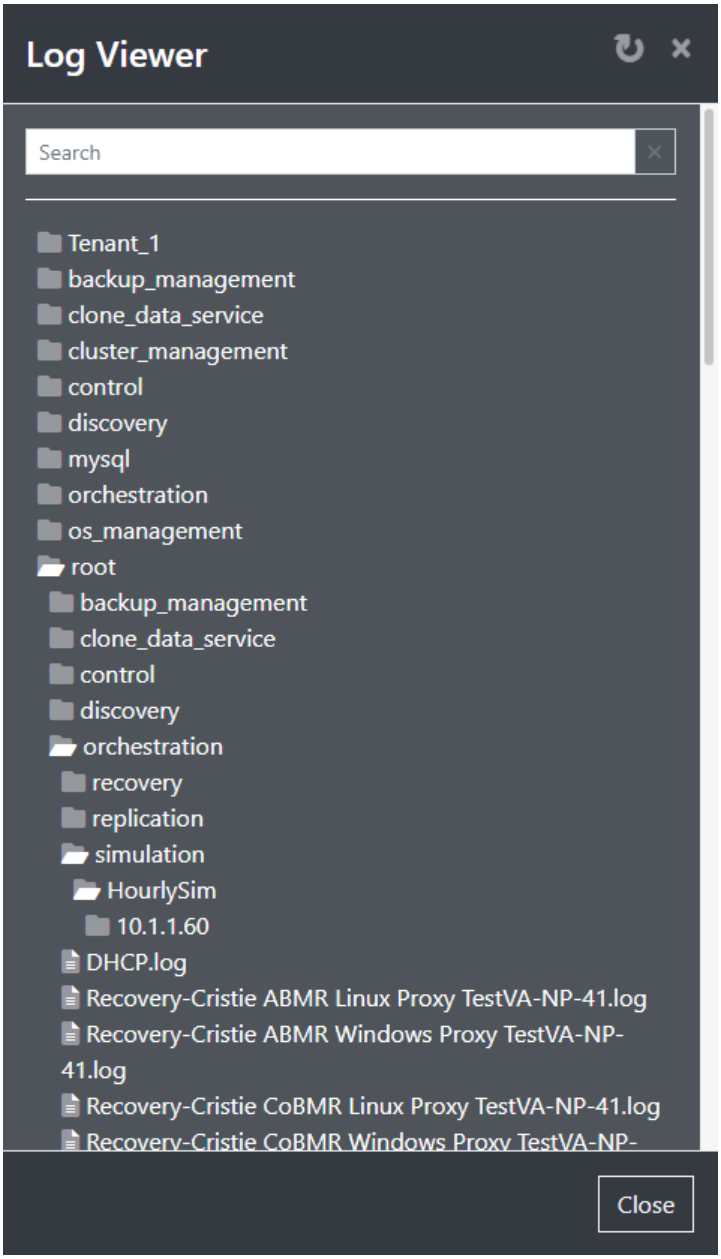
This file may be needed by Cristie Support when trying to diagnose any replication issues.

4.2.11 View Logs

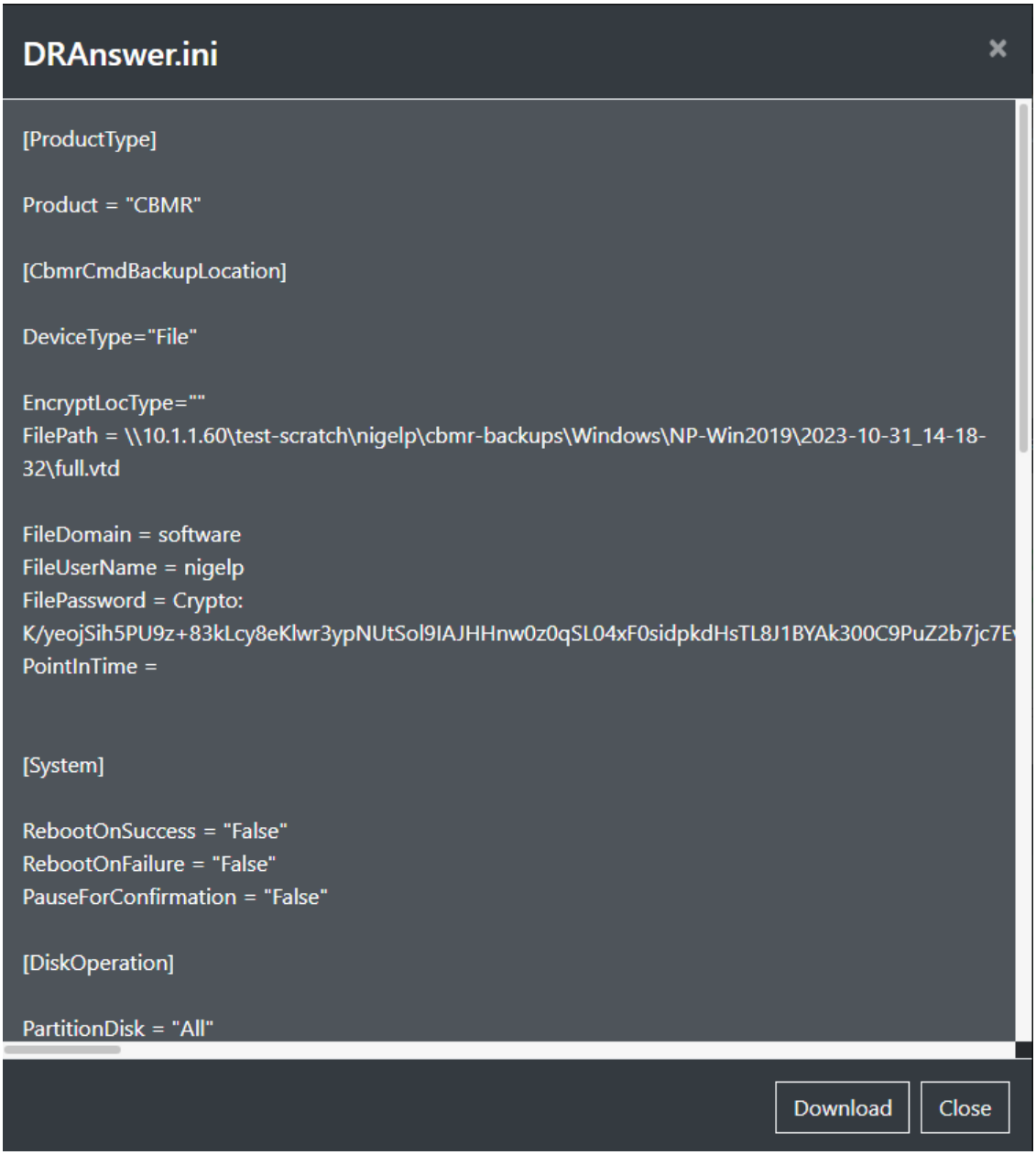
This feature applies only to machines - not jobs.
To download logs corresponding to a simulation run this highlight the individual machine and click View Logs.



