

Parallel Replenishment Calculation Memo

LS Central (27.0)



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1 Introduction

The calculation of Purchase Orders and Transfer Orders in LS Replenishment is done in three steps:

- Calculation of Out-of-Stock
- Calculation of Replenishment Item Quantity
- Calculation of Replenishment journals

The processing time strongly depends on the number of items, variants, and locations to be considered in the calculation and can take multiple hours.

This memo covers the setup to calculate **Replenishment Item Quantities (RIQ)** and **Out-of-Stock (OOS)** using a parallel calculation approach. The purpose of this approach is to reduce the processing time for the calculation.

There are two methods of parallel calculation:

- Replenishment calculation using multiple NAS
- Replenishment calculation using background sessions

LS Central on-premises users can opt to use either method. LS Central SaaS users can use the background sessions method which is compatible with the SaaS environment.

2 Replenishment Calculation Using Multiple NAS

2.1 Configuring the NAS

In classical setups, one NAS is used to process a job for the **Job Scheduler**.

In the parallel approach, we add more NAS to distribute the workload among those additional services. It is not necessary to host the additional NAS on separate, individual servers or VMs, but we recommend having one server or VM for the primary NAS and a separate server or VM to host all the additional NAS.

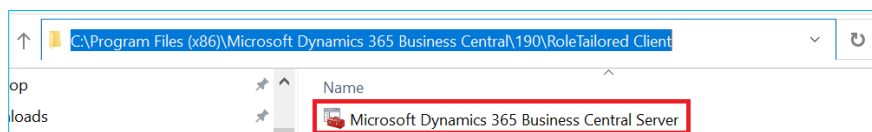
Example1:

- SERVER1: Microsoft SQL Server
- SERVER2: Client Services & primary NAS
- SERVER3: NAS1 (for parallel processing)
- SERVER4: NAS2 (for parallel processing)

Example2:

- SERVER1: Microsoft SQL Server
- SERVER2: Client Services & primary NAS
- SERVER3: NAS1, NAS2 (for parallel processing)

To configure the NAS, you must open the **Microsoft Management Console** for the Microsoft Dynamics 365 Business Central Server. It is called "Microsoft Dynamics 365 Business Central Server.msc" and can usually be found in the folder *C:\Program Files (x86)\Microsoft Dynamics 365 Business Central\190\RoleTailored Client*.



We assume the service has already been set up correctly, so the connection to the database has been established and clients have already connected to the database.

To configure the NAS, open the **NAS Services** tab for the service you want to configure.

Enable Buffered Insert:	☒	SQL Lock Timeout Override:	0
Enable Data Export/Import From the Application:	☒	SQL Management Command Timeout:	-1
Enable Deadlock Monitoring:	☐	SQL Query Logging Threshold - Application Insights:	750
Enable Encryption on SQL Server Connections:	☐	SQL Query Logging Threshold - Event Log:	750
Enable Exclusive Locks on Unaltering MODIFY Calls:	☐		
Enable SQL Query TOP Parameterization:	☐		
Client Services		9046 ▼	
SOAP Services		9047 ▼	
OData Services		9048 ▼	
NAS Services		^	
Enable Debugging:	☐	Startup Codeunit:	0
Run NAS Services with Admin Rights:	☒	Startup Method:	
Startup Argument:			
Management Services		9045 ▼	

2.1.1 Having the NAS Run a Single Task

If you just want to run one task or codeunit, you can enter the number of your codeunit in the field. This will run the OnRun trigger. Here is an example:

NAS Services		^	
Enable Debugging:	☐	Startup Codeunit:	99001468
Run NAS Services with Admin Rights:	☒	Startup Method:	
Startup Argument:			

If you want the NAS server to run a function in your codeunit, you need to enter the name of the function in the **Startup Method** field, and if you want to pass parameters to your function, you can enter them in the **Startup Argument**. Here is an example of how to have the NAS call the function LRSCHEDULER in codeunit 99001468 LS NAS Scheduler Service, and pass parameters NASID,TYPEFILTER=DD-FROM-HO|DD-TO-HO|HOSP,LOG=1,REPEAT=1:

NAS Services		^	
Enable Debugging:	☐	Startup Codeunit:	99001468
Run NAS Services with Admin Rights:	☒	Startup Method:	LRSCHEDULER
Startup Argument:	NASID,TYPEFILTER=DD-F... NASID,TYPEFILTER=DD-FROM-HO DD-TO-HO HOSP,LOG=1,REPEAT=1		
Management Services		9045 ▼	

2.1.2 Having the NAS Run Multiple NAS Tasks

If you want the NAS server to run more than one task, you can use Codeunit 99001454 LS Retail NAS Handler and pass parameters to the function LSRETAILNASHANDLER.

