

Addressing the Remediation Issue with a Software or Patch Policy Against a Large Number of Servers

Action: Remove or reduce excessive data retained during remediation



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Issue that Requires Attention

When a large software policy or a patch policy is remediated against numerous servers (e.g., RHEL6 x86 64 RHN channel policy), a great deal of data is generated, creating a serious scalability bottleneck.

This solution applies only to the HP SA 9.15 software release.

Issue Solution and Limitations

HP SA reduced the amount of remediation job data by:

- Compressing the session results and other related data. The compression level is configured by the *spin.session_results.compression_level* parameter.

This parameter is defined in `/etc/opt/opsware/spin/spin.args`, and it defaults to 2. This value provides the best compromise between a good compression rate and resource consumption. If you change this value, the Spin must be restarted.

Note: Only the data for remediation jobs (including install/uninstall software jobs) is compressed.

- Introducing a new configuration parameter, *way.remediate.retain_analyze_output*, which, when set to 0, writes the informational messages generated by YUM during the analyze phase to log files. This further reduces the size of the session data and the overhead on back-end components and the Java client.
- Removing unnecessary data from the session results.

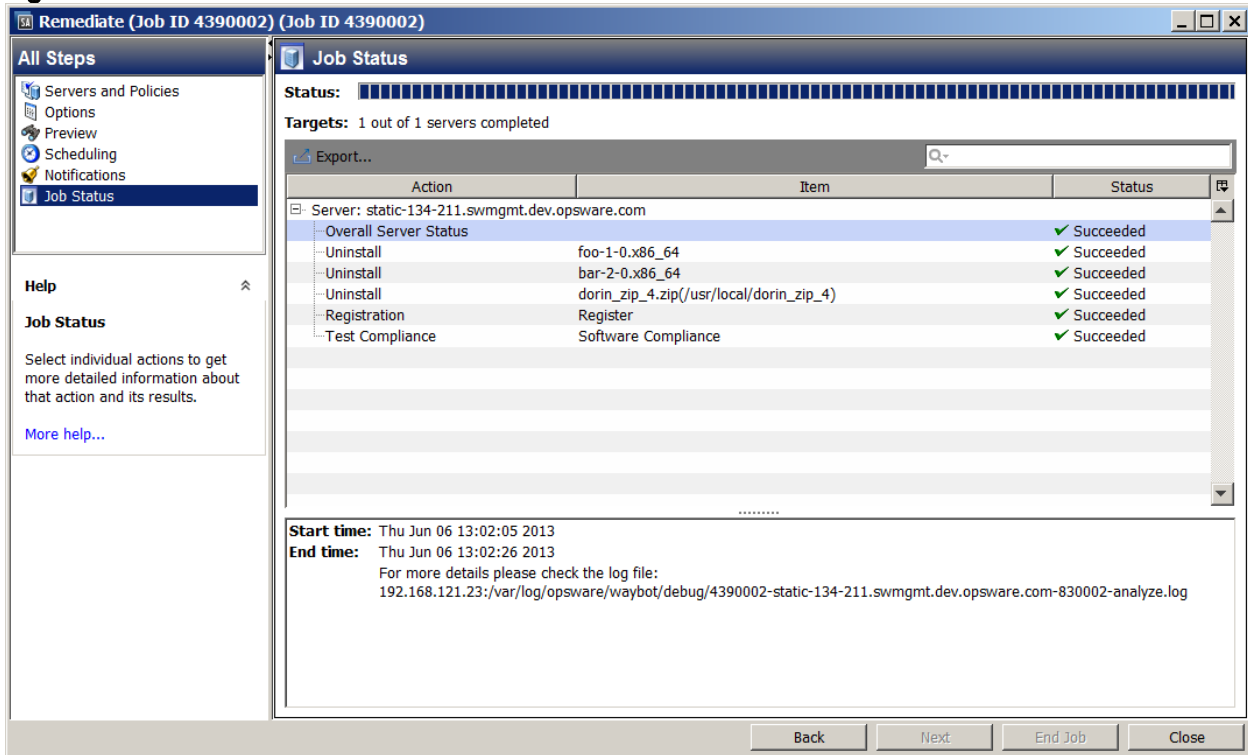
Modify the Command Engine (Way) Config Parameters

1. Log into SA Web Client, and go to System Configuration -> Command Engine.
2. Set the *way.analyze.yum* parameter to 1, so that the native YUM will be used for RPM analysis.
3. Set the *way.remediate.yum* parameter to 1, so that the RPMs will be installed using YUM.
4. Increase the following SSL timeout settings:
 - ssltransport.conn_timeout* – Set to 60 seconds
 - ssltransport.read_timeout* – Set to 900 seconds
 - ssltransport.write_timeout* – Set to 120 seconds

Required: Restart the Waybot after these changes are made.

