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In this chapter, you'll prepare your transaction data for consolidation, step by step. After learning how to set up the Data Monitor, you'll walk through data integration and key consolidation activities like balance carryforward.

"Transaction Data"

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Chapter 4
Transaction Data

Now that you understand how to set up global parameters and master data specific to SAP S/4HANA group reporting, let's see how to prepare data for consolidations. In this chapter, we'll discuss various Data Monitor tasks that will help you understand the complete process of data collection and preparation for consolidations.

Data collection is one of the critical steps in the corporate close process. It involves collecting data of legal subsidiaries from the Universal Journal in SAP S/4HANA, including manual entries and file uploads. To validate entity data and ensure the data quality, data can also be imported into consolidation table ACDOCU. In addition, you can carry forward year-end balances, roll your net income into retained earnings, and translate the trial balance from the local currency to the group currency.

In this chapter, you'll learn how to set up the Data Monitor and the different ways to integrate financial transaction data for consolidation. We'll also discuss some core data collection concepts such as balance carryforward, calculating net income, journal entries, and data validations.

4.1 What Is the Data Monitor?

The Data Monitor layout lists consolidation units, their groups, and various tasks that to perform on them. This layout also enables you to update the global parameters if required. The purpose of the Data Monitor is to consume the financial data of each consolidation unit and perform various tasks before the financial data is consolidated at a consolidated group level. All the Data Monitor tasks are predefined and ready to use. Each task must be configured and sequenced in the order of execution in the process. You'll open the period and execute the tasks on the consolidation units. After the task is successfully executed, you need to block the task and move to the next task. However, data collection tasks and manual posting tasks can be blocked even without being executed.

The Data Monitor can be accessed using both the SAP Implementation Guide (IMG) via Transaction CXCD and SAP Fiori. In the following sections, we'll take a look at both the layout and the tasks that are available.

4.1.1   Layout

Figure 4.1 shows the Data Monitor layout in SAP Fiori, which is where you can perform all the tasks before you execute consolidations.
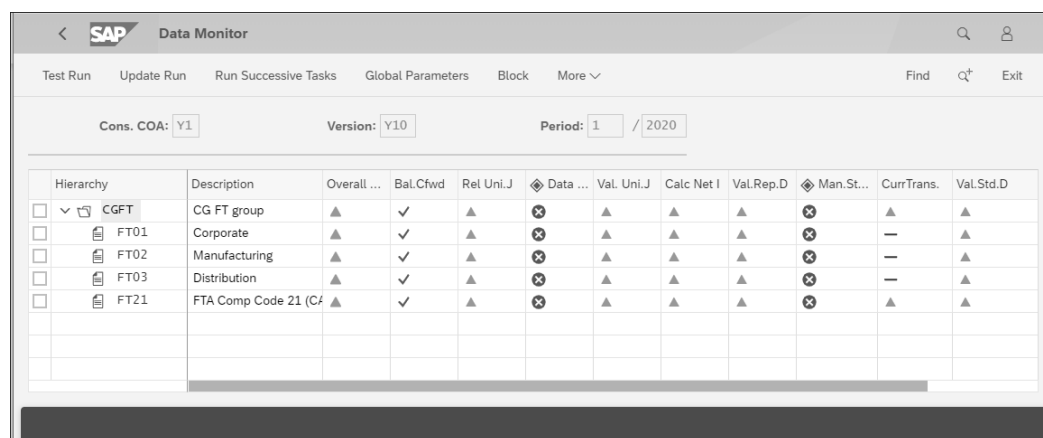

Figure 4.1 Data Monitor Layout

The Data Monitor displays the consolidation group and its units, tasks, and statuses, which means you can run tasks on both the consolidation units and the groups. In addition, you can double-click each status symbol and check the task status. Table 4.1 shows the various task statuses in the Data Monitor; all tasks start out in the **Initial Stage** status.

Task Status	Description
✓	Error free
▲	Incomplete
▬	Initial stage
⊗	Not applicable

Table 4.1 Task Statuses

The Data Monitor displays the organizational units under whatever consolidation group is entered in global settings. You can right-click on the group and see the units that make up that group and check the details related to master data and configuration, such as currency translation, data transfer methods, and so on. The following additional options are available to use in the Data Monitor:

- **Test Run**
  Allows you to simulate the task.
- **Update Run**
  Allows you to change the task status and generate documents.

- **Run Successive Tasks**
  Allows you to run multiple tasks at the same time.
- **Run Successive Tasks w/o Stop**
  Allows you to run multiple tasks at the same time but doesn't stop at milestone tasks.
- **Data and Consolidation Monitor**
  Allows you to run both Data Monitor and Consolidation Monitor at the same time.
- **Save User Layout**
  Allows you to save the layout and retain it when you log off and log back in.

4.1.2   Task

The Data Monitor contains several tasks that can be configured. The following tasks are displayed:

- **Balance carryforward**
  This task is used to update opening balances of the balance sheet.
- **Release Universal Journal**
  This task enables you to release organizational units reported as financial data from the Universal Journal prior to using the data for consolidation purposes.
- **Data collection**
  This task enables you to flexibly upload the reported financial data as well as post group journal entries to correct the reported financial data.
- **Validation of Universal Journal**
  This task enables you to validate the Universal Journal and identify if there are any missing or incorrect subassignments for financial statement (FS) items.
- **Calculate net income**
  This task enables you to calculate and post net income to the derived FS item in the balance sheet and profit and loss (P&L) statement.
- **Reported data validation**
  This task enables you to validate the reported financial data of a consolidation unit in its local currency per the assigned validation method to that consolidation unit.
- **Manual posting**
  This task enables you to manually post group journal entries to make any adjustments to the reported data.
- **Currency translation**
  This task enables you to translate the data of local companies that is in local currency to group currency so that you can use the data for consolidations.
- **Preparation for consolidation group changes**
  This task enables you to adjust the data when a new consolidation unit is acquired or divested from a consolidation group during the fiscal year so that the data during

the time period when the consolidation unit is part of the consolidation group is populated in group financial statements.

- **Standardized data validation**
  This task enables you to validate the financial data of a consolidation unit in its group currency per the assigned validation method of that consolidation unit.

4.2 Configuring the Data Monitor

In this section, you'll learn how to configure the Data Monitor and all the tasks that can be run from the monitor, how to assign them to a standard task group, and how to assign the task group to a dimension.

Table 4.2 lists all the tasks that the Data Monitor can have. In later sections, we'll cover each task in detail.

Task ID	Description	Document Types
1010	Balance Carry Forward	-
1015	Release Universal Journal	0F
1020	Data Collection	00, 01, 02
1030	Calculation of Net Income	-
1050	Validation of Universal Journal	-
1080	Validation of Reported Data (LC)	-
1095	Manual Posting (PL10)	11–14, 16–19
1100	Currency Translation	Original doc types
1130	Preparation for Consolidation Group Change	0Z, 1Z
1180	Validation of Standardized Data (GC)	-

Table 4.2 Data Monitor Tasks

All the tasks to be executed in the Data Monitor needs to be assigned to a task group. The following are initial activities you need to perform while configuring the Data Monitor:

- Check the predefined task groups, and create one if necessary.
- Assign the tasks to a task group.
- Identify the tasks that need to be blocked after execution.
- Identify the tasks that are potential milestones.
- Determine the predecessor for each task.

Because tasks are sets of processes that are required to be executed successfully to prepare for and perform consolidations, you'll encounter tasks in both the Data Monitor and the Consolidation Monitor.