You need to enter 99001454 in the **Startup Codeunit** field and LSRETAILNASHANDLER in the **Startup Method**. The following four keywords are supported in the parameters passed in the **Startup Argument**:

- LSRBATCHPOST
- LRSCHEDULER

If you want to run the **LS Retail Batch Posting** function, you can enter LSRBATCHPOST in the **Startup Argument** field. When this service is started, Codeunit 99001454 LS Retail NAS Handler will start 99001466 Run Batch Posting from NAS in a background session.

If your NAS is to run the **LS Retail Scheduler**, then you should enter LRSCHEDULER in the **Startup Argument** field. Please note that the LRSCHEDULER takes a parameter string. The parameter string must immediately follow the LRSCHEDULER keyword, and it must be separated by a space. The format of the LS Retail Scheduler parameter is: NASID,TYPEFILTER=[Filter on Scheduler Job Type Code],LOG=[0|1],REPEAT=[0|1].

The NASID can be filled out. It can have any alphanumeric characters (A to Z and 0 to 9). If it is specified, then it must be the first keyword in the parameter string.

The Scheduler uses the NASID for marking jobs that have **Run Status = Processing** when the Scheduler starts. If the NASID is filled out, the LS Retail Scheduler will mark the **Scheduler Job Header** with the NASID when it starts a job. When the LS Retail Scheduler is started and it finds a job where **Run Status = Processing** and it is marked with the same NASID, the LS Retail Scheduler will change the **Run Status** of the job depending on the value in the **Error Handling** field. If it is **Skip to Next Run**, then a new date and time will be calculated for the job, depending on the **Time between Check** and the **Time Units**, and the Scheduler will try again at the new time. If the **Error Handling** is **Mark with Error and Retry**, then the Scheduler will change the **Run Status** to blanks and try running it again. And finally, if the **Error Handling** is **Mark with Error and Stop**, the Scheduler will change the **Run Status** to **With Error**, and it will not try to run it again until the **Run Status** is changed manually.

In the filter on **Scheduler Job Type**, you can enter a filter for the jobs you want the LS Retail Scheduler to run. If you want to run all the LS Retail Scheduler jobs, you can omit this parameter or fill it out like this: TYPEFILTER=

An example of how the TYPEFILTER can be filled out: TYPEFILTER=DD-FROM-HO|DD-TO-HO|HOSP

The codeunit that runs the Scheduler (99001469) will apply the type filter (DD-FROM-HO|DD-TO-HO|HOSP) to the jobs that it will run, so only jobs that have DD-FROM-HO, DD-TO-HO, or HOSP will be selected and run by this NAS.

The LOG parameter can be set to either 0 or 1. If it is set to 0 (LOG=0), the system will not enter any lines in the Scheduler Log. If the parameter is set to 1 (LOG=1), the system will enter one line into the Scheduler Log, every time the job is run.

The REPEAT parameter can be set to either 0 or 1. If it is set to 0 (REPEAT=0), the task is only run once, but if the parameter is set to 1 (REPEAT=1), the task will run until it is shut down.

NAS Services			
Enable Debugging:	☐	Startup Codeunit:	99001454
Run NAS Services with Admin Rights:	☒	Startup Method:	LSRETAILNASHANDLER
Startup Argument:	LSRBATCHPOST LRSCHEDUL... LSRBATCHPOST LRSCHEDULER NASID,TYPEFILTER=DD-FROM-HO DD-TO-HO HOSP,LOG=1,REPEAT=1		
Management Services			

Note: The keywords (LSRBATCHPOST, LRSCHEDULER) and parameters for the LRSCHEDULER (NASID,TYPEFILTER=DD-FROM-HO|DD-TO-HO|HOSP,LOG=1,REPEAT=1) must be separated by a space in the **Startup Argument** field.

