



VMware OS Optimization Tool User Guide

Version 1.1

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VMware, Inc.
3401 Hillview Ave
Palo Alto, CA 94304
www.vmware.com

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1. About this guide

This document guides you through analyzing and optimizing the Windows virtual machine image using the VMware OS optimization tool. This guide helps the administrators to analyze the parameters of registry, services and schedules and to optimize using the Optimization tool efficiently.

1.1 Software Version

This document version applies to VMware OS Optimization Tool version 1.1.

2. Introduction

The VMware OS Optimization tool (Optimization tool) helps to optimize the operating system and provide users with more optimized systems. The optimization tool adds value by increasing the system performance. Windows system has set of services that are enabled by default; the tool optimizes the system to increase performance by reducing the unnecessary processor usage, services, memory usage and the network usage.

2.1 VMware OS Optimization Tool Overview

The VMware OS Optimization tool is a graphical user interface based tool, which helps you to analyze the different system components like registry entries, services, and schedules. It displays the status of these components in the graphical form, which helps you to understand the utilization of the system and then optimize it for better performance. You can design a new template from the master template or customize the template to analyze and optimize the operating system. The optimization tool helps you to perform optimization for a particular step on the specific operating system.

You can perform following actions using the VMware OS Optimization tool:

- Analysing the operating system.
- Optimizing the operating system.
- Viewing history of Optimization and roll back.
- Designing Template.

2.2 Supported Operating System

- Windows 7
- Windows Server 2008 R2
- Windows Server 2012
- Windows 8
- Windows XP

3. Using VMware OS Optimization Tool

You can view the [System Information](#) and analyze the parameters of components namely registry, services and schedules. After analyzing the system, the analysis result is displayed based on the step category as mandatory, optional and recommended. Based on this analysis, you can perform optimization for all the steps or selected steps as required. The optimization tool helps you to filter the steps based on the operating system. In the template few of the step/steps may contain cross icon which indicates that the step is not applicable for the current operating system to perform Analyze.

Note You need to run the script VMwareOptimization_Script for Windows XP prior to VMwareOSOptimizationTool.exe

3.1 Analyzing System

You can analyze the registry entries, services, and scheduled tasks. The output after analyzing the operating system is a detailed stepwise summary of the current state of the system. The [Analysis Summary](#) displays the output in a graphical chart. The output Analysis Status is displayed in the grid as a color code which helps you to identify the real time result of the system.

3.1.1 System Information

You can view various system information on which VMware OS Optimization tool is currently running.

The following table describes current system information.

Table 1. System Information

Screen Item	Description
Operating System	Displays the operating system where VMware OS Optimizations tool is running.
Version	Displays the operating system version.
System Name	Displays the system name.
System Type	Displays the type of the system. Example: 32 bit, 64 bit.
User Name	Displays the current logged on user.
Windows Directory	Displays the windows directory.
System Directory	Displays the system directory.
Processor	Displays the processor of the system.
Install Physical Memory (RAM)	Displays the install physical memory.
Locale	Displays the locale of operating system.

To analyze the parameters of operating system:

1. Click Analyze tab.
2. Select Template Name from the drop down box.

3. Click Analyze.

The analysis result is displayed in the right grid view.

The following table displays analysis output.

Table 2. Output of Analyzing the Operating System

Screen Item	Description
Groups	Displays the groups in the template.
Steps	Displays the steps performed for analyzing.
Description	Displays the description of the step.
Expected Result	Displays the expected result of the step.
Actual Result	Displays the actual result collected from the system.
Analysis Status	Displays the status of the analysis. The analysis status displays red, orange, yellow and green color. For more details see, Analysis Status .

3.1.2 Analysis Summary

The analysis summary is displayed in the form of a graphical bar chart. The graphical chart displays the number of steps that are optimized and un-optimized based on the following step types:

- Mandatory
- Optional
- Recommended

The Orange color in the graphical chart represents the un-optimized status and the Blue color represents the optimized status.

3.1.3 Analysis Status

The Analysis Status is the comparison between expected and the real time Analyze result. This result is displayed as a color code.

The following table describes the color code, which is displayed after system analysis.

Table 3. Color code details

Screen Item	Description
Green	The Analysis Status displays this color when the Actual Result is equal to the Expected Result for the following Step Types: <ul style="list-style-type: none"> • Mandatory • Optional • Recommended

Red	The Analysis Status displays this color when the Actual Result is not equal to the Expected Result for the mandatory Step Type.
Orange	The Analysis Status displays this color when the Actual Result is not equal to the Expected Result for the optional Step Type.
Yellow	The Analysis Status displays this color when the Actual Result is not equal to the Expected Result for the recommended Step Type.

3.2 Optimizing System

Optimizing the system performs all the actions as per expected values based on the selected template. You can perform optimization for selected or all the steps specified in the template. You can also optimize the defined operating system with a particular step.

Note You must analyze the system prior to optimizing, see, [Analyzing system](#).

To optimize the system:

1. Click Analyze tab.
2. Select the check box to optimize the required steps of the groups.
3. Click Optimize, the result of optimization operation is displayed in the optimize tab.