Let's start by defining a task. To do so, execute Transaction CXE9N, and go to **Data Collection for Consolidation • Define Task** to see the screen shown in Figure 4.2. By default, the screen contains a list of standard Data Monitor tasks, but you can always add a new task by selecting the **New Entries** button, which is highlighted in Figure 4.2. Select a **Task**, **Task category**, **Short Text**, and **Medium Text**, and then click the **Save** button.
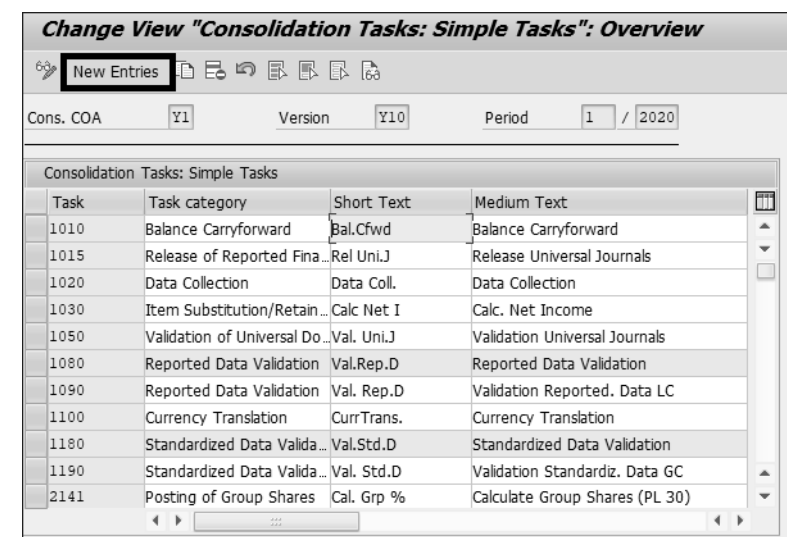
Figure 4.2 Defining Tasks

When you've defined all the tasks, move on to the next step in which you assign tasks to task groups.

Figure 4.3 shows the predelivered task groups for the Data Monitor and the Consolidation Monitor, which contain the tasks that need to be executed before you perform consolidations. In this section, we'll describe **S10: Standard Data monitor**. You can also create a new **Task group** and assign the tasks per your requirements. To access predefined task groups, execute Transaction CXE9N, select **Configuration for Consolidation Processing**, and then select **Define Task Group**. S10 contains all the tasks that you'll perform in the Data Monitor.

Next, go to **Task groups • Assign tasks to task group**, as shown in Figure 4.4, which shows the assignment of tasks to a task group. A task group can't exist without tasks (in this case, we're using the standard content delivered by SAP). All the tasks are assigned to the standard Data Monitor task group (**S10**), which means you can now proceed with the next steps in the configuration.
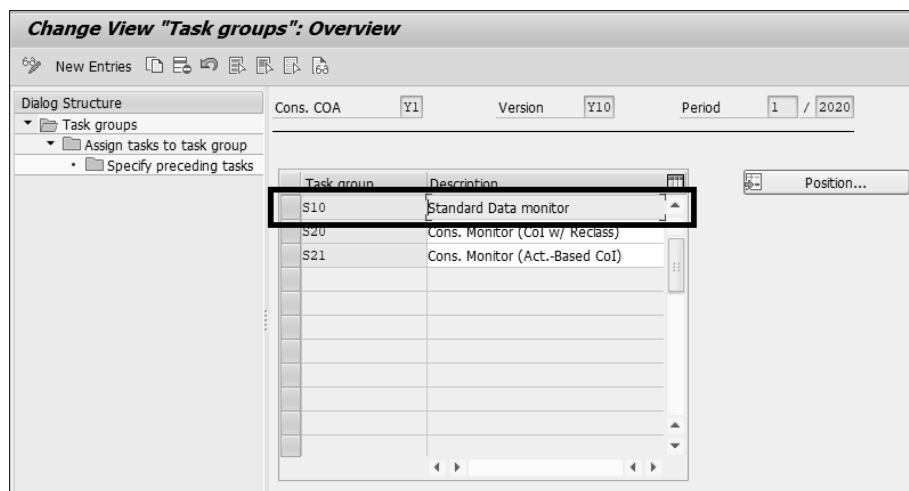
Figure 4.3 Defining Task Groups
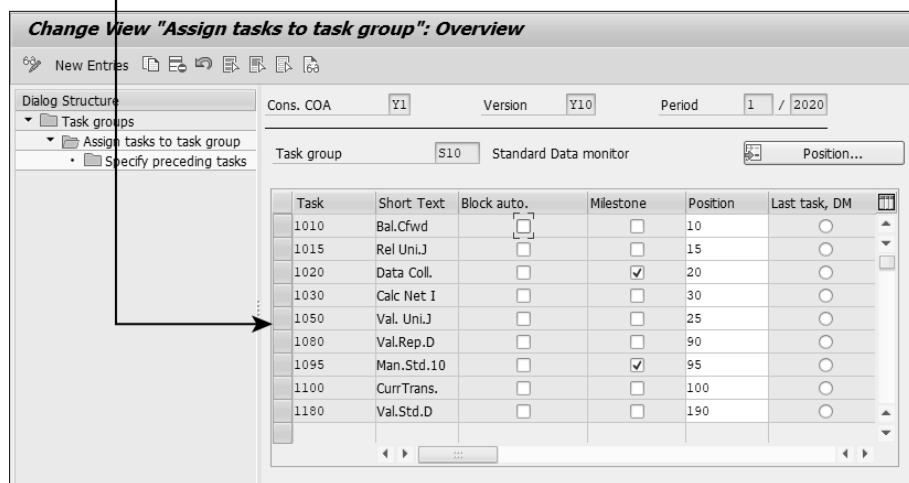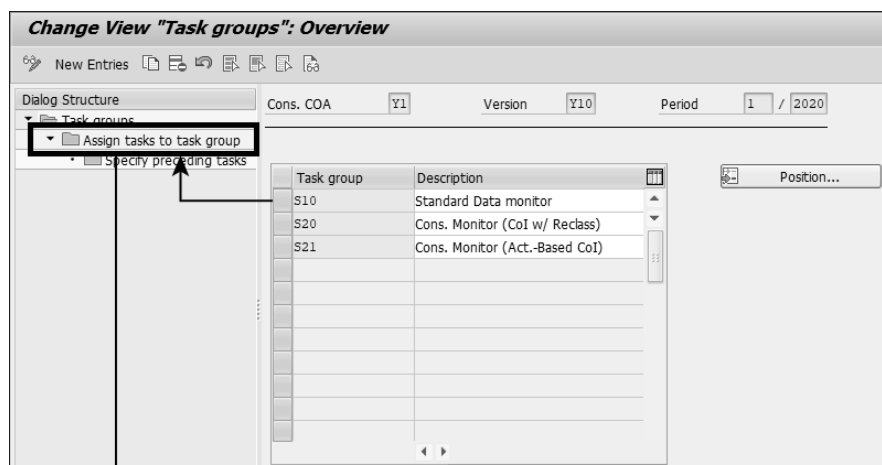
Figure 4.4 Assigning Task to Task Groups

Let's look into the details of the task settings for a deeper understanding of the Data Monitor tasks:

- **Task and Short Text**
  These fields provide the basic details of a task. The preceding example uses SAP-delivered tasks, but you can create custom tasks and assign them to your task group.

- **Block auto.**
  Checking this box blocks any task automatically after it's successfully executed; however, a task can also be blocked explicitly from the Data Monitor.

- **Milestone**
  This setting stops the consolidation process, which is very helpful especially during the automated execution of Data Monitor tasks. When you select a task as a **Milestone** task, you're instructing the system to stop the process after that task is executed. Data collection and manual postings are default milestone tasks.

- **Position**
  Checking this box indicates the position of certain tasks in the Data Monitor based on their numeric values in ascending order.

- **Last task, DM**
  This is a mandatory task in the Data Monitor that indicates the last task to be executed in the Data Monitor in order to execute the Consolidation Monitor without any errors.

Click **Save** when you're done.