2.2 Running Replenishment Item Quantity (RIQ) Calculation in Parallel with NAS

2.2.1 Configuring NAS for Parallel Processing

To enable parallel processing, at least two additional NAS need to be configured, as the processing load will be distributed among the NAS with the aim to accelerate and shorten the calculation time. See example below on how to perform the setup.

To setup the first NAS, assign the below fields with the values as shown:

- **Startup Codeunit:** 99001468
- **Startup Method:** LRSCHEDULER
- **Startup Argument:** NAS1,TYPEFILTER=REPLEN-P1,LOG=1,REPEAT=1

To setup the second NAS:

- **Startup Codeunit:** 99001468
- **Startup Method:** LRSCHEDULER
- **Startup Argument:** NAS2,TYPEFILTER=REPLEN-P2,LOG=1,REPEAT=1

More NAS can be set up in the same way as long as they are assigned with a unique NASID and TYPEFILTER. **Note:** The TYPEFILTER for each NAS will be the Scheduler Job Type Code being assigned to its corresponding Scheduler Job. See section 2.2.2 on how Scheduler Job Type Code is assigned to a Scheduler Job.

2.2.2 Configuring the Primary NAS

To avoid that the primary NAS will consider jobs dedicated to the parallel NAS, the **Startup Argument** needs to be set up properly. The TYPEFILTER setting must not contain the TYPEFILTER for the parallel NAS.

Example:

TYPEFILTER=DD-FROM-HO|DD-TO-HO|HOSP|MISC

This will ensure that jobs with TYPEFILTER of REPLEN-P1 or REPLEN-P2 will not be processed by the primary NAS.

2.2.3 Configuring Scheduler Job for Parallel Processing

Each NAS will work with a Scheduler Job while each Scheduler Job will work on its share of process. To run a parallel RIQ calculation, at least two Scheduler Jobs need to be configured. When you set up the Scheduler Job, there are a few things that you need to take note. In the Scheduler Job card, you need to ensure that each of the jobs is assigned with a unique Scheduler Job Type Code. For example, the first Scheduler Job can be assigned with Scheduler Job Type Code REPLEN-P1, and the second Scheduler Job with REPLEN-P2.

Scheduler Job



✓ Saved


REPLEN-QTY-PAR1 · Replenishment Calc. Subjob 1

 Run Now
 Convert Preactions
 Preload
|
Actions
Related
Fewer options

General

Job ID ············
REPLEN-QTY-PAR1

Subjobs Defined by Job ···
REPLEN-QTY-PAR1

Description ············
Replenishment Calc. Subjob 1

Job Type ············
Data Replication

Scheduler Job Type Code ·
REPLEN-P1

Error Handling ············
Skip To Next Run

Scheduler Job



✓ Saved


REPLEN-QTY-PAR2 · Replenishment Calc. Subjob 2

 Run Now
 Convert Preactions
 Preload
|
Actions
Related
Fewer options

General

Job ID ············
REPLEN-QTY-PAR2

Subjobs Defined by Job ···
REPLEN-QTY-PAR2

Description ············
Replenishment Calc. Subjob 2

Job Type ············
Data Replication

Scheduler Job Type Code ·
REPLEN-P2

Error Handling ············
Skip To Next Run

Next, you need to ensure that the Object No. field which resides in the Object Setup FastTab is assigned with codeunit 10012200 (LSC Replen. - Calc. Qtys), as this is the codeunit responsible for the RIQ calculation.

