

Maintenance Plans for MS SQL Database Servers in a ZENworks Environment

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Contents

- Database Maintenance 2
- Microsoft SQL Server Maintenance Plan 2
- Creating a Maintenance Plan 3
- Subplan #1 – Full Database Backup with Index Maintenance 5
- Subplan #2 – Incremental Backups 6
- Subplan #3 – Miscellaneous Maintenance Plan 7

Database Maintenance

Novell recommends a regular maintenance program for the ZENworks database. This plan will vary by database platform, but generally will include regular backups, index maintenance and database reorganization / shrink tasks.

Microsoft SQL Server Maintenance Plan

Section 3.4.6 of the "[System Planning, Deployment, and Best Practices Guide](#)" for ZENworks 11 (SP2 or SP3) outlines elements of a maintenance plan to be designed and implemented using the Maintenance Plan tools included in the Microsoft SQL Server Management Studio. There are a variety of tasks that may be scheduled in an automated maintenance plan, and Novell calls out six to be used for ZENworks:

- Check database integrity
- Shrink database
- Reorganize index
- Rebuild index
- Update statistics
- Back up database

The Best Practices Guide goes on to discuss several recommendations from Microsoft for the maintenance of a SQL database, including daily backups, integrity checks on a 2-week schedule, and thresholds for when indexes should be rebuilt and reorganized. The take-away from these recommendations is that there are certain cadences that can be observed and automated so that maintaining a healthy MS SQL database need not be a challenge.

This document does not pretend to be a comprehensive guide to using the Microsoft SQL Server Management Studio, nor for all aspects of the creation of a database Maintenance Plan. However, the steps below have been used to create working maintenance plans in support of several ZENworks sites using MS SQL databases. I invite your comments and feedback to improve and expand this best practices document.

Creating a Maintenance Plan

After starting and logging into the Microsoft SQL Server Management Studio, expand the Management folder and find the Maintenance Plans folder.

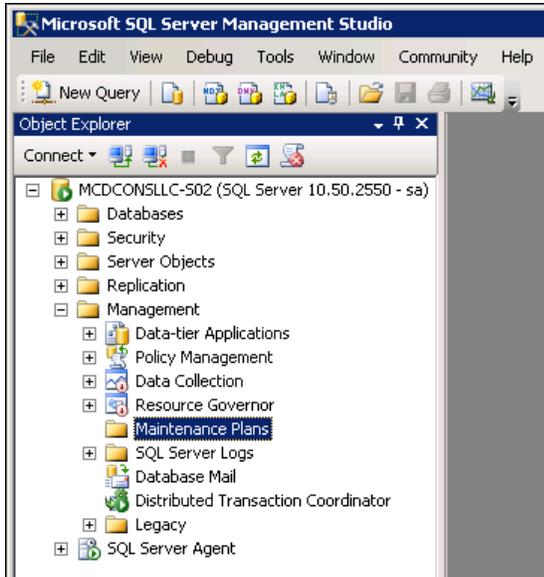


Figure 1 - Maintenance Plan Location

Right click on the Maintenance Plans folder, select “New Maintenance Plan...” and provide an appropriate name such as “ZENworks Database.”

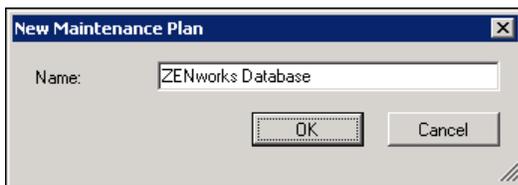


Figure 2 - New ZENworks Database Maintenance Plan

This creates the framework for your maintenance plan.