You can also create a custom task group per the requirement by selecting the **New Entries** button in the **Change View "Assign tasks to task group": Overview** screen. To access it, execute Transaction CXE9N, select **Configuration for Consolidation Processing**, and enter the **Task, Short Text, Block auto.**, **Milestone**, **Position**, and **Last Task, DM**, as shown in Figure 4.5.
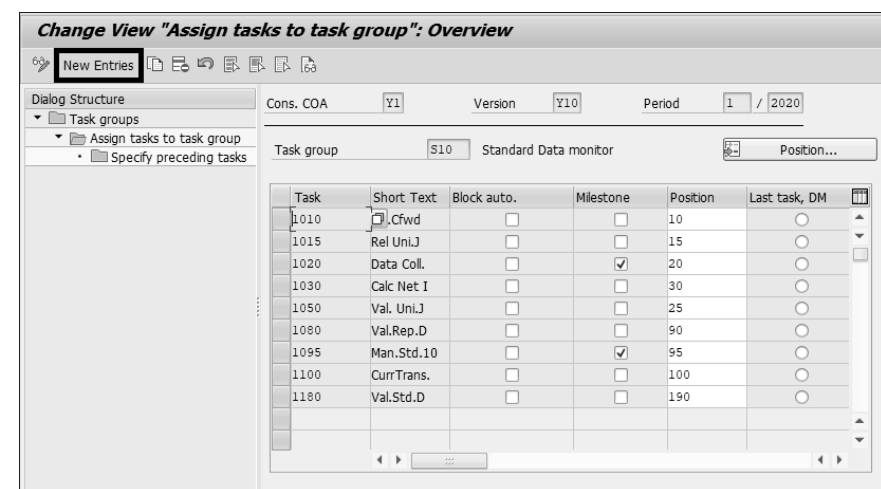
Figure 4.5 Creating a New Task Group

When a new task group is created, you need to assign it to a consolidation dimension. Assignment of task groups is version dependent by default, and it also signifies the period in which a task is effective. The period category gives you the ability to control when a task can be used. The Data Monitor task group and Consolidation Monitor task group contain the corresponding task groups that are used in the Data Monitor and Consolidation Monitor for a version. Figure 4.6 shows the details of the assignment. To access the screen, execute Transaction CXE9N, open **Configuration For Consolidation Processing**, and select **Assign Task Group To Dimension**.
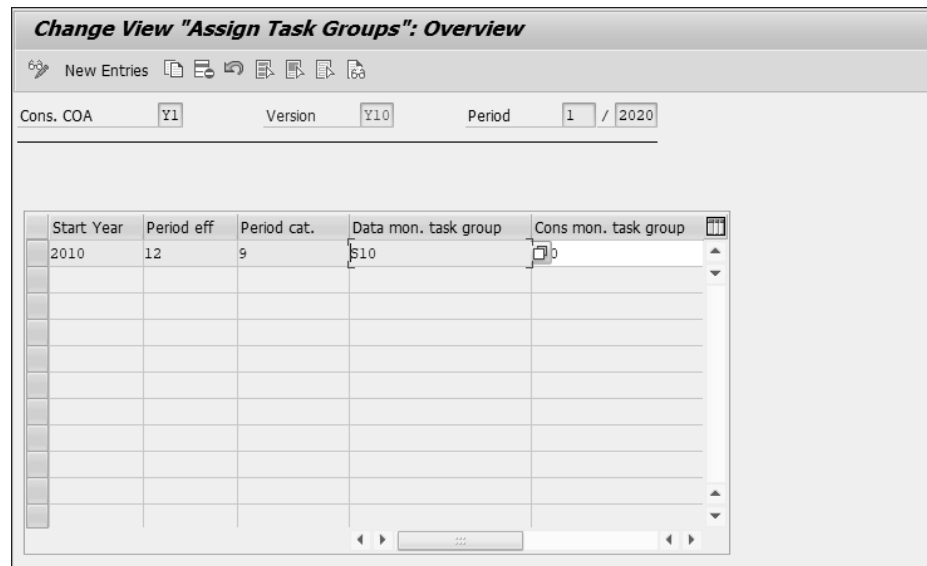
Figure 4.6 Assigning a Task Group to a Dimension

To assign the Data Monitor task group to the dimension for this example, you enter "S10" in the **Data mon. task group** field. After the task group is assigned to a consolidation dimension, you also need to define period categories per your requirements. Figure 4.7 demonstrates a predefined scenario.

Period categories allow you to assign task groups to the dimensions in different periods. Depending on your requirements, you can group the periods in a fiscal year using period categories. Furthermore, period categories give you the ability to use different data entry profiles in different periods for entering data reported by consolidation units. You can create your own period categories for each period, quarter year, half year, and year end, or per your requirements.

To access **Period Categories**, execute Transaction CXE9N, open **Data Collection for Consolidation**, and select **Define Period Categories.** In Figure 4.7, the period categories are defined for year-end, quarter-end, and period-end consolidations. You can also create

additional period categories by clicking the **New Entries** button and entering the following fields (right side of Figure 4.7):

- **Period Type**
  Group accounting periods that have the same data collection requirements for consolidations.
- **Description**
  Enter a text description of the period type/period category.
- **Formula**
  Enter the period values here in which a period type is used.

Click **Save** when you're done.
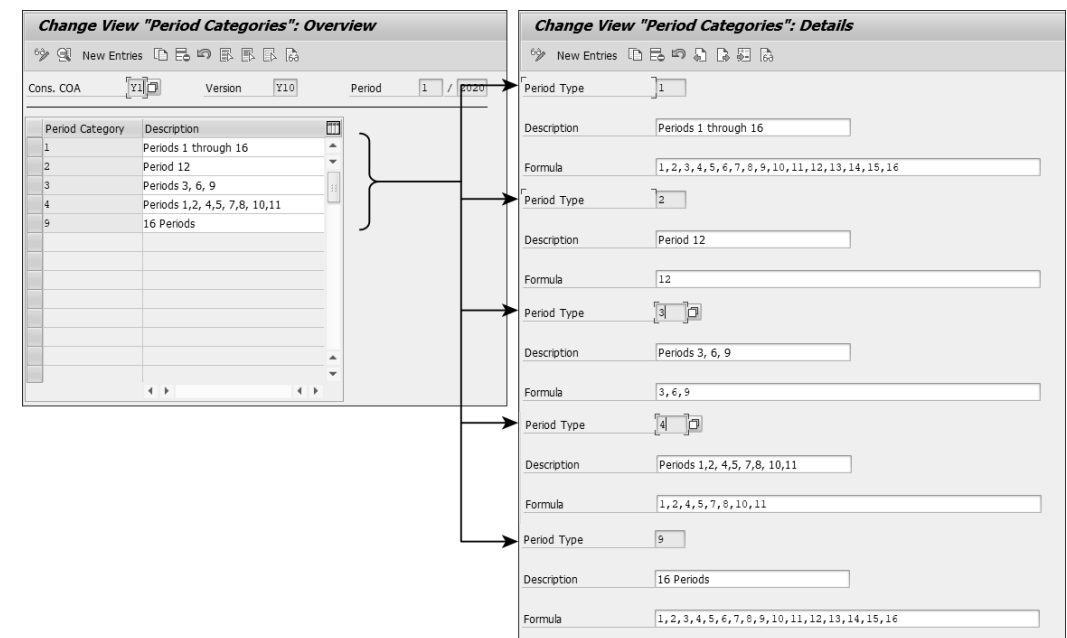
Figure 4.7 Defining Period Categories