Object Setup	
Object Type	Codeunit
Object No.	10012200
Object Name	LSC Replen. - Calc. Qtys
Use Web Replication	☐
Uses Scheduler Job Record	☒
Use Job ID	REPLEN-QTY-PAR2
Last Batch ID	
Text	
Code	
Integer	0
Decimal	0.00
Date	
Time	
Boolean	☒
DateFormula	

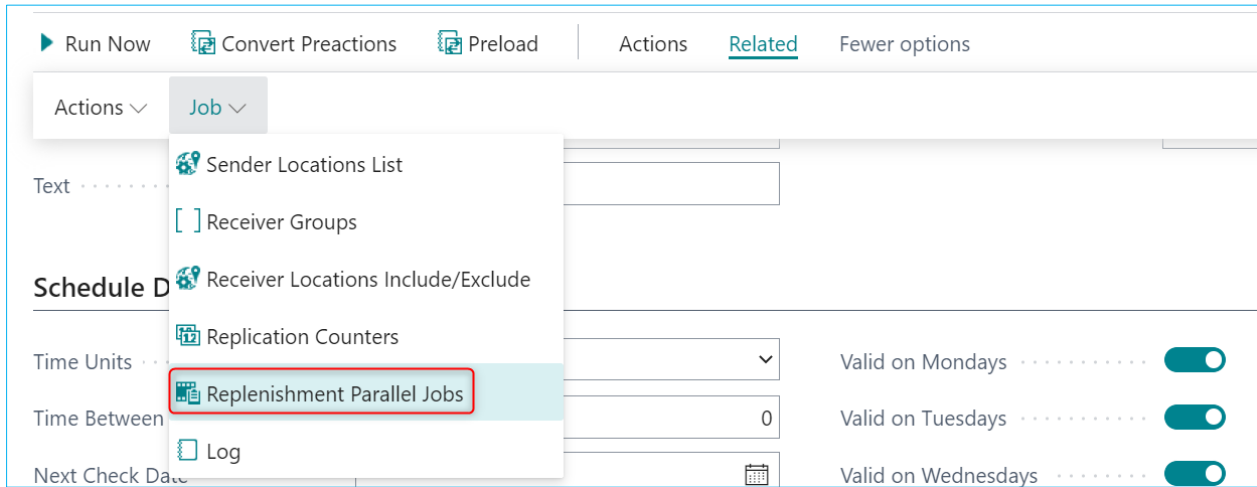
2.2.4 Configuring Master Scheduler Job and Linked Scheduler Jobs

A master Scheduler Job will need to be set up in order to monitor the parallel processing Scheduler Jobs that have been set up in section 2.2.3. The role of the master job is to monitor and check if all its subjobs (the parallel processing jobs) have completed their processes successfully.

Similar to setting up the parallel jobs, a unique Scheduler Job Type Code must be assigned to the master job. You must also ensure that the **Object No.** field is assigned with codeunit 10012221 (LSC Replen. Parallel Master) - the codeunit responsible for monitoring the parallel jobs.

Object Setup	
Object Type	Codeunit
Object No.	10012221
Object Name	LSC Replen. Parallel Master
Use Web Replication	☐
Uses Scheduler Job Record	☒
Use Job ID	REPLEN-QTY-MASTER
Last Batch ID	
Text	
Code	
Integer	0
Decimal	0.00
Date	
Time	
Boolean	☒
DateFormula	

An extra step that needs to be performed when setting up the master job is to assign the relevant parallel jobs as its subjobs (Linked Scheduler Jobs). This can be done by clicking the **Replenishment Parallel Jobs** action located on the **Related - Job** action menu in the Scheduler Job card.



This will bring up the Replenishment Parallel Jobs card. See the screenshot below and the explanations of its fields.

Replen. Parallel Jobs ✎ 🔗 + 🗑️ ✓ Saved 🔍

REPLEN-QTY-MASTER · Replenishment Calc. MASTER

📊 Calculate Balancing

General Setup

Master Job Timeout Duration (Min) 150	Parallel Calc. Balancing Optimization
Timeout Check Interval (Sec) 300	Balancing Optimization Enabled ☒
Balancing Method Calculate	Consider Excluded from Replenishment ☒
Balancing Considers Variants ☐	Calculation with Job Queue
	Parallel Calculation with Job Queue ☒
	Parallel Calc. Run Job Queue with WS ☒
	Maximum No. of Attempts to Run 0

Linked Jobs 🔗 New Line ✖ Delete Line 🔍 🔗

Job ID ↑	Job Type Code	Parallel Calc. Job Queue User	Share Type	Weight	Timeout (Min)	% Share	Job Filter String
→ REPLEN-QTY-PAR1	REPLEN-P1		Manual Weight	1.00	120	50.00	10000..36500
REPLEN-QTY-PAR2	REPLEN-P2		Manual Weight	1.00	120	50.00	36510..R0034

General Setup FastTab:

- **Master Job Timeout Duration (Min):**
 - the time in minutes that the master job should monitor the linked jobs before it times out.
 - it should not be lesser than the timeout value assigned to any linked job.