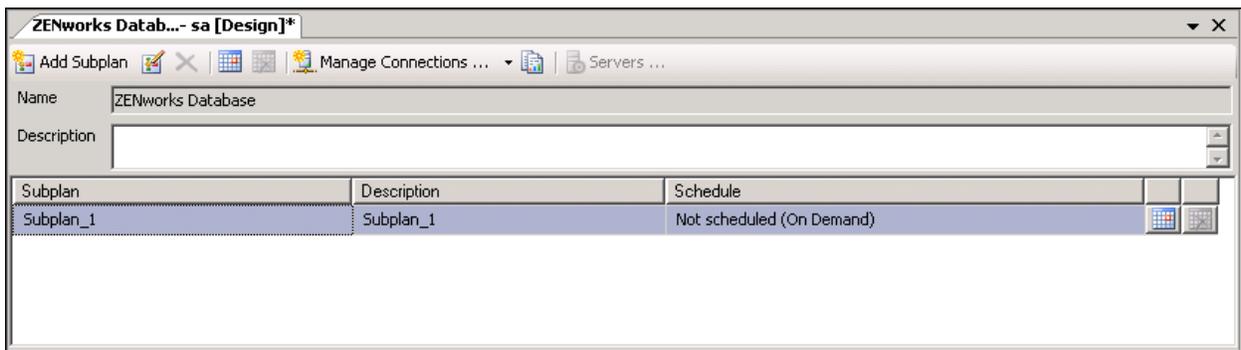


Figure 3 - Maintenance Plan Framework

The workflow from here is to drag-and-drop elements from the Maintenance Plan Toolbox on the lower left of the screen into the large workspace below the list of subplans.

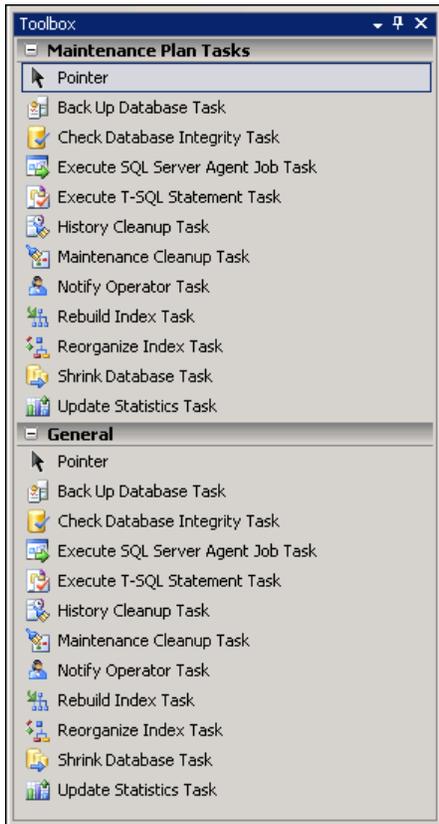


Figure 4 - Maintenance Plan Toolbox

Three subplans should be added to the plan to manage the various areas recommended by Novell. Your new maintenance plan has one subplan already in place; double-click on the “Subplan_1” row to enter a name, description and schedule for the subplan. To add a subplan, press the “Add Subplan” button above the name and description for your maintenance plan.

Descriptions of the three subplans to be configured is included in the sections below. Schedules for individual subplans may be set to integrate with other elements of your overall server maintenance scheme.

Note in the sections below that one subplan runs every night, followed by another subplan one night a week, and preceded by the third subplan once every two weeks. The schedule for the three subplans must be integrated to work properly with the size of your database and the duration of the individual subplans. This may require some trial and error to achieve the appropriate balance.

Subplan #1 – Full Database Backup with Index Maintenance

The first subplan schedules a weekly full backup of the database. Since this will take more time than any other individual subplan, it should be scheduled into a slot where there is sufficient time for the backup to complete before other ZENworks activities require more intensive database resources. In the example here, the backup is set to take place at 2:00am on Saturday mornings.

The backup is preceded by two index maintenance tasks – one to reorganize the indexes and a second to rebuild the indexes. Each of these tasks is relatively quick as compared to the full backup task.

Drag the tasks from the toolbox into the workspace from top to bottom. After all three are in the workspace, drag the arrow from the top task into the center of the middle task and from the middle task into the center of the bottom task; this will connect the three items into a sequenced workflow.