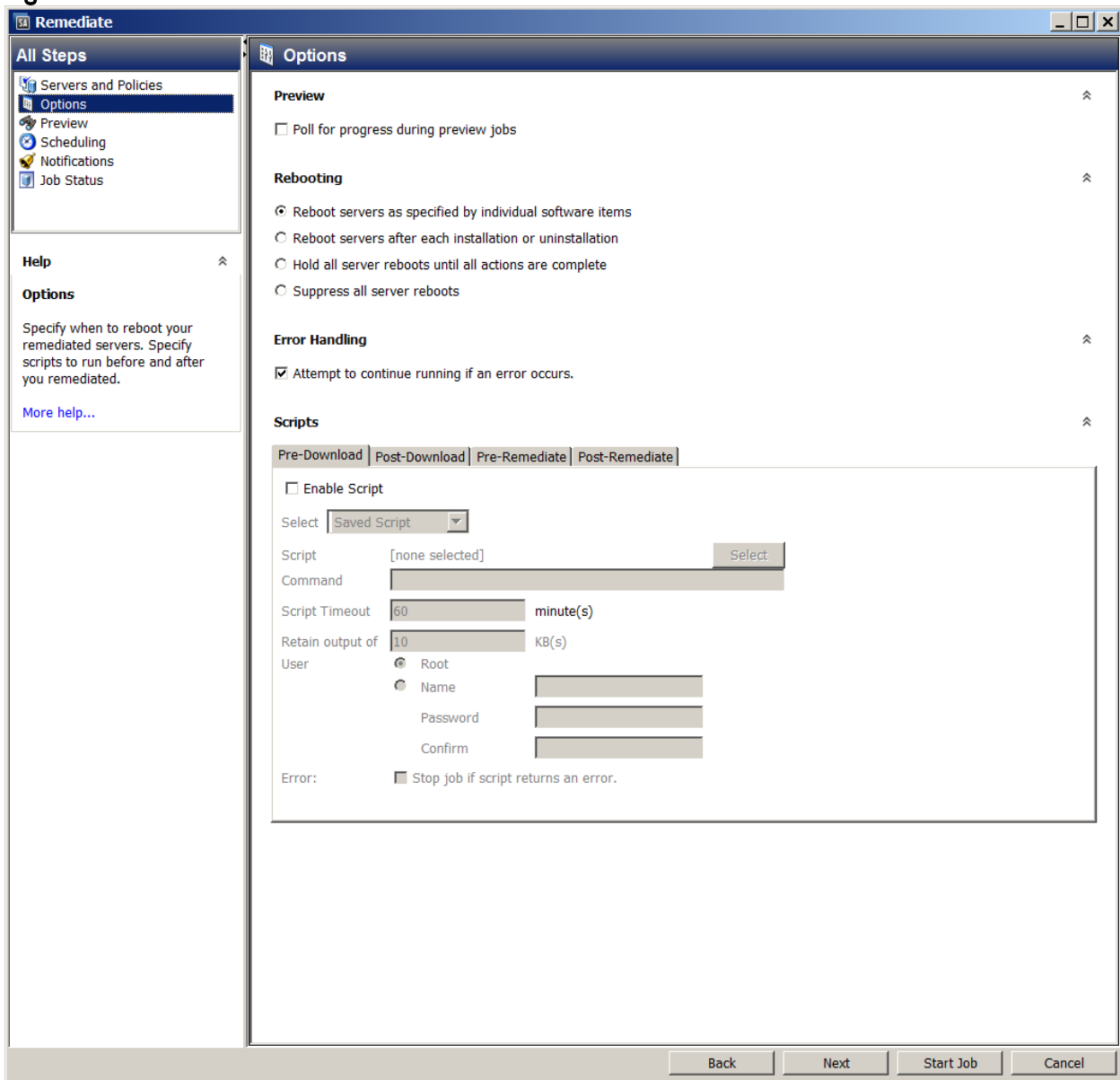
5. Set the `way.remediate.retain_analyze_output` parameter to 0. When you open the job result, the "Overall Status" item for each managed server shows the path on the core where the log file was created. Only informational messages are affected by this setting; any other errors will be retained in the session data and displayed to the user (see Figure 1).