- if it is assigned with zero, the master job will never timeout.
- **Timeout Check Interval (Sec):** how frequently, in seconds, the master job should check if a timeout has occurred, for both master job and linked jobs.
- **Balancing Method:** specifies if the item balancing of the linked jobs should be calculated or manually defined. There are three available options:
 - *Calculate* - the item balancing is calculated and assigned by the master job according to the Weight and % Share of the linked jobs, as the RIQ calculation is executed.
 - *Pre-Calculate with Scheduler Job* - the item balancing is pre-calculated with a scheduler job. During the RIQ calculation, the master job skips the item balancing calculation and the system proceeds with the RIQ calculation based on the pre-calculated item range.
 - *Manual* - The master job skips the item balancing calculation and you need to manually adjust the Job Filter String of the linked jobs as needed.
- **Balancing Considers Variants:** when activated, the system will take into account the total number of both the items and variants when splitting the item range, to achieve a more balanced workload between the linked jobs when working with variants.
- **Balancing Optimization Enabled:** when activated, the balancing calculation will exclude the items that are blocked.
- **Consider Excluded from Replenishment:** this setting is used when balancing optimization is enabled. It specifies if the balancing calculation will also exclude items that are Excluded from Replenishment.

Linked Jobs FastTab:

This is where the parallel processing jobs will be assigned to the master job as sub jobs (Linked Scheduler Jobs).

- **Job ID:** the ID of the parallel processing job being assigned.
- **Job Type Code:** the Scheduler Job Type Code assigned to the job.
- **Share Type:** two options are available – Equal Weight or Manual Weight.
- **Weight:**
 - if Share Type *Equal Weight* is selected, then when the Weight value of one Linked Scheduler Job is changed, the Weights of all the other jobs will be automatically updated with the same value.
 - If Share Type *Manual Weight* is selected, then each of the Linked Scheduler Jobs can be assigned with its individual Weight value.
- **Timeout (Min):**
 - the time in minutes that the linked job should run before it times out.
 - it should not be greater than the timeout value assigned to the master job.
 - if it is assigned with zero, the linked job will never timeout.
 - if a timeout occurs, the master job will be notified and the calculation process will be stopped for the affected linked job.
- **% Share:** the workload distributed to each linked job; this is automatically calculated based on the Weights assigned.
- **Job Filter String:** the range of items to be processed by the linked job. Depending on the **Balancing Method** defined for the master job, the item range can either be calculated or manually defined.

2.3 Running Out-of-Stock (OOS) Calculation in Parallel with NAS

2.3.1 Configuring NAS for Parallel Processing

The setup of parallel NAS for OOS is the same as the setup for RIQ. Refer to section 2.2.1 for more details.

2.3.2 Configuring the Primary NAS

The setup of primary NAS for OOS is the same as the setup for RIQ. Refer to section 2.2.2 for more details.

2.3.3 Configuring Scheduler Job for Parallel Processing

The setup of parallel processing Scheduler Job for OOS is the same as the setup for RIQ. Refer to section 2.2.3 for more details.

The one difference that you need to take note is to assign the codeunit responsible for OOS calculation to the **Object No.** field in the Scheduler Job card. The codeunit is 10012203 (LSC Replen. Out of Stock Mgt.).

Object Setup	
Object Type	Codeunit
Object No.	10012203
Object Name	LSC Replen. Out of Stock Mgt.
Use Web Replication	☐
Uses Scheduler Job Record	☒
Use Job ID	REPLEN-STKOUT
Last Batch ID	
Text	
Code	
Integer	0
Decimal	0.00
Date	
Time	
Boolean	☒
DateFormula	