In Figure 4.8, the predecessor tasks and task sequencing are shown, which acts as a checklist during the close process. Execution of a task isn't dependent on its preceeding task; however, the preceeding tasks must be executed and blocked so that a task can run successfully. After all the tasks are executed and blocked, the Data Monitor execution is complete. To assign the preceeding tasks, execute Transaction CXE9N, open **Configuration for Consolidation Processing**, and select **Assign tasks to task group** to see all the tasks that you've assigned to the Data Monitor. These tasks can be arranged per your requirements by selecting a task and clicking on **Specify preceding tasks** to select the task that you want to be the predecessor of the selected task.
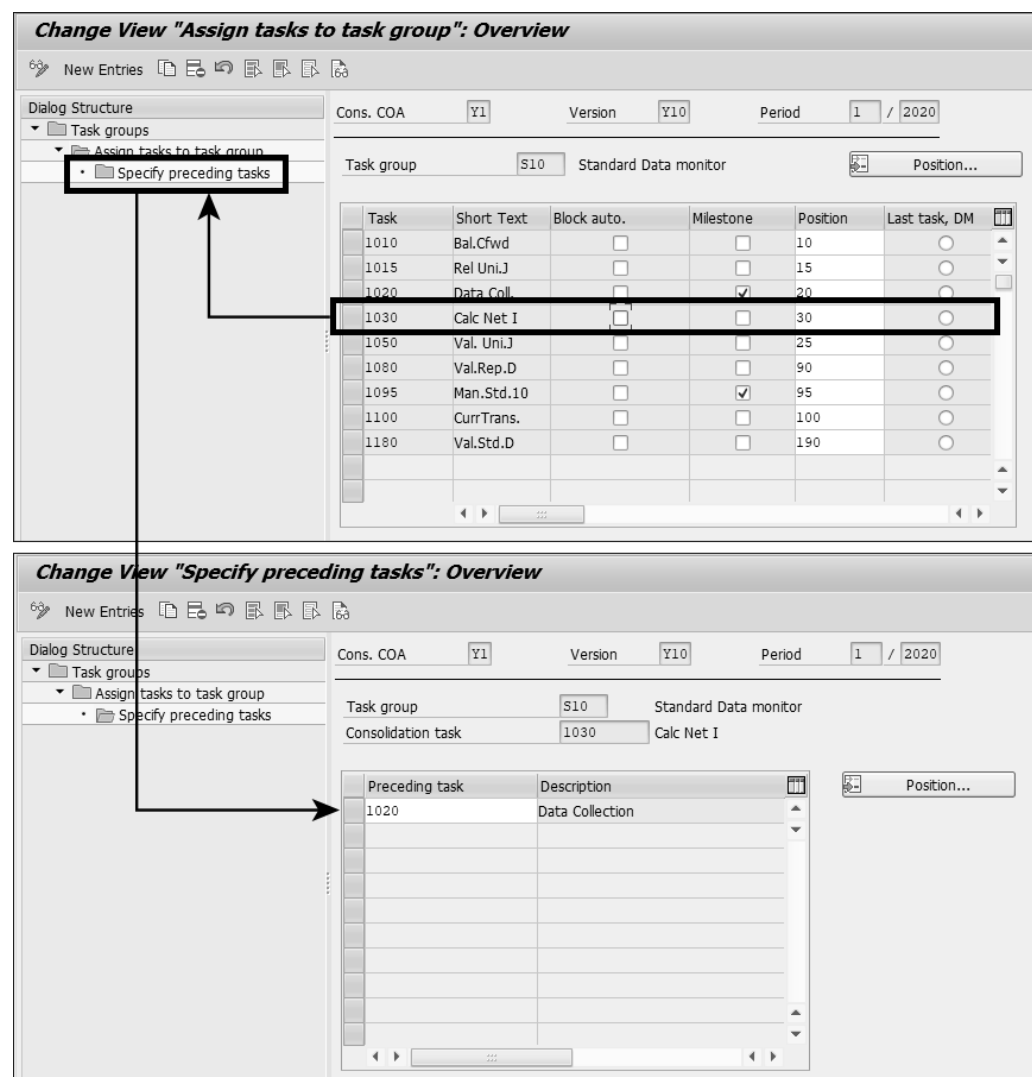
Figure 4.8 Sequencing of Tasks

4.3   Integrating Transaction Data

In this section, we'll discuss the integration of data between the Universal Journal and SAP S/4HANA Finance for group reporting, which is a key step in data preparation for the consolidation process. You need to ensure that any new postings in table ACDOCA are released to group reporting as well as ensure that no unwanted data is getting into group reporting. We'll also discuss the usage of flexible upload option to upload data to group reporting from any other source other than table ACDOCA before we conclude with

an interesting feature of SAP S/4HANA Finance for group reporting, release 1909, which is to import reported financial data of consolidation units using an application programming interface (API).

4.3.1   Universal Ledger

In this section, we'll discuss data loads into SAP S/4HANA Finance for group reporting. At the consolidated group level, this data resides in table ACDOCU. We'll discuss the release Universal Journal task concepts, with which data can be loaded into table ACDOCU so that it can be consumed for consolidations.

Table ACDOCU contains consolidated data and data from other source systems that can be consumed in SAP Analytics Cloud, which enables you to run consolidations on plan data at the group level.

To execute consolidations, you need to release the reported financial data from table ACDOCA. The data release can be done multiple times in the current period. The best practice is to release data for consolidation purposes after locking the accounting period; otherwise, it's highly likely that additional data will be posted if the accounting period is open. If you fail to push it to table ACDOCU during the current period, then your financials won't include that data set.

The following are prerequisites for the release Universal Journal task:

1. Make sure that the period for which you're trying to release the data is open. To do so, select **More • Edit**, and then click on the **Select Display Period Info** option from the Data Monitor (refer to Figure 4.1).

2. All the consolidation units that will be consolidated must have the data transfer method set as **Read from Universal Document** and must have the effective year defined so that you can release the data starting that year. To access these settings, run the SAP Fiori Consolidation Units – Change View app (see Figure 4.9), enter the company code for which you need to maintain the data transfer method ("FT01", for this example), and press Enter. In the **Data collection** tab, select the data transfer method as **Read from Universal Document**, select the effective year, and save.

3. Assign the FS items mappings, which we covered in Chapter 3.

Figure 4.9 shows what the **Data collection** tab for a consolidation unit looks like. You also need to make sure that the period is open before releasing the Universal Journal. To do that in the Data Monitor screen, click on **More • Edit**, and then choose **Display Period Info**, which provides the **Period information** screen where you can see if the period is open or closed (see upper-left portion of Figure 4.9).

Figure 4.9 Prerequisites for Releasing the Universal Journal

Now let's discuss executing the release Universal Journal task. This task is run from the Data Monitor, as shown in Figure 4.10. To execute the task, right-click on the task, and select **Update**. The **Release Reported Financial Data** screen appears, where you can release the reported financial data in the following ways:

- **Reported Financial Data (Totals)**
  Release the data for the current period.
- **Reported Financial Data (Differences)**
  Release any new data and review the prior release and the delta for the current period.
- **Data from Prior Periods Without Release**
  Check the reported financial data from prior periods without releasing.

Make your selection, and click the **Save** icon. When you arrive at the **Release of Reported Financial Data for Consolidation** screen, click **Continue**. You'll receive a success message when you're done, which indicates that you've released the reported financial data and it's ready for consolidations.

At this point, you've completed the execution of the release Universal Journal task, so you can block the task and move on to the next task.

Figure 4.10 Execution of the Release Universal Journal Task

4.3.2   Flexible Upload

SAP S/4HANA Finance for group reporting offers a powerful feature called *flexible upload*, which is used to upload reported financial data into table ACDOCU. You can flexibly upload data in different versions, currencies, formats, and data types, depending on the upload methods. You can execute flexible upload via the Data Monitor or the SAP Fiori Flexible Upload of Reported Financial Data app. This feature is extremely helpful if you have a requirement to upload data of a non-SAP consolidation unit or if you need test data. You must ensure that the period is open before performing a flexible upload, and you must unblock the data collection task for all the periods for the consolidation units.

Figure 4.11 shows the **Consolidation Units** app in SAP Fiori under the **Consolidation Master Data** section. This is the most critical step before you trigger the flexible upload. Here, you need to assign the following methods:

- **Data transfer method**
  You can choose either of the following:
  - **Flexible upload**: Upload flat files to table ACDOCU. This option is widely used when a consolidation unit doesn't report its financials using SAP S/4HANA.
  - **Read from universal document**: Specify that a consolidation unit's data has been read from universal document table ACDOCA in SAP S/4HANA, which is the source. This option is used when a consolidation unit reports its financials in SAP S/4HANA.