This will display a View Logs dialogue open at the files corresponding to the selected simulation machine:



At this point you can click a particular log file to view:



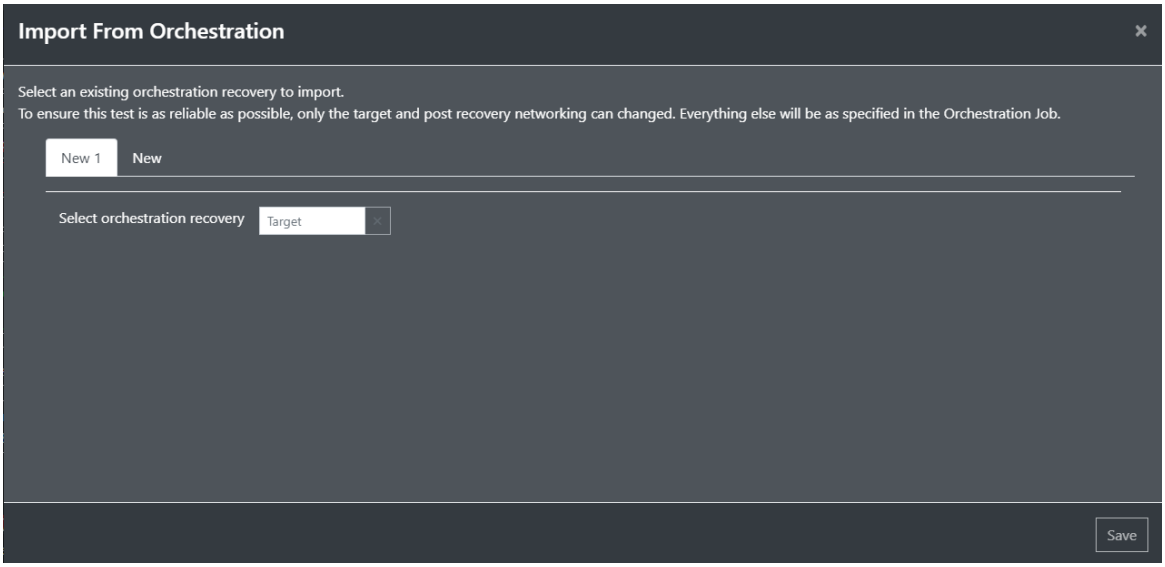
This file can also be downloaded to your browser's default download folder.

Click Close to exit.