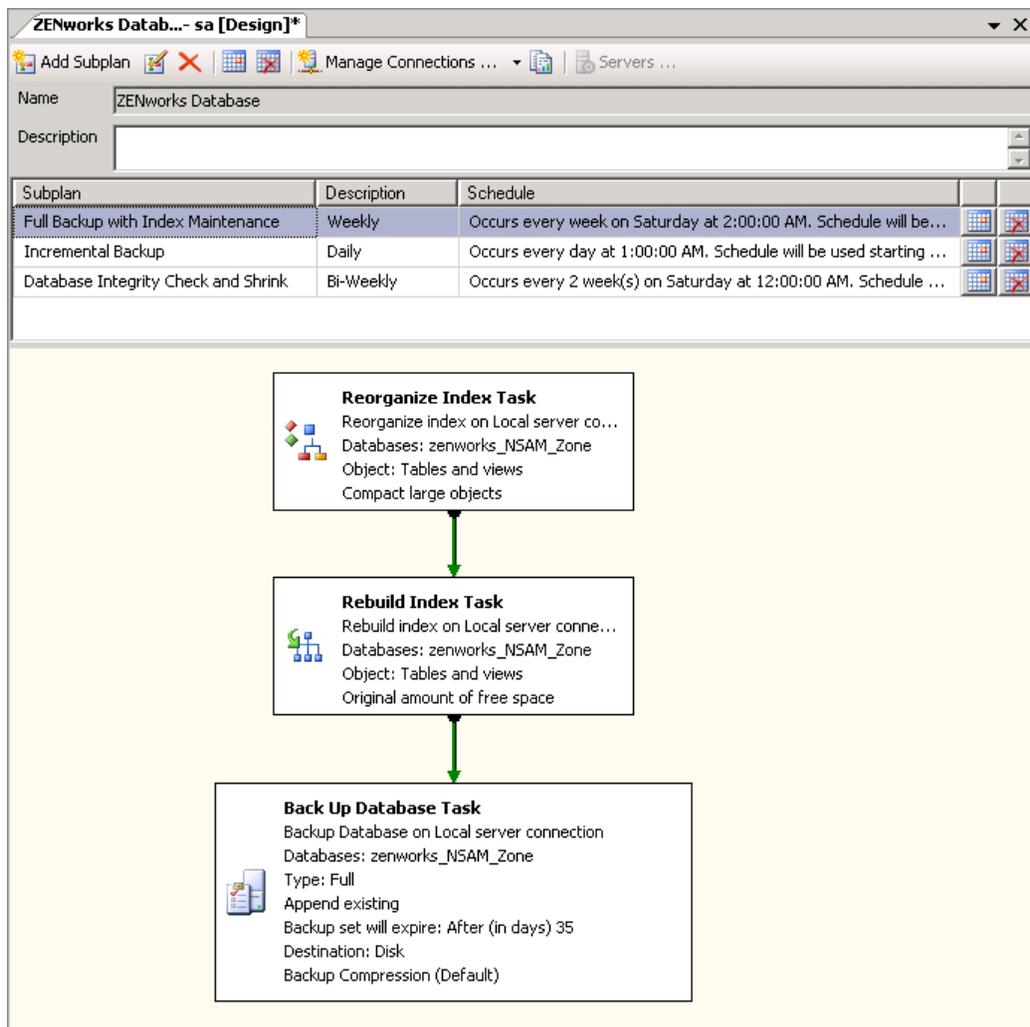


Figure 5 - Full backup and Index Maintenance Plan

Subplan #2 – Incremental Backups

The second subplan takes an incremental backup of the database. This should be scheduled on a daily basis, again at a time when other ZENworks processes are not demanding resources. The example has the daily incremental starting at 1:00am. This allows an hour for completion before a weekly full backup launches on nights when both run.

The screenshot shows the 'ZENworks Datab...- sa [Design]*' window. At the top, there are buttons for 'Add Subplan', 'Manage Connections ...', and 'Servers ...'. Below these are fields for 'Name' (ZENworks Database) and 'Description'. A table lists the subplans:

| Subplan | Description | Schedule | | |
|-------------------------------------|-------------|--|--|--|
| Full Backup with Index Maintenance | Weekly | Occurs every week on Saturday at 2:00:00 AM. Schedule will be... | | |
| Incremental Backup | Daily | Occurs every day at 1:00:00 AM. Schedule will be used starting ... | | |
| Database Integrity Check and Shrink | Bi-Weekly | Occurs every 2 week(s) on Saturday at 12:00:00 AM. Schedule ... | | |

Below the table is a large yellow area containing a task configuration box:

Back Up Database Task
Backup Database on Local server co...
Databases: zenworks_NSAM_Zone
Type: Differential
Append existing
Backup set will expire: After (in day...
Destination: Disk
Backup Compression (Default)

Figure 6 - Incremental Backups Plan

Subplan #3 – Miscellaneous Maintenance Plan

The third subplan launches every other week to perform a database integrity check, to shrink the database, and to update database statistics. Notice that in our example, this subplan is set to run at 12:00 midnight on Saturday nights, allowing a one hour window for completion before the daily incremental backup runs, followed an hour later by the weekly full backup.