2.3.4 Configuring Master Scheduler Job and Linked Scheduler Jobs

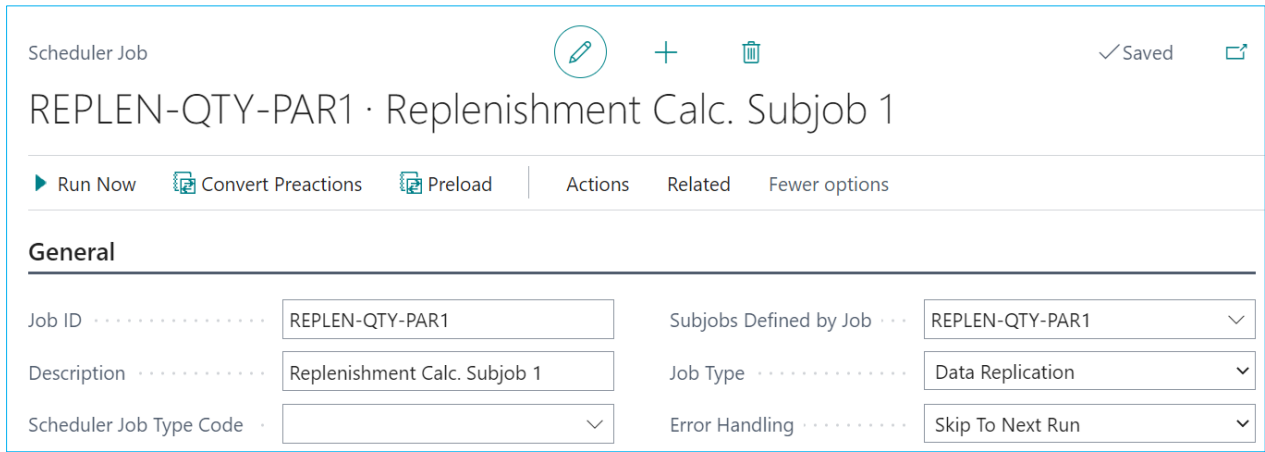
The setup of master Scheduler Job and Linked Scheduler Jobs for OOS is the same as the setup for RIQ. Refer to section 2.2.4 for more details.

3 Replenishment Calculation Using Background Sessions

3.1 Running Replenishment Item Quantity (RIQ) Calculation in Parallel with Background Sessions

3.1.1 Configuring Scheduler Job for Parallel Processing

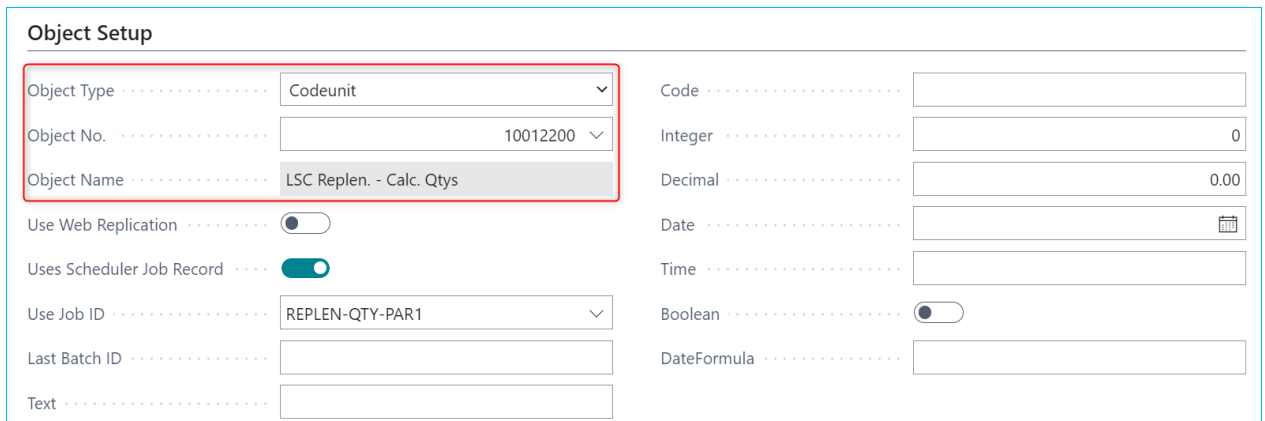
You need to define multiple Scheduler Jobs and each Scheduler Job will work on its share of the process. To run a parallel RIQ calculation, at least two Scheduler Jobs need to be configured. The Scheduler Job Type Code field is not mandatory for these Scheduler Jobs.