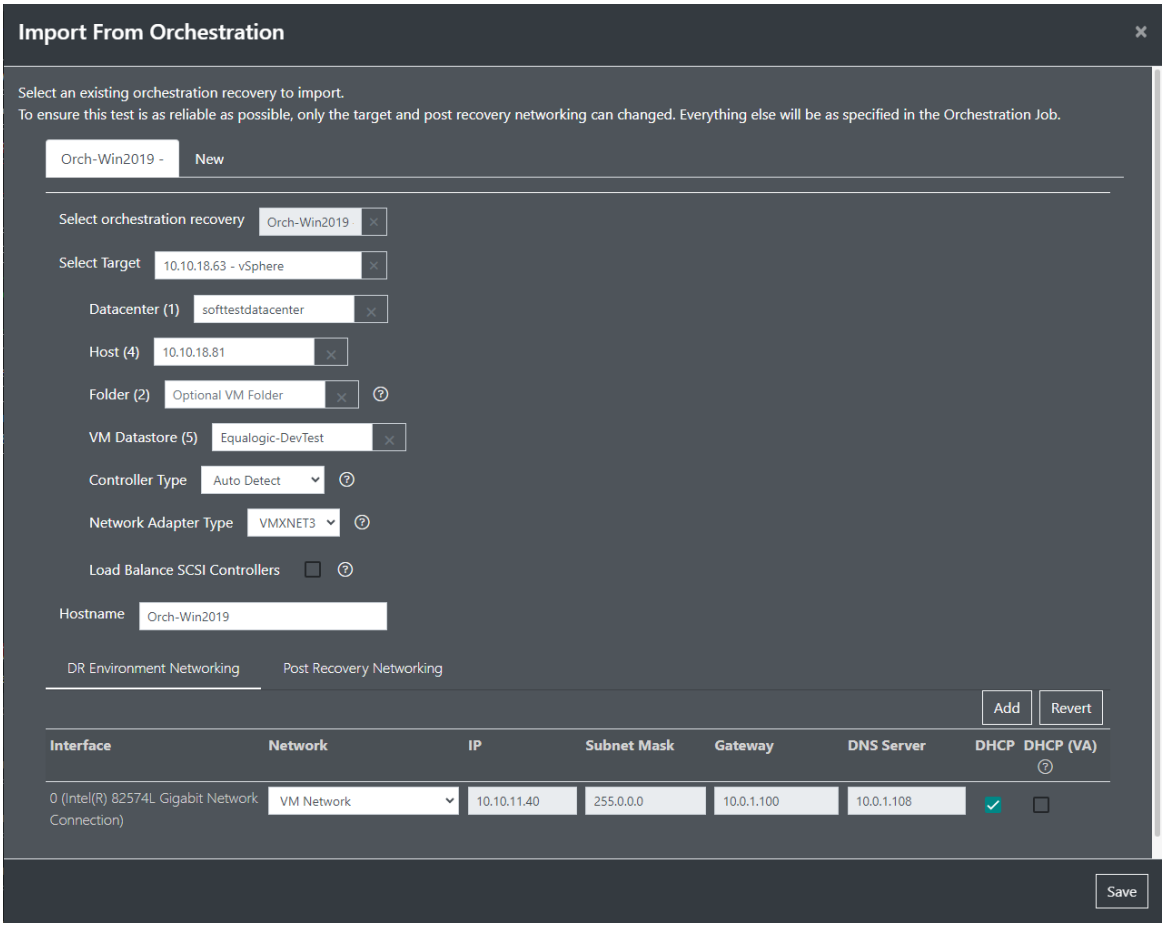
4.2.12 Import from Orchestration

You may import an existing recovery task from an Orchestration job as a new machine into an existing Recovery job .

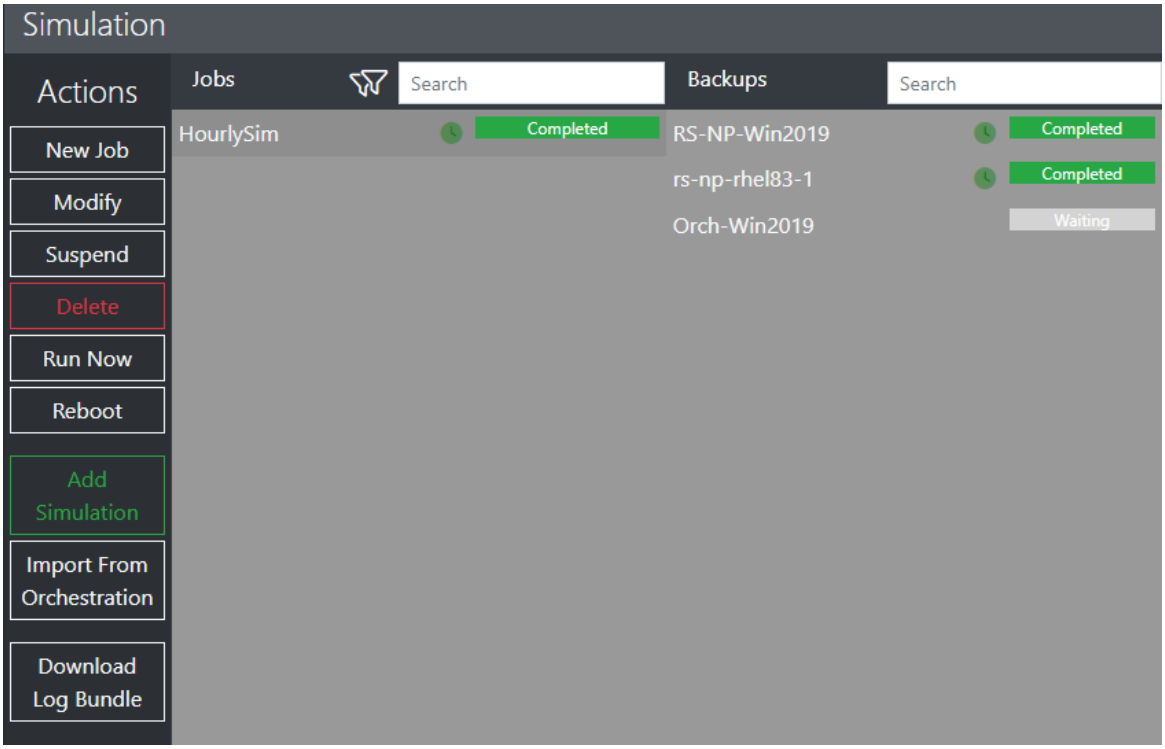
To do this select an existing Recovery job and then click Import From Orchestration. This brings up a dialogue where you can select the recovery task from the Orchestration.



Select the recovery task from the drop-down list and then configure the recovery parameters:



Finally click Save to save the recovery. The machine will then be added to the Recovery job:



Note: Only the target and post recovery networking can be changed for the new recovery. Everything else remains as configured in the source Orchestration task.

4.3 DHCP Not Available

By default new BMR recovery or replication target VMs are created with the assumption that DHCP is available in the network. Where DHCP is not available in a customer network static IPs must be used instead throughout the recovery/replication sequence.

In this case recovery requires a different approach and can be performed by creating a Custom BMR DR/Replication ISO and selecting this during a standard Recover/Simulation operation.

4.3.1 Use a Custom ISO with Pre-Defined Network Configuration

Use this option to create a custom ISO with a pre-defined network configuration including a static IP address. When you use this ISO no manual network configuration is required post-boot.

There are 3 steps required to create and use a custom ISO.