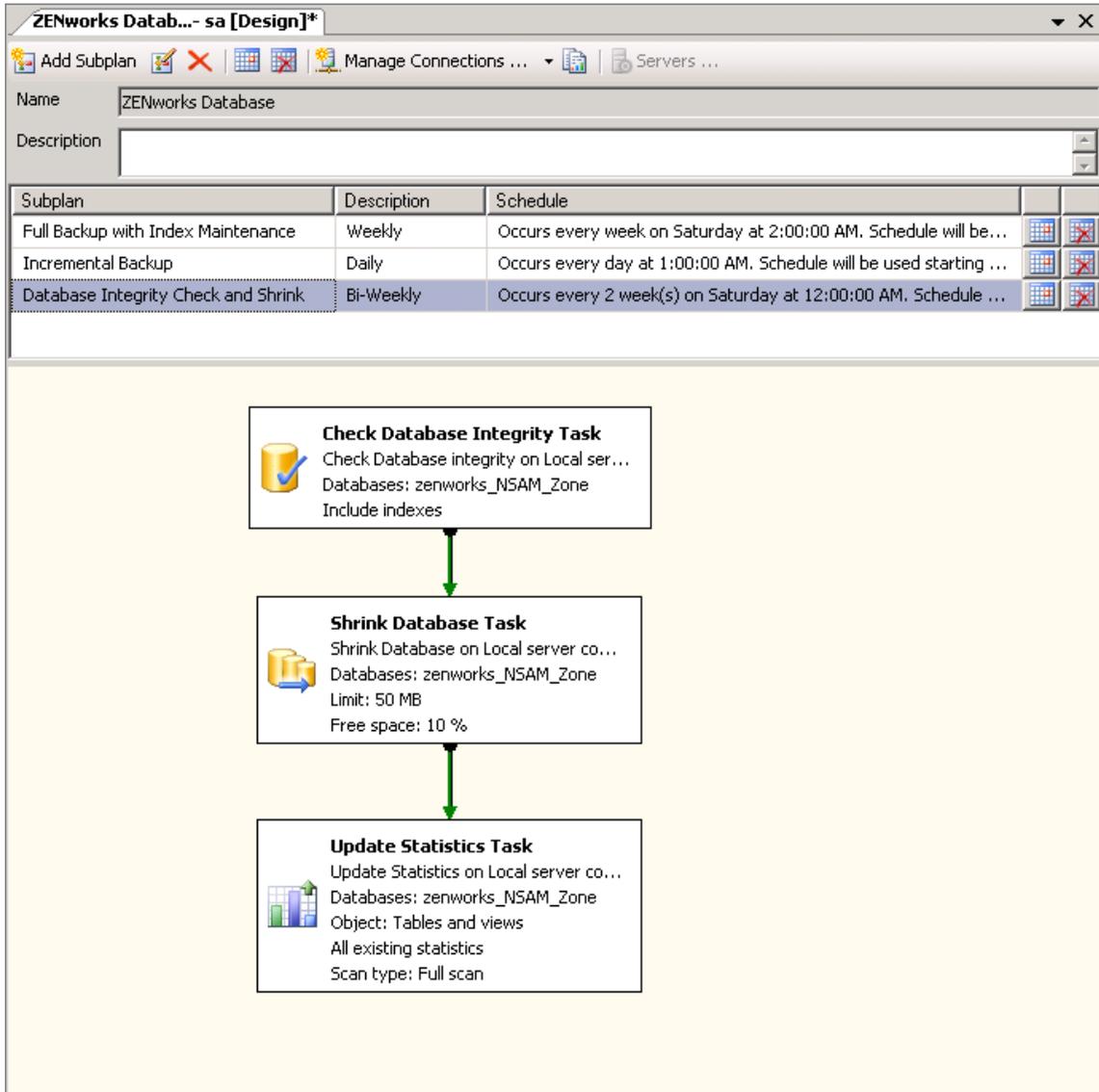


Figure 7 - Miscellaneous Maintenance Tasks Plan