The screenshot shows the 'Scheduler Job' configuration window. At the top, there are icons for editing, adding, and deleting jobs, along with a 'Saved' status and a share icon. The title bar reads 'REPLEN-QTY-PAR1 · Replenishment Calc. Subjob 1'. Below the title bar, there are tabs for 'Run Now', 'Convert Preactions', 'Preload', 'Actions', 'Related', and 'Fewer options'. The 'General' tab is selected, showing the following fields:

Job ID	REPLEN-QTY-PAR1	Subjobs Defined by Job	REPLEN-QTY-PAR1
Description	Replenishment Calc. Subjob 1	Job Type	Data Replication
Scheduler Job Type Code		Error Handling	Skip To Next Run

Next, you need to ensure that the **Object No.** Field, located in the Object Setup FastTab, is assigned with codeunit 10012200 (LSC Replen. - Calc. Qtys), as this is the codeunit responsible for the RIQ calculation.



The screenshot shows the 'Object Setup' FastTab. The 'Object Type' is set to 'Codeunit'. The 'Object No.' is set to '10012200', which is highlighted with a red box. The 'Object Name' is 'LSC Replen. - Calc. Qtys'. Other fields include 'Use Web Replication' (disabled), 'Uses Scheduler Job Record' (enabled), 'Use Job ID' (REPLEN-QTY-PAR1), 'Last Batch ID', 'Text', 'Code', 'Integer' (0), 'Decimal' (0.00), 'Date', 'Time', 'Boolean' (disabled), and 'DateFormula'.

During execution, each Scheduler Job will start a background session to process the RIQ calculation.

Note: There is a maximum number of background sessions per tenant that the server instance can actively process at the same time. Requests that exceed the limit will wait in the queue until a slot becomes available. For more information, refer to [Operational Limits for Business Central Online](#).

3.1.2 Configuring Master Scheduler Job and Linked Scheduler Jobs

A master Scheduler Job will need to be set up to monitor the parallel processing Scheduler Jobs that have been set up in section 3.1.1. The role of the master job is to monitor and check if all its sub jobs (the parallel processing jobs) have completed their processes successfully.

For master Scheduler Job, you must assign a Scheduler Job Type Code. You need to ensure that the **Object No.** field is assigned with codeunit 10012214 (LSC Replen. Parl. Master SaaS) - the codeunit responsible for running and monitoring the parallel jobs.

Object Setup	
Object Type	Codeunit
Object No.	10012214
Object Name	LSC Replen. Parl. Master SaaS
Use Web Replication	☐
Uses Scheduler Job Record	☒
Use Job ID	REPL-QTY-MASTER-SAAS
Last Batch ID	
Text	
Code	
Integer	0
Decimal	0.00
Date	
Time	
Boolean	☒
DateFormula	

An extra step that needs to be performed when setting up the master job is to assign the relevant parallel jobs as its sub jobs (Linked Scheduler Jobs). This can be done by clicking on the **Replenishment Parallel Jobs** action located on the **Related - Job** action menu in Scheduler Job card.

Run Now		Convert Preactions		Preload		Actions		Related		Fewer options	
Actions Job											
Sender Locations List Receiver Groups Receiver Locations Include/Exclude Replication Counters Replenishment Parallel Jobs Log											
Text Schedule D Time Units Time Between Next Check Date											
Valid on Mondays Valid on Tuesdays Valid on Wednesdays											

This will bring up the Replenishment Parallel Jobs card. See the screenshot below and the explanations of its fields.

Replen. Parallel Jobs ✎ 🔗 + 🗑️ ✓ Saved 🔗

REPL-QTY-MASTER-SAAS · Replen. Calc. MASTER SaaS

 Calculate Balancing

General Setup

Master Job Timeout Duration (Min)

Timeout Check Interval (Sec)