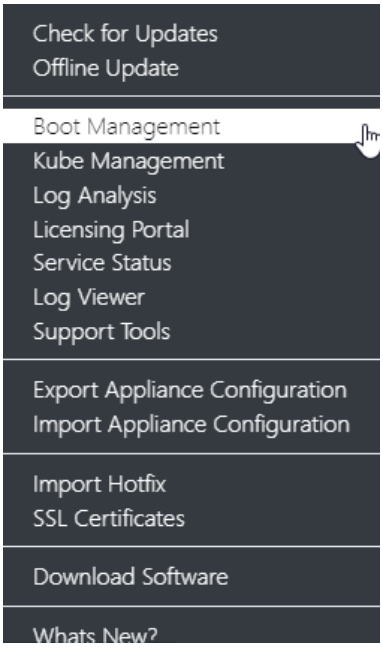
1. ***Create a custom ISO boot image for the recovery.***
2. ***Run a Hypervisor refresh to pick up the new custom ISO image.***
3. ***Add a new recovery (Recover or Simulation job) and select the custom ISO image for the recovery.***

These steps are now discussed in further detail. The Cristie product CBMR for Windows is used as an example.

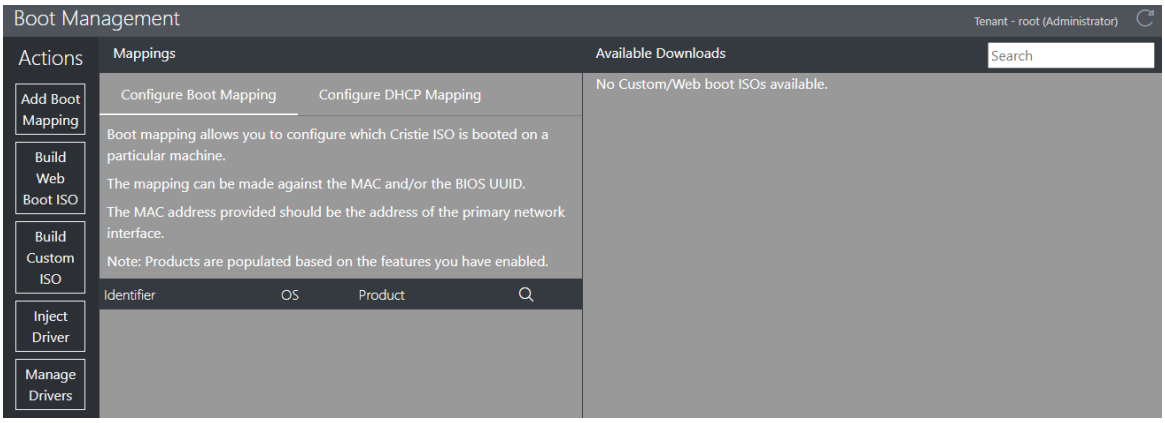
4.3.1.1 Create a Custom ISO

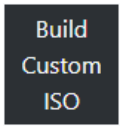
To create a custom BMR recovery or custom replication ISO for use in non-DHCP environments follow these instructions.

To start firstly open the Cristie VA Dashboard, and then navigate to **Tools**  . You will then see this dialogue.

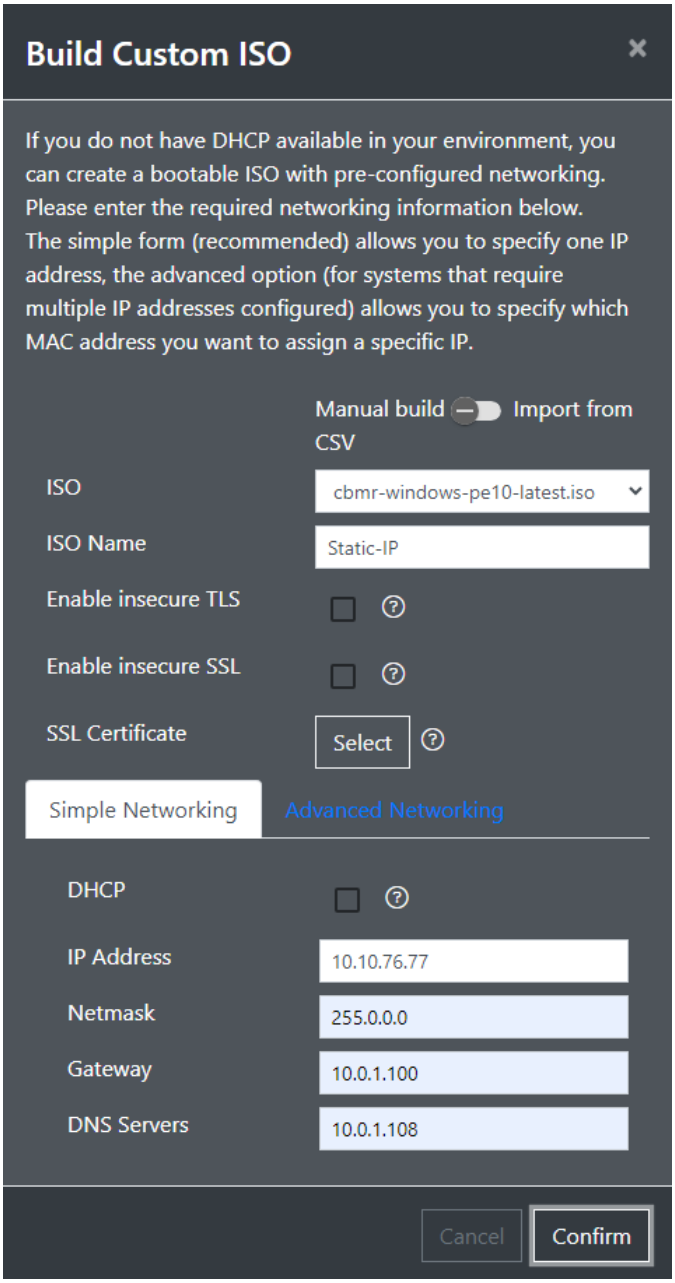


Click **Boot Management** and you will see this:



Now click the ***Configure Boot Mapping*** tab and then click the 

option. This will display a new dialogue where you can provide a static network configuration for your custom recovery/ replication ISO.