- **Upload method**
  You can choose one from the following options. These are predefined, but you can always create an upload method and use it:
  - **CS01** (**Flexible Upload to EC-CS**): This method was used in Enterprise Controlling – Consolidation System (EC-CS) but doesn't have any application in group reporting.
  - **CS02** (**Flex.Upload ECS-CS w/StdgEntr**): This method was used in EC-CS but doesn't have any application in group reporting.
  - **SRD1** (**File Driven Upload Mthd (tab)**): You choose this method when you have a file that has a tab as a delimiter.
  - **SRD2** (**File Driven Upload Mthd (;)**): You choose this method when you have a file that has a semicolon as a delimiter.
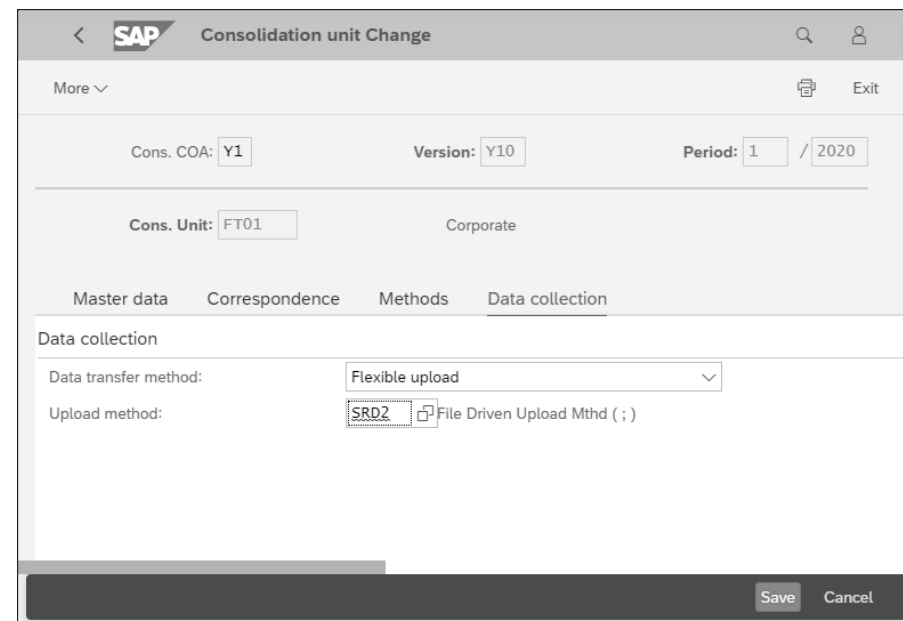
Figure 4.11 Assigning Data Transfer and Upload Methods

Now let's look into preparing the file that you want to upload per your flexible upload requirements. Figure 4.12 shows the template that you use for the flexible upload.

The two methods SRD1 and SRD2 are special file-driven methods and must be used as follows:

- **P**
  Defines that this is a header row.
- **PERIODICAL**
  X represents periodic, and blank represents year-to-date (YTD).
- **UPDATEMODE**
  1 represents **Delete all**, and **2** represents **Overwrite** mode.
- **NSEP**
  1 represents the number format "1,000.00", and **2** represents "1.000,00".
- **D**
  Defines that this is a data row.

Define the data rows as needed for the different input fields. All available input fields are shown in Figure 4.12.

This attached file can be used when uploading data using the methods SRD1 or SRD2. Make sure that you save the file as a *.csv* file with the delimiter ";" (method SRD2) or as a *.txt* file with a tab delimiter (method SRD1).

Figure 4.12 Flexible Upload Template

> **Note**
>
> Changing the upload method definition isn't supported. The structure of the data entry file should follow the method definition. Use methods SRD1 or SRD2 and the respective parameters in the upload file to control the behavior of the file import.

Now let's discuss how you can execute the flexible upload task. Flexible upload can be executed via the Data Monitor as well as by using the SAP Fiori Flexible Upload: Reported Financial Data app.

You must execute the following steps to perform a flexible upload through the Data Monitor, as shown in Figure 4.13:

1. Launch the Data Monitor.
2. Select the relevant task of the consolidation unit for which you want to collect data. Alternatively, you can also select the consolidation group to collect data for all consolidation units included in this group at the same time.
3. Right click, and select **Update**.
4. Click on the **Flexible upload** option.
5. Upload the file, and click the **Execute** button.
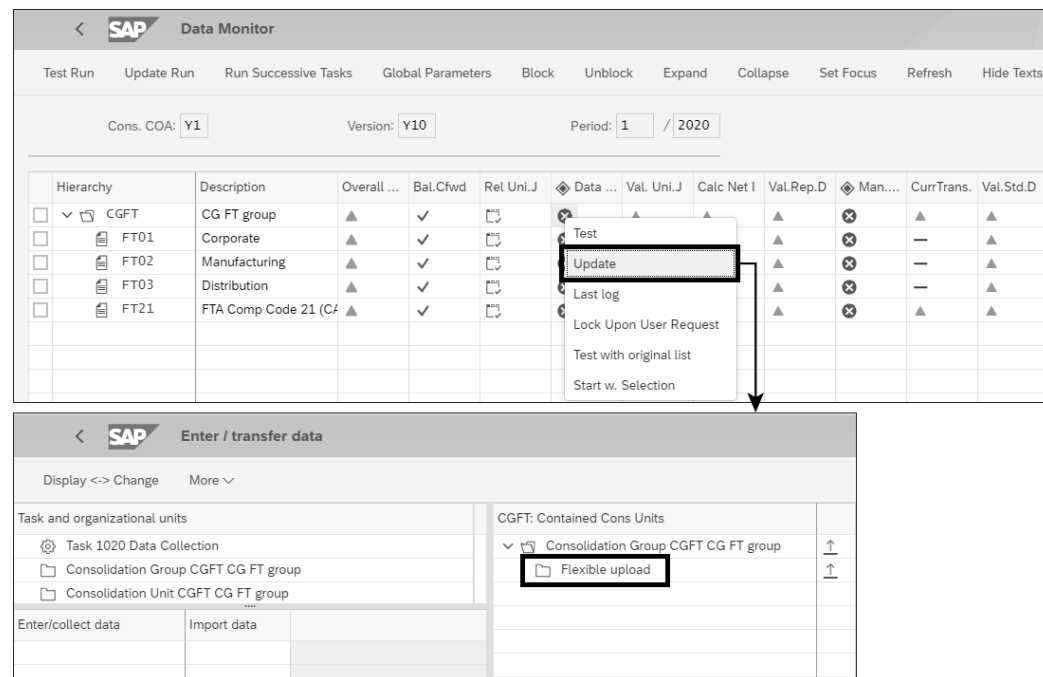
Figure 4.13 Execution of a Flexible Upload Using the Data Monitor

Next, let's review the execution steps when you perform a flexible upload through the Flexible Upload of Reported Financial Data app instead. Follow these steps, as shown in Figure 4.14:

1. Select the **Flexible Upload of: Reported financial data** tile from the **Consolidation Data Preparation** section of the SAP Fiori launchpad.
2. Enter the **Upload method**.
3. Enter the **Physical file name**.
4. Click the **Execute** button.
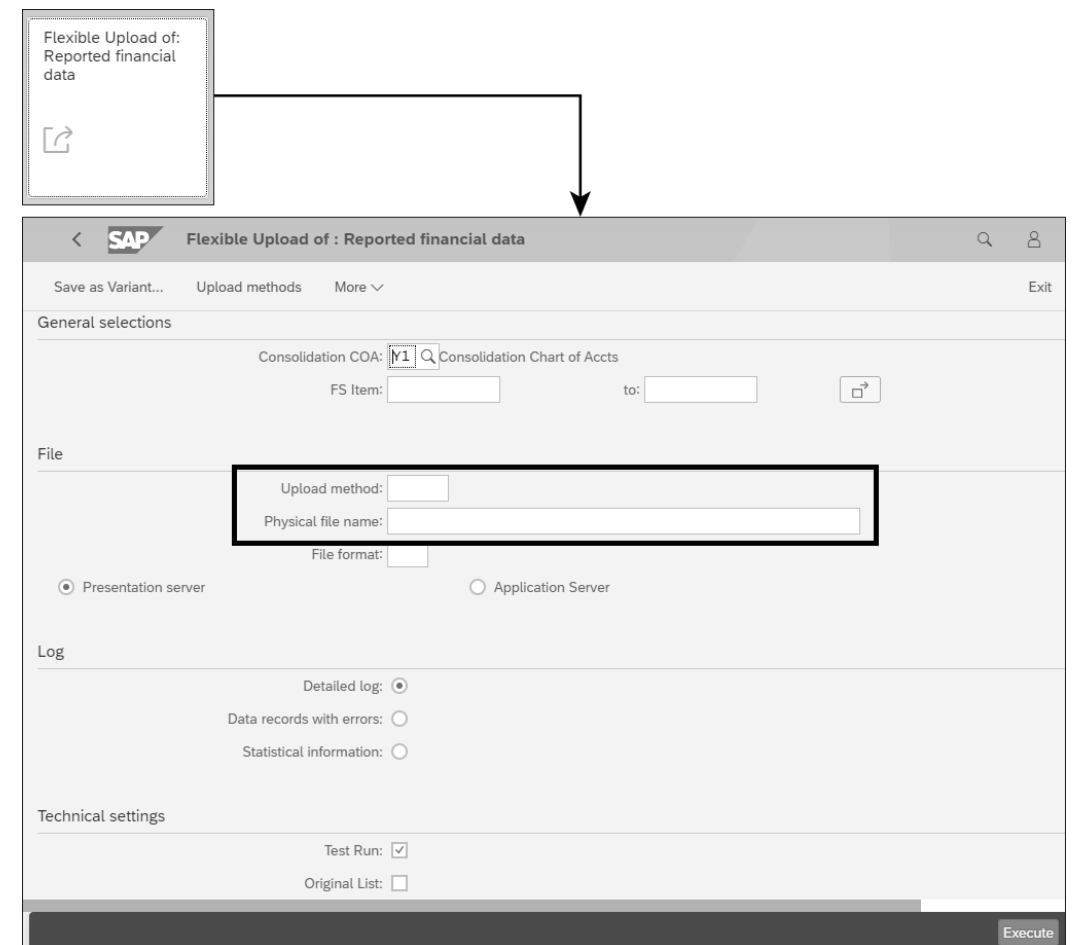
Figure 4.14 Execution of Flexible Upload Using the SAP Fiori App