Note By default all the steps are selected to optimize.

The following table describes the optimization result.

Table 4. Output of optimizing result

Screen Item	Description
Groups	Displays the groups in the template.
Steps	Displays the steps performed for optimizing.
Description	Displays the description of the step.
Expected Result	Displays the expected result of the step.
Actual Result	Displays the actual result.
Analysis Status	Displays the status of the analysis. The analysis status displays red, orange, yellow and green color.
Optimization result	Displays the optimization result. Optimization result is displayed as success, failed, skipped, and unknown.

3.3 Viewing History

You can view the past details of optimization and rollback to the pre-optimization state of the template.

The following table describes the history of optimize and rollback

Table 5. History of optimization and rollback

Screen Item	Description
Template Name	Displays the name of the template for which optimization or rollback is completed.
Description	Displays the description of the template, specified at sequence node.
Machine Name	Displays the name of the machine for which optimization or rollback is completed.
Time	Displays the time when optimization or rollback is completed.
Date	Displays the date when optimization or rollback is completed.
Type	Displays the operation type. Example: Optimization or Rollback.

3.3.1 Rolling back optimization

You can rollback the steps in the selected template.

To rollback the template:

1. Click History tab.
2. Select the check box in the Template Name column for the optimized entry.
3. Click Rollback, and then click OK once the rollback operation is completed.

You can see the completed operations in the History tab.

4. Understanding Template

The master template comprises of collection of groups and steps. You can perform analysis as per the master template, or can design a new template. Each group has its own set of properties, and the names of these groups can be changed. The step also has its own set of properties and action parameters. The properties of all the steps can be changed as required.

4.1 Designing Template

You can design a new template by customizing the master template or existing templates. This can be done by creating a new group, step, or changing the order of the steps from the selected template. You can view and edit the properties of selected steps and the action types. You can execute different steps on different operating systems.

Note To revert all the changes made while designing you can click on the Discard button, however if the changes are saved you cannot revert the changes made.

You can design a new template by either of the following:

- [Creating Group](#)
- [Creating Steps](#)
- [Changing the order of Steps](#)
- [Setting Operating System](#)

4.1.1 Creating Group

You can add, modify and remove a group to design and customize a template.

4.1.1.1. Adding Group

You can add a new group to the existing or new template.

To add a group in the template:

1. Click Templates tab and select the Template Name from the drop down.
2. Select the group and right-click, and then select Add Group.
3. Enter the Name of the group.
4. Enter the Description of the group.
5. Click Current Level or Nested Level check box and click Add.

Note The Current Level adds the group to the same level of the selected group, however the nested level adds the group as a subgroup of the selected group.

4.1.1.2. Modifying Group

To modify or edit the existing group:

1. Click Templates tab and select the Template Name from the drop down.
2. Select the group to modify or edit.
3. Modify the name and description of the group, and click Set.
4. Click Save As to save the changes made.
5. Enter the File name in the Save As dialog box, and click Save.

4.1.1.3. Removing Group

You can remove the existing group from the Master Template, or a newly created group.

To remove a group:

1. Click Templates tab and select the Template Name from the drop down.
2. Select the group to be removed and click Remove.
3. Click Save As and enter the name of the template in the Save As dialog box and then click Save.

4.1.2 Creating Steps

You can create and add new steps, modify and remove steps in the group to design and customize the template.

4.1.2.1. Adding Steps

You can add a new step under a group.

To add a new step:

1. Click Templates tab and select the Template Name from the drop down.
2. Select a group to add a step and right-click, and select Add Step.
3. Enter the following details in Step Details and click Set.
 - Name
 - Description
 - Category
 - Reboot required
 - Operating system
4. Select Action Type as Add Action, Custom Optimization, or Custom Roll back from the drop down list.
5. Enter the following details in Action Parameters for Registry type and click Set, else click Remove to edit the details.
 - Command
 - Keyname
 - Value
 - Type
 - Data

Note If you select the Action Parameters for Service type, Shell Execute or Schtasks type the details you need to enter are as follows.

The Action Parameters for Service type.

- Service Name
- Start Mode

The Action Parameters for Shell Execute type.

- Command

The Action Parameters for SchTasks type.

- Command
- Task Name
- Status

6. Click Add to save the Step Details and the Action Parameters, else click Clear to edit.
7. Click Save As to add the step in the template, else click Reset.
8. Enter the name of the template in the Save As dialog box and then click Save.

The following table describes the fields of Step Details.

Table 6. Properties of step details

Screen Item	Description
Name	Describes the name of the step to identify in the template.
Description	Describes the information of the step.
Category	Describes the category of the step. Example:Mandatory, Optional, Recommended.
Reboot required	Describes if reboot is required for the machine after performing the step.
Operating System	Describes the information of the operating system, on which the step will be executed. To set the operating system, see Setting Operating System .

The following table describes the fields of Action Parameters for Registry type.

Table 7. Action parameters for Registry type

Screen Item	Description
Type	Describes the Registry type of operation to be performed.
Command	Describes the type of command to be executed on the specified type. Following commands are to be defined the registry type: <ul style="list-style-type: none"> • ADD • LOAD • UNLOAD
Key Name	Describes the key name where the registration information from the given file will be loaded.
Value	Describes the value name of the key.