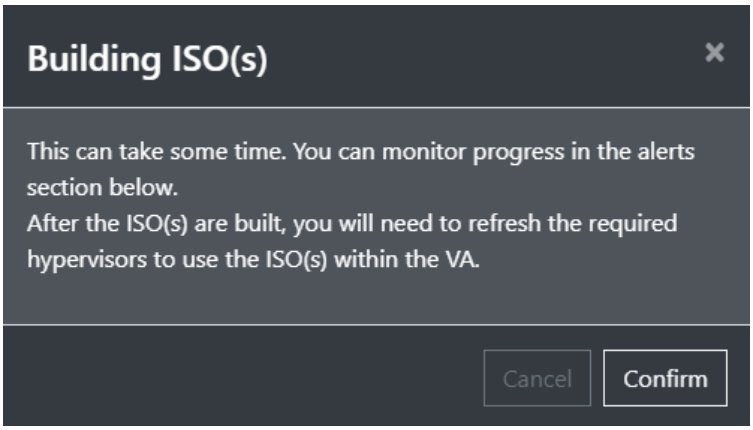
These are the fields you will need to set for static IP use:

ISO	Select an appropriate Cristie BMR or replication ISO name from the drop-down list. In this example CBMR is selected.
ISO Name	Give the ISO a meaningful name.
Enable insecure TLS	By default TLS 1.2+ is enabled for the management service. If your environment requires TLS 1.0 or 1.1 select this option (not recommended).
Enable insecure SSL	By default TLS 1.2+ is enabled for the management service. If your environment requires SSL v2 or v3

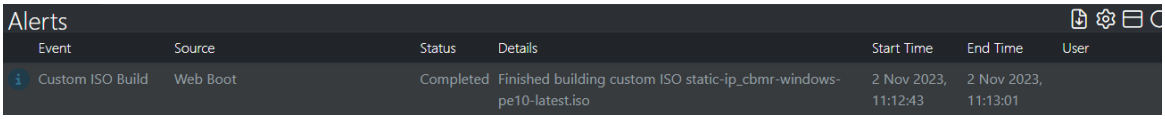
	select this option (not recommended).
SSL Certificate	By default the management service will use a self-signed certificate. If you wish to use your own certificate add it here.
IP Address	Provide the static IP address you wish to give the ISO when booted.
Netmask	Provide a suitable network mask.
Gateway	Provide a suitable gateway IP.
DNS Servers	Provide a DNS server IP.

Select the ***Simple Networking*** tab to enter basic IP details or select ***Advanced Networking*** to add a specific MAC address.

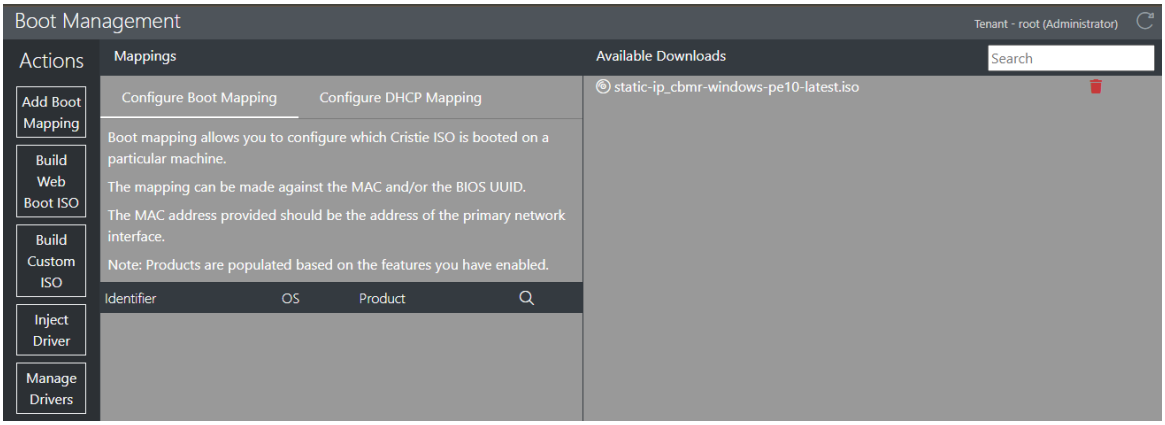
Now click Confirm to generate the ISO. You will see a confirmation pop-up like this:



Please note the warning in the dialogue. Click Confirm for the final time and the ISO will be created with the configuration specified. When the ISO has been created you will see this alert:



The ISO file is stored in the default VM datastore for the hypervisor chosen. It will however be listed for use when you set up a new host recovery. The new ISO will also be listed on the Boot Management dialogue as an available ISO. The ISO can also be deleted from this dialogue when it is no longer of use.