After the execution is successful, you can check the detailed log for results and block the task (see Section 4.7 for more information). After you click the **Execute** button, the task log screen appears, where you can see the data of a consolidation unit uploaded via flexible upload.

4.3.3 API Integration (Cloud Only)

In the previous sections, we've covered different ways to upload reported financial data into Universal Journal consolidation journal entries (table ACDOCU). Apart from using the data collection task in the Data Monitor and executing the Flexible Upload of Reported Financial Data app, you can also call the following API services:

■ **Reported Financial Data for Group Reporting – Bulk Import and Update**
The purpose of this API is to import the bulk reported financial data of multiple consolidation units into SAP S/4HANA Cloud. It also verifies the data collection requirements, such as whether the period and data collection tasks are open for the required consolidation units, and verifies the mandatory values and relevant master data on the imported data. Finally, it identifies whether the data is YTD or periodic and makes all the required updates after the data is imported.

■ **Reported Financial Data for Group Reporting – Receive Confirmation**
The purpose of this API is to receive the status if the import of the reported financial data is successful or if any data contains errors and requires re-import after correction.

Next, you can map the logical port with the business system for reported data APIs. The two API services are published for SAP S/4HANA Cloud, but you can use them in the SAP S/4HANA environment if you set up the connection in Customizing for SAP S/4HANA for group reporting. Before you set up any connections, you need to create a logical port in service-oriented architecture (SOA) management for API services, which can be accessed using Transaction SOAMANAGER (typically done by the Basis team).

Figure 4.15 depicts the navigation and options for setting up the connections for APIs. To access, you need to execute Transaction CXE9N, open **Data Collection for Consolidation**, and select the **Map Logical Port with Business System for Reported Data API** option.
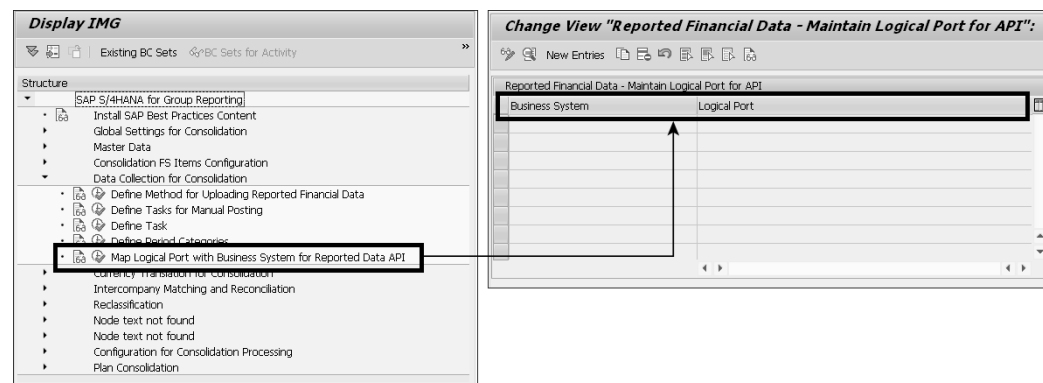
Figure 4.15 Setting Up the Connection for the Inbound and Outbound API Services

Enter the following:

■ **Business System**
Enter the system name for the inbound Reported Financial Data for Group Reporting – Bulk Import and Update API. The business system is also helpful in delivering back the status confirmation to the source.

■ **Logical Port**
Enter the ID of the logical port that you created in SOA management.

Click **Save** after entering the details to finish the mapping.

4.4 Plan Data Integration

Performing consolidations on plan data is another important feature of SAP S/4HANA Finance for group reporting. In this section, we'll discuss the integration of SAP Analytics Cloud and SAP S/4HANA Finance for group reporting and the steps involved in consolidating the plan data.

One of the main reasons that you would consolidate plan data is to compare the plan data and actual data on a periodic or YTD basis.

The following activities are achieved through this integration, as shown in Figure 4.16:

■ Establish a connection between SAP S/4HANA and SAP Analytics Cloud.
■ Transfer data from the Universal Journal entry line items (table ACDOCA) to SAP Analytics Cloud.
■ Enable the planning process in SAP Analytics Cloud using the unconsolidated data that is transferred from table ACDOCA.
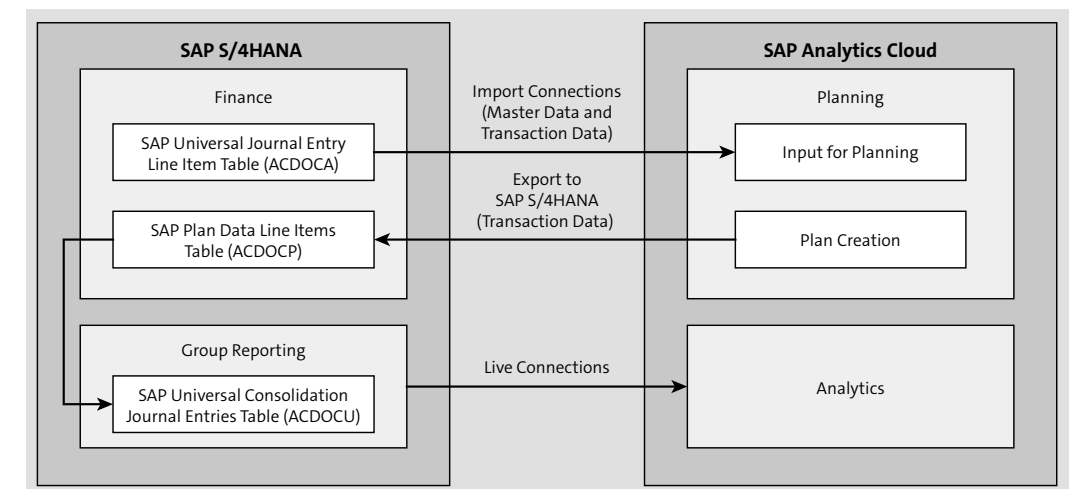
Figure 4.16 Integration between SAP S/4HANA and SAP Analytics Cloud

- Use SAP Analytics Cloud planning features, such as value-based drivers and spread (taking values from higher levels and spreading them to lower levels), to derive the plan data from the data that has been imported from table ACDOCA, which can then be used to populate the predelivered plan version.
- Export the planned transaction data to the plan data line items (table ACDOCP) to perform consolidations.
- Enable the Universal Journal consolidation journal entries table (table ACDOCU) to read data from the plan data line items (table ACDOCP) for group reporting purposes.

For more information on SAP Analytics Cloud integration, see Chapter 11, Section 11.4.2.

4.5   Balance Carryforward

Balance carryforward is one of the key activities of year-end close. It involves carrying forward account balances into the new fiscal year. SAP S/4HANA for group reporting has a predefined business rule that helps you achieve the carryforward. When you run balance carryforward, the system pulls the balances of relevant FS items from the previous fiscal year to the current fiscal year (i.e., opening balances in your balance sheet for the current year). The balance carryforward is a mandatory task for period 001 of each year in the Data Monitor. You also run balance carryforward in financial accounting prior to running it in group reporting so that the prior year balances are carried forward at both the local and group levels.