Type	Describes the data type of the value. Following are the supported data types: <ul style="list-style-type: none"> • REG_SZ • REG_BINARY • REG_DWORDREG_QWORD
Data	Describes the data given for the value.

The following table describes the fields of Action Parameters for Service type.

Table 8. Action parameters for Service type

Screen Item	Description
Type	Describes the Service type of operation to be performed. Registry
Service Name	Describes the service name for which action is to be performed.
Start Mode	Describes the expected Startup type of the service. Following are the Startup type for services: <ul style="list-style-type: none"> • Auto • Manual • Disabled

The following table describes the fields of Action Parameters for Shell Execute type.

Table 9. Action parameters for Shell Execute type

Screen Item	Description
Type	Describes the Shell Execute type of operation to be performed.
Command	Describes the command line to be executed.

The following table describes the fields of Action Parameters for SchTasks type.

Table 10. Action parameters for SchTasks type

Screen Item	Description
Type	Describes the SchTasks type of operation to be performed.
Command	Describes the action to be performed for the task. Currently only the Change command is supported.
Task Name	Describes the path of the task.

Status

Following are the supported status values:

- Enabled
 - Disabled
-

4.1.2.2. Modifying Steps

You can modify the step of the selected group in a template.

To modify the step:

1. Click Templates tab and select the Template Name from the drop down.
2. Select the steps for which the property is to be edited.
3. Edit the following Step Details.
 - Name
 - Description
 - Category
 - Reboot required
 - Operating system
4. Edit the Action Type as Add Action, Custom Optimization, or Custom Roll back from the drop down list.
5. Edit the following details in Action Parameters and click Set, else click Remove to edit the details.
 - Type
 - Command
 - Key Name
 - Value
 - Type
 - Data

Note If you select the Action Parameters for Service type, Shell Execute, or Schtasks type, the details you need to enter are as follows.

The Action Parameters for Service type.

- Service Name
- Start Mode

The Action Parameters for Shell Execute type.

- Command

The Action Parameters for SchTasks type.

- Command
- Task Name
- Status

6. Click Update, else click Discard to undo all the changes.
7. Enter the name of the template in the Save As dialog box and then click Save.

4.1.2.3. Removing Steps

You can design a new template by removing the steps from the master template.

To remove steps from the template:

1. Click Templates tab, and select the Template Name from the drop down.
2. Select the steps to be removed from the selected group and click Remove.
3. Click Save As.
4. Enter the name of the template in the Save As dialog box and then click Save.

4.1.3 Changing Order of Steps

You can design a new template by changing the order of the steps from the template.

To change order of the steps:

1. Click Templates tab and select the Template Name from the drop down.
2. Select the steps to be moved from the selected group and click Up or Down.
3. Click Save As.
4. Enter the name of the template in the Save As dialog box and then click Save.

Note If the changes are not saved, you can click on the Reset button to revert all the changes made.

4.1.4 Setting Operating System

Setting operating system helps you to execute a step from the template for the specific operating system. You can include or exclude an operating system for the step to be executed.

4.1.4.1. Including Operating System to Optimize

You can include the list of [Supported Operating System](#).

To add a new Operating System for optimizing:

1. Click Templates tab and select the Template Name from the drop down.
2. Click on the step of the required group to add the operating system.
3. Click the Pencil icon against the Operating System field in the Step Details section.
4. Select the Operating system from the List of available Operating System.
5. Select Include from the List Selection, and click > to include the Operating System in the Include List and click Ok.

Note You can exclude the OS on which you do not want to perform the step, to exclude an operating system see, [Excluding Operating system to Optimize](#).

6. Click Set, and then click Update, to update the operating system for the step
7. Click Save As, else click Reset.
8. Enter the template name in the Save As dialog box and click Save.

4.1.4.2. Modifying Operating System to Optimize

You can modify the included or excluded operating system for a particular step.

To modify the operating system:

1. Click Templates tab and select the Template Name from the drop down.
2. Click on the step of the required group to include or exclude the operating system.
3. Click the Pencil Icon against the Operating System in the Step Details section.
4. Select the Operating system from the List of available Operating System to include or exclude for the step.
5. Click Include or exclude from the List Selection and click Ok.
6. Click Set, and then click Update to exclude the operating system from the step.
7. Click Save As, else click Reset.
8. Enter the template name in the Save As dialog box and click Save.

4.1.4.3. Excluding Operating system to Optimize

You can exclude the list of Operating System, not to optimize.

1. Click Templates tab and select the Template Name from the drop down.
2. Click on the step of the required group to exclude the operating system.
3. Click the Pencil Icon against the Operating System in the Step Details section.
4. Select the Operating system from the List of available Operating System.
5. Select Exclude from the List Selection, click > to exclude the Operating System in the Exclude list and click Ok.
6. Click Set, and then click Update to exclude the operating system from the step.
7. Click Save As, else click Reset.
8. Enter the template name in the Save As dialog box and click Save.