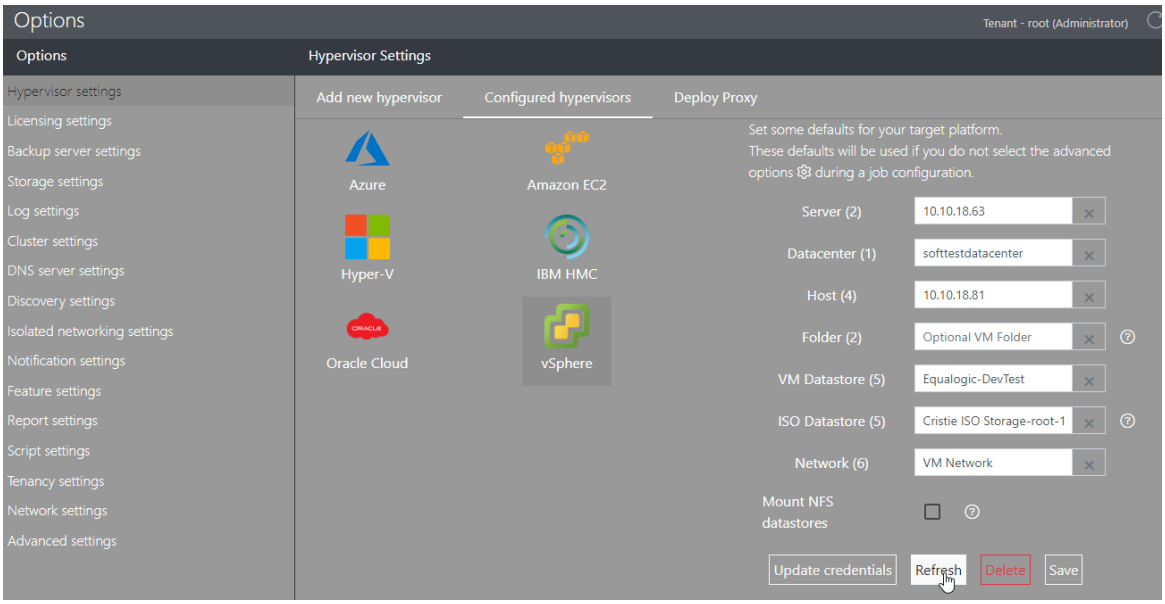


4.3.1.2 Running a Hypervisor Refresh

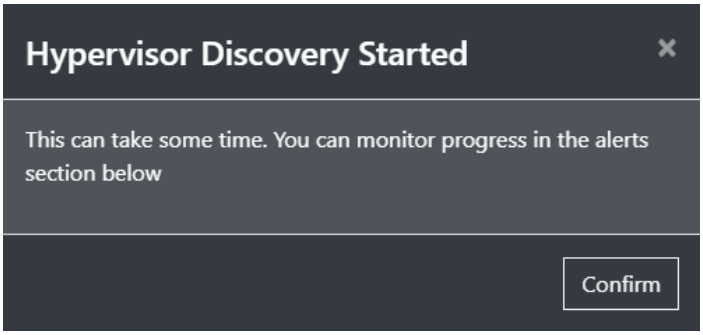
To make the newly built custom ISO visible for recoveries you must first run a **refresh** of the Hypervisor.

To do this select **Options** from the main VA dashboard and then **Hypervisor settings**. Next select the ***Configured hypervisors*** tab and finally click the Hypervisor that will contain your recovered target VM.

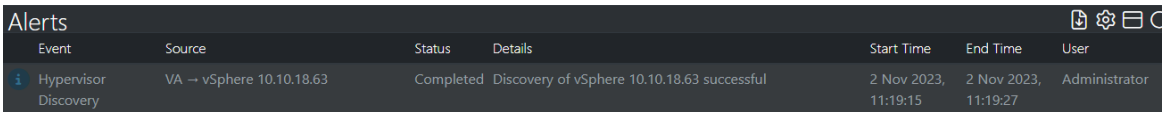
Click the Refresh button to start the hypervisor refresh.



You will then see a confirmation message displayed indicating you should monitor the Alerts section to determine when the refresh is complete.



You will see this alert when the refresh is complete.



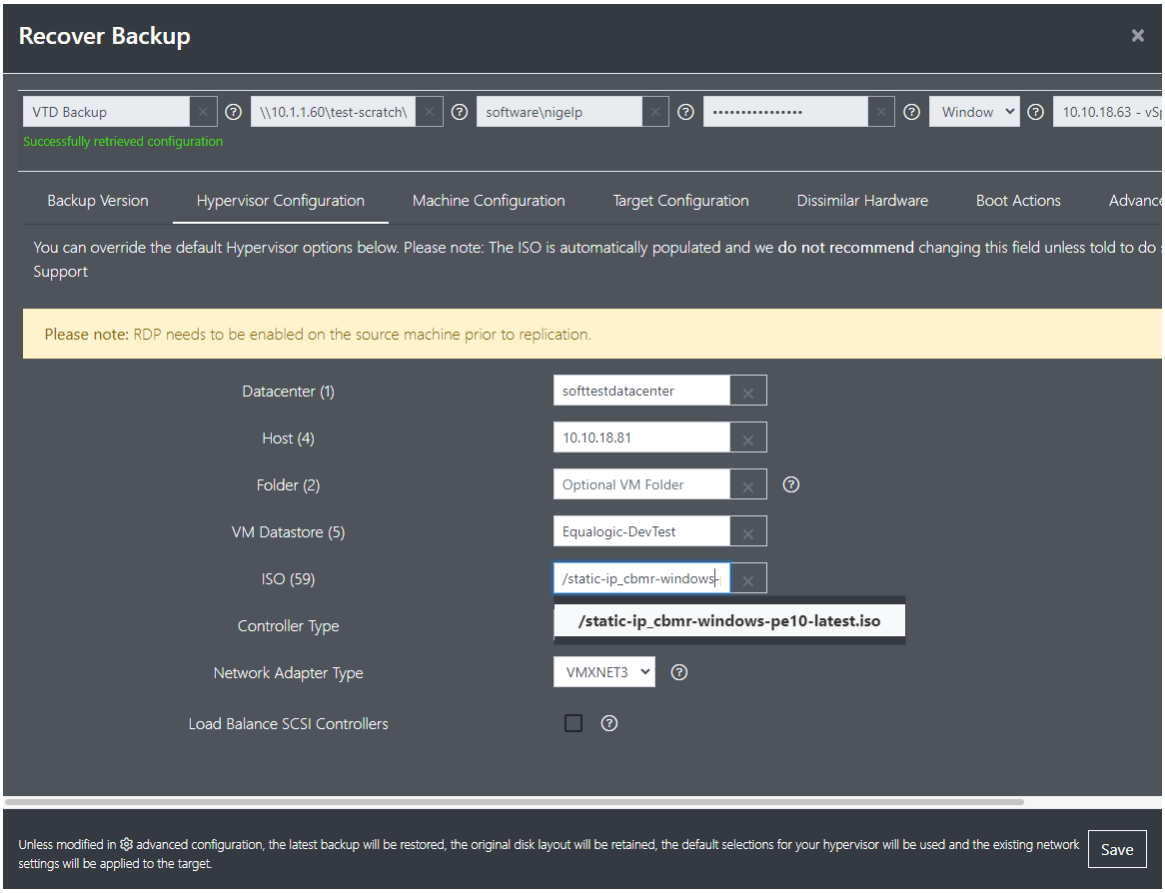
4.3.1.3 Selecting a Custom ISO for Recoveries