Figure 1. Overall Job Status



6. Run a Preview of a remediation job:
 - a. Go to Options.
 - b. Uncheck the "Poll for progress during preview jobs" checkbox to see only the final result of the Preview job (see Figure 2). There is a significant performance improvement without preview, because there isn't any additional overhead (e.g., computing and parsing the progress) on the back-end components.

Figure 2. Final Result of the Preview Job



- When the user starts a remediation job other than the Preview scenario described previously, HP recommends that after you press the Start Job button, wait until the Job ID is displayed in the title of the Job Window. Now it is safe to close the window.
Note: You can poll the status of the large remediation job from the "Jobs and Sessions" panel.
- Monitor the available Oracle tablespace (both TRUTH_DATA and LCREP_DATA tablespaces).

Limitations

These limitations apply only to large remediation jobs.

- Because HP recommends that you uncheck the "Poll for progress during preview jobs" option, you will not be able to see the progress of a large remediation jobs in real time. You will see the results once the preview is finished.

- Close the job window after the remediation job (not the Preview) has started. You can poll the status of the job from the “Jobs and sessions panel.” Once the job is finished, you can open the job window and see the results.
 - Does this affect the pytwist script’s ability to run `JobService.getProgress()`?
 - Yes, Pytwist `JobService.getProgress()` in script will affect the performance.
- HP recommends you run only one large remediation job at a time. Other smaller jobs may be run in parallel with a large remediation job.
- HP testing has shown that it is possible to remediate up to 100 servers with large, ~3700 RPM RHEL6 channel policy.

Known Issues

- Some managed servers may have errors during the remediation job. After the remediation job is finished, you can retry to remediate the failed servers.

One possible failure is that the agent fails to download the YUM metadata from the core. This may happen when the NFS gives the “Stale NFS file handle” error or if there is a communication timeout between the agent and the core. Because the agent has an incomplete YUM repo, missing dependencies appear in the job results. Check the agent’s log files to discover if the agent failed to download the YUM repo.

Fixed Bugs

- 165183 - Remediation data structures contain too much redundant information and don't scale well.
- 161095 - Unnecessary parameters passed to child doer from chunker during remediation.
- 166052 - Job status is not updated correctly on Scheduled jobs.
- 166846 - Running a large remediation job (e.g., on 100 servers) may cause a child doer session to fail.
- 167011 – SA Client may give an OOM if a large job results window is opened after closing another large job results window.
- 167012 – SA Client keeps the Preview job results even after starting the job.
- 167110 - Agent fails to download the YUM metadata because of a Wordbot error.
- 167113 - A race condition in the Cleartext spinwrapper used by Waybot prevents a session from being created.
- 167133 - Unnecessary parsing of various session results and session parameters.
- 167134 - Configure the spinwrapper with a given number of retries and timeout in `stage_blob` and `action_blob`.

Open Bugs

- 166180 - RPM dependency and conflict errors are not accurate because "<" gets filtered out. Impact: This does not affect the remediation job, but the RPM messages will be incomplete.

- 167107 - Stale NFS file handle in Wordbot. Impact: Agent is unable to download the YUM metadata from Word; analyze phase fails. Next step: Retry.
- 167112 - Use a streaming XMLRPC parser for session parameters, session commands, and session progress. Low impact; this is a memory consumption issue.
- 167137 - Race condition in librpc.xmlrpc.lcxmlrpc.lib.Server. Impact: Low probability of occurring. Next step: Retry
- 167313 - Closing the Job window before the progress polling thread has started allows the progress polling thread to start. Impact: performance problems and possible Twist OutOfMemory errors. How to avoid: after pressing the Start Job button, wait until the Job ID is displayed in the title of the Job Window. Now it is safe to close the window.

Recommended Action

HP recommends that you perform the following steps after installing 9.15:

1. Modify the Command Engine (Way) config parameters. See steps 1 through 5 of the Modify the Command Engine (Way) Config Parameters section on pages 2 and 3.
2. Download and install the latest Launcher to launch SA Client.

Troubleshooting

If you have further difficulties with this issue, save your log files and contact HP Support for assistance.