In this section, we'll discuss setting up balance carryforward in SAP S/4HANA Finance for group reporting in detail, then look into the execution of this task in the Data Monitor, and finally validate the results.

4.5.1   Setting Up Balance Carryforward

In this section, we focus on the step-by-step configuration of the balance carryforward business rule. Before we move on to any further steps, you need to ensure that the prior year is closed, and the period in which you're about to run the balance carryforward is open. Basically, you're carrying forward the year-end balances stored in FS items from the previous year to the current year, and the system allows you to carry forward the balances based on the FS item type property. You can relate this to the account type in earlier versions of SAP consolidation tools. At the end of the year, for the financial data of consolidation units in SAP S/4HANA, the system will reclass the net income to retained earnings, which is a balance sheet account. After this is done, you have your final ending balance sheet, which you carry forward. Balance carryforward writes data to period 000 in table ACDOCU. If the previous year's data changes, then you need to run the balance carryforward again. For this reason, the FS item property is crucial.

Financial Statement Items

Figure 4.17 shows the FS items and their corresponding FS item types. To access this screen, in SAP Fiori, under the **Consolidation Master Data** section, select the **Define FS Items** tile, choose **Consolidation COA,** and click **GO**. The following **FS Item Type** options are displayed:

- **Asset (AST)**
  This FS item type is carried forward by default.
- **Liabilities and Equity (LEQ)**
  This FS item type is carried forward by default.
- **Income/Expense (INC/EXP)**
  These FS item types aren't carried forward by default.

Balance carryforward keeps the original document type. Only document types of posting level 01 are carried forward to a document type of posting level 00.

Figure 4.17 Defining FS Item Types

One of the most important steps in the configuration of the balance carryforward is setting up the FS items that need to be carried forward. Here, we'll discuss an SAP-defined scenario, which will help you understand how to set up the FS items that are to be carried forward. To do so, execute Transaction CXE9N in SAP GUI, go to **Consolidation FS Items Configuration**, and select the **Specify FS Items to be Carried Forward** option.

> **Note**
>
> Remember that FS items are carried forward in both local currency and group currency.

Figure 4.18 shows you the default SAP-delivered configuration for specifying which FS items need to be carried forward. You can always click on **New Entries** and do any custom configurations required. Apart from specifying the FS items to be carried forward, you also specify the subitem category and subitem for each FS item. You can relate subitems to transaction types/flow dimensions in earlier versions of SAP consolidation tools, which was covered in Chapter 3. The **Change View "Items to be Carried Forward:" Overview** screen on the left side of Figure 4.18 shows you all the FS items that are configured to be carried forward. Select an FS item and click on **Details** (magnifying glass icon) to see the details of the FS item that you want to be carried forward:

- FS item 317000 is the current year retained earnings controlling share.
- FS item 319000 is the current year retained earnings clearing FS item.
- FS item 321150 is the current year retained earnings noncontrolling share.
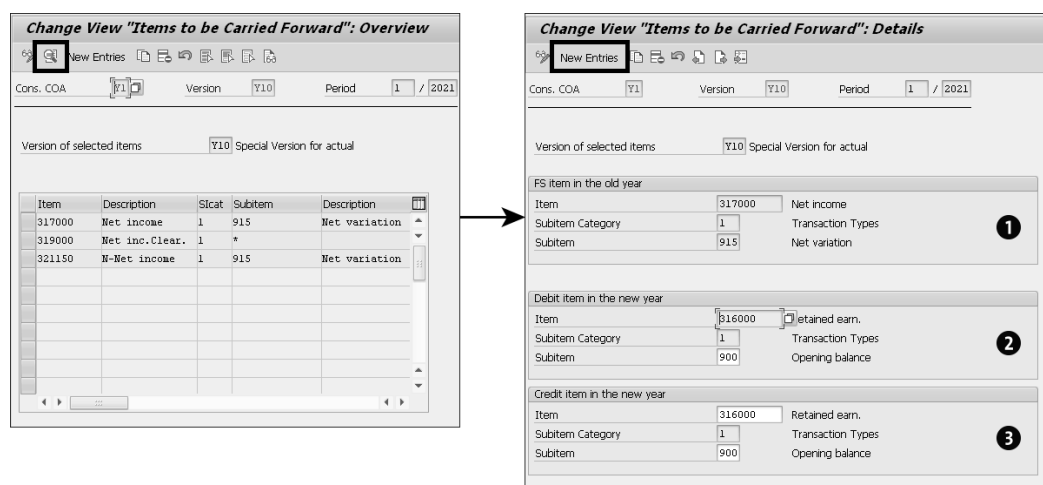
Figure 4.18 Define FS Items to be Carried Forward

Now let's look into **Change View "Items to be Carried Forward": Details** screen, shown on the right side of Figure 4.18, which describes the details of those FS items:

❶ FS item 317000 represents the annual net income in the prior year balance sheet, which reflects the net income/loss from FS item 799999 in the P&L statement.

❷ When you execute the balance carryforward, the amount recorded on the FS item annual net income (317000) of the previous year is carried forward to the FS item retained earnings (316000) of the current year, if the balance is a debit balance.

❸ When you execute the balance carryforward, the amount recorded on the FS item annual net income (317000) of the previous year is carried forward to the FS item retained earnings (316000) of the current year, if the balance is a credit balance.

If a requirement calls for having your own retained earning accounts or FS items, you can select **New Entries** and select FS items and subitems so that the net income is carried forward to the retained earnings, based on the FS items selected.

General Ledger Accounts

So far, we've covered setting up the FS items to perform balance carryforward. Now, let's discuss the general ledger accounts that need to be carried forward. Every general ledger account in SAP S/4HANA has a corresponding FS item in group reporting. In other words, the balances associated with a general ledger account will eventually be reflected in FS items, which requires the general ledger account to be updated while you set up the balance carryforward.

Figure 4.19 demonstrates an SAP predefined setting. To access this screen, execute Transaction CXE9N in SAP GUI, choose **Consolidation FS Items Configuration**, and select the **Specify Account Numbers to Be Carried Forward** option.
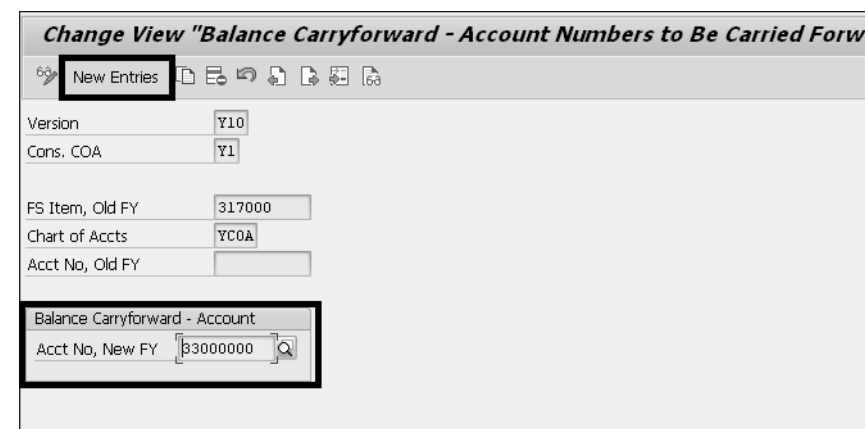
Figure 4.19 Defining the General Ledger Accounts That Need to Be Carried Forward

For the FS item annual net income 317000 in the prior year, the general ledger account 3300000 is used during balance carryforward as the target general ledger account in the current year. This general ledger account also needs to be mapped to retained earnings FS item 316000 in the current year so that the net income matches the retained earnings. However, this is SAP-delivered configuration; if you need to configure the general ledger accounts per your own requirement, you click **New Entries** and add the required general ledger accounts.

Subitems and Subitem Categories

Now let's look into the last setting that you need to configure before you're ready to kick off the balance carryforward business rule from the Data Monitor in SAP S/4HANA Finance for group reporting.

While discussing the details of FS items that need to be carried forward in previous sections, we came across subitems and subitem categories that need to be specified. To do this, execute Transaction CXE9N, expand **Master Data**, and select **Define Subitem Categories and Subitems**.