Balancing Method

Balancing Considers Variants ☐

Parallel Calc. Balancing Optimization

Balancing Optimization Enabled ☒

Consider Excluded from Replenishment ☒

Calculation with Job Queue

Parallel Calculation with Job Queue ☒

Parallel Calc. Run Job Queue with WS ☒

Maximum No. of Attempts to Run

Linked Jobs 🔗 New Line ✂ Delete Line 🔗 🔗

Job ID ↑	Job Type Code	Parallel Calc. Job Queue User	Share Type	Weight	Timeout (Min)	% Share	Job Filter String
→ REPLEN-QTY-PAR1	REPLEN-P1		Manual Weight	1.00	120	50.00	10000.36500
REPLEN-QTY-PAR2	REPLEN-P2		Manual Weight	1.00	120	50.00	36510..R0034

General Setup FastTab:

- **Master Job Timeout Duration (Min):**
 - the time in minutes that the master job should monitor the linked jobs before it times out.
 - it should not be lesser than the timeout value assigned to any linked job.
 - if it is assigned with zero, the master job will never timeout.
- **Timeout Check Interval (Sec):** how frequently, in seconds, the master job should check if a timeout has occurred, for both master job and linked jobs.
- **Balancing Method:** specifies if the item balancing of the linked jobs should be calculated or manually defined. There are three available options:
 - *Calculate* - the item balancing is calculated and assigned by the master job according to the Weight and % Share of the linked jobs, as the RIQ calculation is executed.
 - *Pre-Calculate with Scheduler Job* - the item balancing is pre-calculated with a scheduler job. During the RIQ calculation, the master job skips the item balancing calculation and the system proceeds with the RIQ calculation based on the pre-calculated item range.
 - *Manual* - The master job skips the item balancing calculation and you need to manually adjust the Job Filter String of the linked jobs as needed.
- **Balancing Considers Variants:** when activated, the system will take into account the total number of both the items and variants when splitting the item range, to achieve a more balanced workload between the linked jobs when working with variants.
- **Balancing Optimization Enabled:** when activated, the balancing calculation will exclude the items that are blocked.

- **Consider Excluded from Replenishment:** this setting is used when balancing optimization is enabled. It specifies if the balancing calculation will also exclude items that are Excluded from Replenishment.

Linked Jobs FastTab:

This is where the parallel processing jobs will be assigned to the master job as sub jobs (Linked Scheduler Jobs).

- **Job ID:** the ID of the parallel processing job being assigned.
- **Job Type Code:** the Scheduler Job Type Code assigned to the job.
- **Share Type:** two options are available – Equal Weight or Manual Weight.
- **Weight:**
 - if Share Type *Equal Weight* is selected, then when the Weight value of one Linked Scheduler Job is changed, the Weights of all the other jobs will be automatically updated with the same value.
 - If Share Type *Manual Weight* is selected, then each of the Linked Scheduler Jobs can be assigned with its individual Weight value.
- **Timeout (Min):**
 - the time in minutes that the linked job should run before it times out.
 - it should not be greater than the timeout value assigned to the master job.
 - if it is assigned with zero, the linked job will never timeout.
 - if a timeout occurs, the master job will be notified and the calculation process will be stopped for the affected linked job.
- **% Share:** the workload distributed to each linked job; this is automatically calculated based on the Weights assigned.
- **Job Filter String:** the range of items to be processed by the linked job. Depending on the **Balancing Method** defined for the master job, the item range can either be calculated or manually defined.

3.2 Running Out-of-Stock (OOS) Calculation in Parallel with Background Sessions

3.2.1 Configuring Scheduler Job for Parallel Processing

The setup of parallel processing Scheduler Job for OOS is the same as the setup for RIQ. Refer to section 3.1.1 for more details.

The one difference that you need to take note is to assign the codeunit responsible for OOS calculation to the **Object No.** field in Scheduler Job card. The codeunit is 10012203 (LSC Replen. Out of Stock Mgt.).

Object Setup	
Object Type	Codeunit
Object No.	10012203
Object Name	LSC Replen. Out of Stock Mgt.
Use Web Replication	☐
Uses Scheduler Job Record	☒
Use Job ID	REPLEN-STKOUT
Last Batch ID	
Text	
Code	
Integer	0
Decimal	0.00
Date	
Time	
Boolean	☒
DateFormula	

3.2.2 Configuring Master Scheduler Job and Linked Scheduler Jobs

The setup of master Scheduler Job and Linked Scheduler Jobs for OOS is the same as the setup for RIQ. Refer to section 3.1.2 for more details.