

MRP Requirements Calculation Temporary Scratchpad

SYSPRO 8 Technical Article

Last Published: March 2021



SYSPRO Help and Reference

Copyright © 2021 SYSPRO Ltd

All rights reserved

No part of this document may be copied, photocopied, or reproduced in any form or by any means without permission in writing from SYSPRO Ltd. SYSPRO is a trademark of SYSPRO Ltd. All other trademarks, service marks, products or services are trademarks or registered trademarks of their respective holders.

SYSPRO Ltd reserves the right to alter the contents of this document without prior notice. While every effort is made to ensure that the contents of this document are correct, no liability whatsoever will be accepted for any errors or omissions.

This document is a copyright work and is protected by local copyright, civil and criminal law and international treaty. This document further contains secret, confidential and proprietary information belonging to SYSPRO Ltd. It is disclosed solely for the purposes of it being used in the context of the licensed use of the SYSPRO Ltd computer software products to which it relates. Such copyright works and information may not be published, disseminated, broadcast, copied or used for any other purpose. This document and all portions thereof included, but without limitation, copyright, trade secret and other intellectual property rights subsisting therein and relating thereto, are and shall at all times remain the sole property of SYSPRO Ltd.



Contents

| | |
|--|----------|
| MRP Requirements Calculation | 3 |
| MRP Optimized for SQL Server | 3 |
| MRP Suggestions and the use of BULK INSERT | 4 |
| Size of Temporary Scratchpad Files | 5 |
| Setting the Maximum Temporary Scratchpad File Size to 256 TB | 5 |

MRP Requirements Calculation

The SYSPRO MRP Requirements Calculation process gathers supply and demand from many source modules and, based on the configured rules, uses a netting-off process to determine time-phased requirements. Where shortages exist, appropriate buying and manufacturing rules are applied to create suggested purchase orders or jobs to fulfil the shortages. This is performed iteratively through all levels until all shortages have been managed.

During the netting-off phase, a large amount of temporary data is generated – especially where there are many supply and demand items from the source modules, or where complex rules are used to generate suggestions, or where your bills of material have many levels etc.

The SYSPRO MRP Requirements Calculation has a choice for you to use either SQL Server or the file system for ‘temporary scratchpad’ storage. The temporary scratchpad also contains snapshots of selected source data.

The file system is used for the following reasons:

- The temporary scratchpad data does not need to be managed transactionally – i.e. there is no requirement to recover partially generated calculations in the event of a system failure (such as a disk crash). It’s a simple case of restarting the requirements calculation process.
- If we were to store temporary scratchpad data in the database, SQL Server still outputs transaction logs for all changes to the temporary data as this is the method that SQL Server uses to ensure that the database (even if temporary in nature) has complete data integrity. This is not a requirement for the temporary scratchpad data.
- In practice, using SQL Server to store large amounts of temporary scratchpad data can reduce performance as extremely large transaction log files are generated during the requirements calculation process.

MRP OPTIMIZED FOR SQL SERVER

IS SPEED THE ONLY CONSIDERATION?

Time is money. So, it's imperative that calculating requirements in a manufacturing environment is accurate and timeous. It affects ordering protocols, storage policies and whether sales promises can be met, to name but a few. Also important, is the management and security of your database and file system usage.

FILE SYSTEM VS DATABASE

SYSPRO defaults to using the file system as a scratchpad for calculating material requirements. In many cases this offers performance benefits due to the typically very high performance of the file system.

A new facility was introduced in SYSPRO 8 2020 R1 that caters for using the SQL database as a scratchpad for calculating material requirements. This method can be slower, in part because the database log file can grow quickly while the calculation is in progress. However, the performance depends on your own environment, size, and complexity of data.

SYSPRO lets you choose the method you want to use.

CHOICES, CHOICES, CHOICES

The option you choose depends on your current requirement.

If you have been using SYSPRO for some time, then initially we recommend that you continue using the file system as a temporary scratchpad (i.e. this is the default, so you don't need to change any configuration). This ensures that your existing performance is retained. Also note that when using this method, all suggestions for the MRP requirements calculation are still stored in SQL; only the temporary working area uses the file system.

Alternatively, use the SQL Server database facility as a temporary scratchpad. You can activate this by disabling the default option: **Run calculation in legacy mode** in the **Requirements Calculation** program.

It is important to note that although the two methods are different, the end result is the same.

MRP SUGGESTIONS AND THE USE OF BULK INSERT

If you elect to use the file system, then suggested purchase orders and jobs are also generated and stored in the temporary scratchpad during the netting-off phase.

Once the netting-off phase has completed, these suggestions are migrated into SQL Server tables using the SQL Server BULK INSERT statement.

The BULK INSERT statement provides excellent performance, partly as it does not write to the SQL transaction log. Even when you have a very large number of suggestions the BULK INSERT logic provides excellent performance.



SIZE OF TEMPORARY SCRATCHPAD FILES

In SYSPRO 8 the default size of each temporary scratchpad file is 4 GB. This is suitable for many companies running the MRP Requirements Calculation.

However, in some cases one or more of the temporary files being created may exceed this size. In which case you can increase the maximum temporary file size to 256 TB – at which point disk space limitations will usually become the limiting factor.

SETTING THE MAXIMUM TEMPORARY SCRATCHPAD FILE SIZE TO 256 TB

Create a plain text file using a text editor (such as NOTEPAD) in the SYSPRO BASE folder named:

`_large_mrp_temp.txt`

This file does not have to contain any specific content – just the existence of the file will cause the MRP Requirements Calculation to support very large temporary scratchpad files.



www.syspro.com

Copyright © SYSPRO. All rights reserved.
All brand and product names are trademarks or
registered trademarks of their respective holders.