To use the custom ISO for recoveries you should select it when setting up a new **Recover** or **Simulation** job.

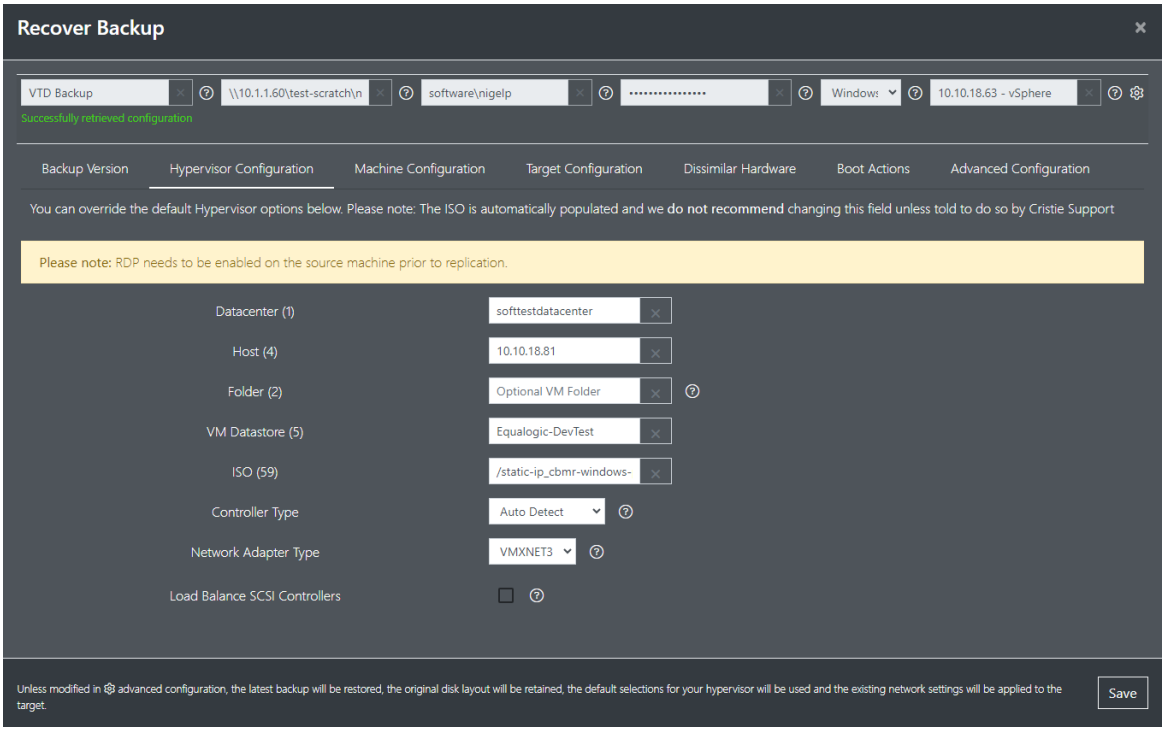
> ***Note: Ensure you have run a target Hypervisor refresh otherwise the custom ISO will not be visible.***

Recover

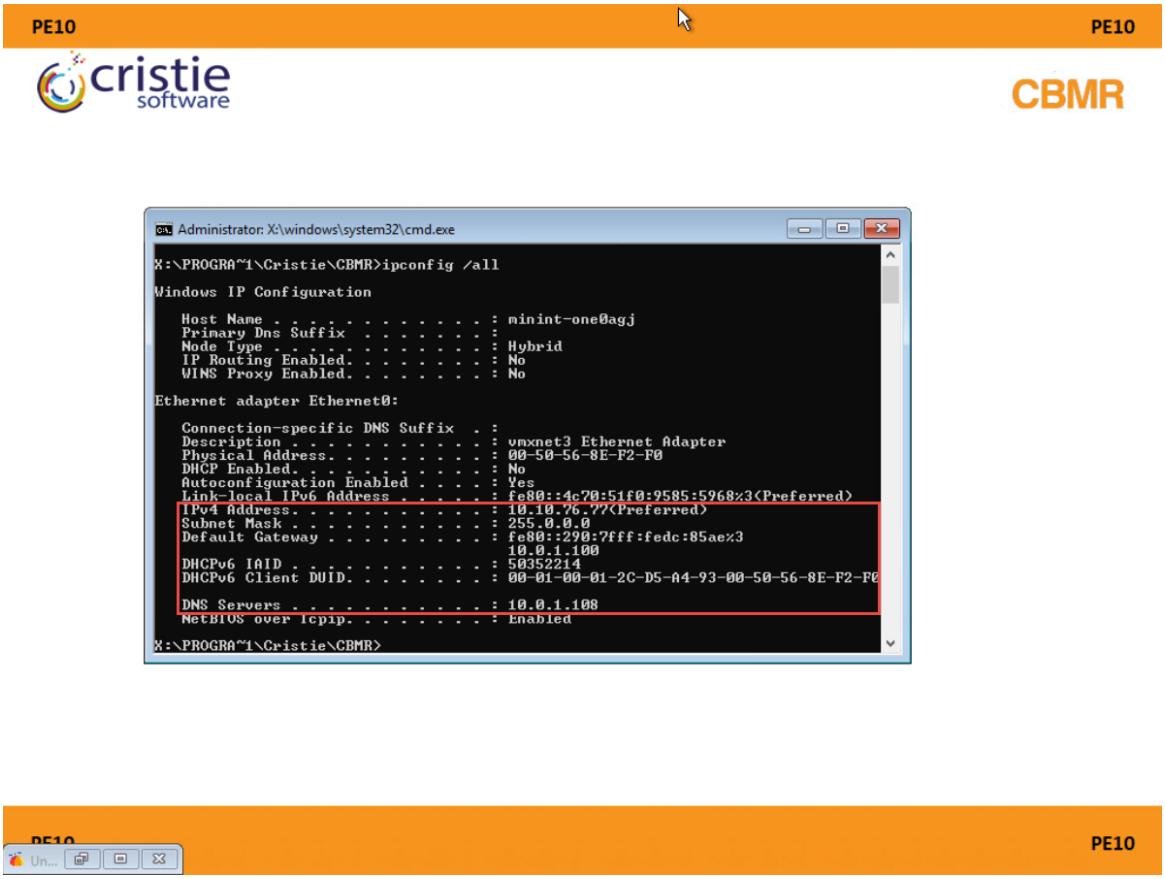
For a new Recover operation select the new ISO in the Hypervisor Configuration tab of recovery setup. In the example below the CBMR custom ISO created earlier is being selected in the ISO field drop-down.



When complete the Hypervisor Configuration should look like this:

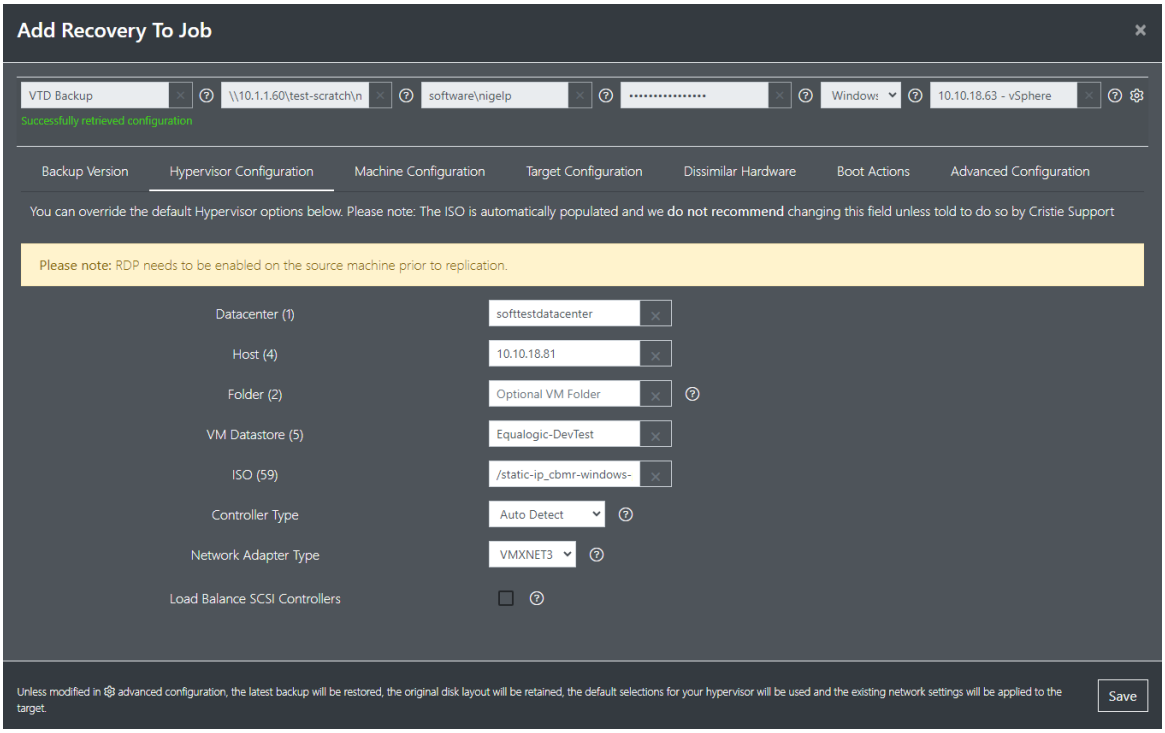


Click Save to save the settings. Now when the recovery runs the target will boot with the custom ISO configured to use the given static IP, mask, gateway and DNS.



Simulation

The procedure for using a custom ISO in a **Simulation** job is very similar. Navigate to the **Add Recovery To Job** dialogue and select the new ISO in the ***ISO*** field. See the example below.



Click Save to save the settings. Now when the simulation runs the target will boot with the custom ISO configured to use the given static IP, mask, gateway and DNS.