You'll see the predelivered content. In balance carryforward, you're concerned only about subitem category **Transaction Types**, as shown on the left side of Figure 4.20. Transaction type **915** is a net variation used for net income (profit/loss). When you select it, you further encounter the following subitems, as shown on the right side of Figure 4.20:

- **Carry forward to subitem**
  The ending balances are written to transaction type 900 when balance carryforward is run.

- **Retire./divest.subitem**
  This transaction type captures the flow of divesting a subsidiary in transaction type 998 from transaction type 915 in the current period and compares it with the ongoing operations of the subsidiary.

- **Acquisition subitem**
  This transaction type captures the flow of acquisition of a subsidiary in transaction type 901 from transaction type 915 in the current period and compares it with the ongoing operations of the subsidiary.
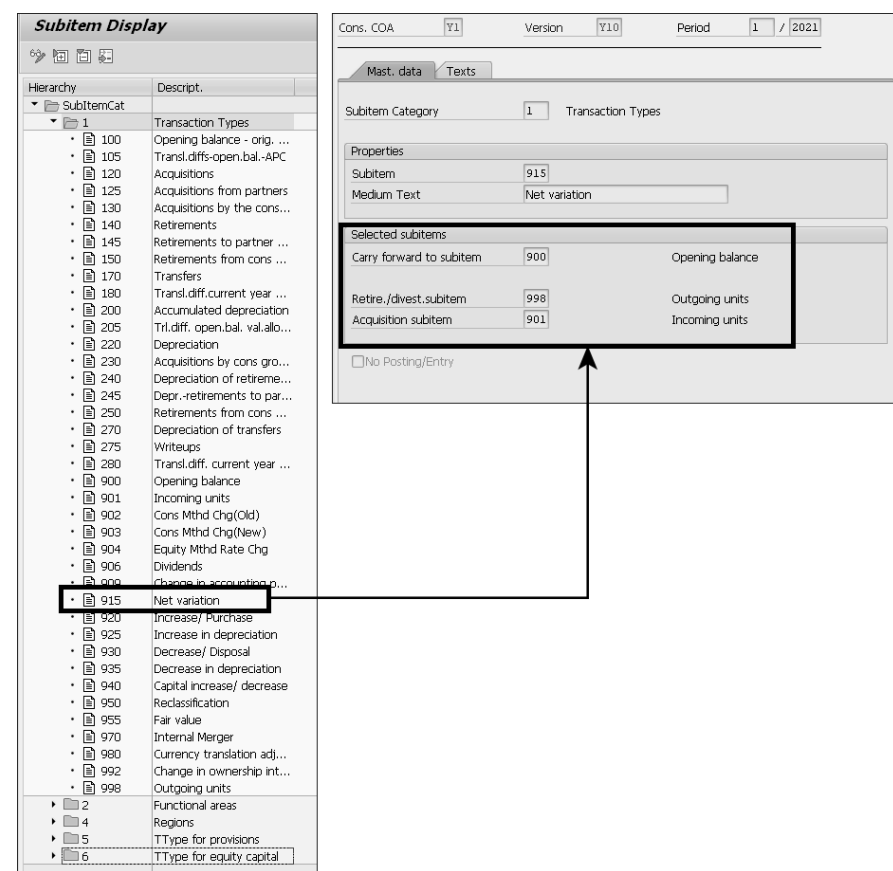
Figure 4.20 Define Subitem Categories and Their Subitems

You can always click on the transaction type and choose any transaction type you want per your requirements.

The system is now set up to allow you to run the balance carryforward. Let's now move on to executing the balance carryforward via the Data Monitor and validating the results.

4.5.2   Executing and Validating the Balance Carryforward

Now that the configuration of balance carryforward is complete, you can execute the business rule and review the results. You should also keep in mind that the prior year should be closed. If the prior year isn't closed and you ran the balance carryforward anyway, you need to run the rule again after the books are closed for the prior year to make sure that you're not missing any transactions. But the best practice is to run the balance carryforward after the prior year is closed. You also should make sure that the period in which the balance carryforward is about to run is open. You can validate this by selecting **More • Edit** from the upper-right corner of the Data Monitor screen and clicking **Display Period Info**.

You run the balance carryforward in the Data Monitor, as shown in Figure 4.21. You can run the balance carryforward for a group or for a consolidation unit by right-clicking the **Bal.Cfwd** task for the group or consolidation unit and clicking **Update**. You should see a green checkmark if the balance carryforward has run without any errors. You can also select the other options as needed:

- **Test**
  This option checks the readiness of the task.

- **Last log**
  This option provides you with the details of the log that was generated the last time the task was executed.

- **Execute in Background**
  This option provides you the flexibility of running a task in the background while performing other duties.

- **Start w. Selection**
  Similar to global settings, this option enables you to select details such as consolidation unit, consolidation group, version, and so on.

- **Test with original list**
  This option gives you the details of the first time the task was executed.

- **Lock Upon User Request**
  This option enables you to lock the task.

- **Block**
  After you successfully complete this task, you'll block the task before moving on to the next task, so that no one can rerun this task, which could be a Sarbanes-Oxley (SOX) Act violation.
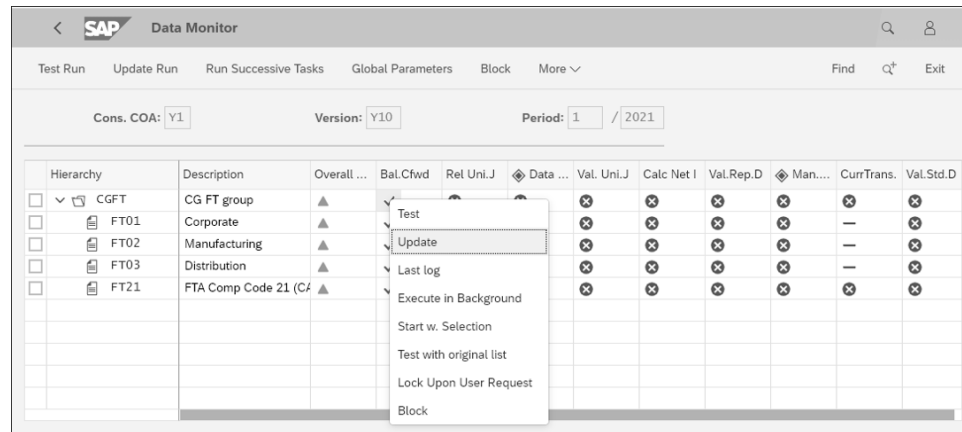
Figure 4.21 Executing Balance Carryforward

Figure 4.22 provides you the output of the balance carryforward task, showing the following:

❶ The 2020 balances are carried forward to 2021.

❷ The 915 subitem, which is the net variation in 2020, is copied to the 900 subitem, which is the opening balance for 2021.

❸ The ending balances of balance sheet FS items for 2020 are successfully carried forward to the opening balances of the balance sheet FS items for 2021.

Figure 4.22 Validating Balance Carryforward

You should now be able to configure and run the balance carryforward task in the Data Monitor as one of the first steps in preparing for consolidation. We'll now move on to other tasks of the Data Monitor and gain more in-depth understanding of data collection in SAP S/4HANA Finance for group reporting.

4.6   Calculation of Net Income

In this section, we discuss how to calculate net income in SAP S/4HANA Finance for group reporting. We'll review the predelivered content, and then discuss how to calculate net income and validate the results. Before we jump into any configuration, you need to understand what net income is and how it's calculated in general. Net income is the net earnings of a company, which is calculated as total sales minus total expenses (expenses include cost of goods sold [COGS], selling expenses, general and administrative expenses, operating expenses, depreciation, interest, taxes, etc.). This number appears on a company's P&L statement and indicates the company's profitability and how a company is performing based on revenue and expenses of a consolidation unit.

Calc.Net Income is a mandatory task in the Data Monitor. With this task, FS item **Net Income/Loss** (P&L) in the reported data will be calculated and recorded (without any document number) to FS item **Net Income** (balance statement). To enable this, you need to configure the FS items to enable automatic postings, which can be done in SAP GUI by executing Transaction CXE9N, expanding **Consolidation FS Items Configuration**, and selecting **Specify Selected FS Items for Automatic Postings**.

The items are defined as selected FS items for the calculation of retained earnings and automated deferred tax calculation. They include annual net income (balance statement), annual net income (income statement), deferred tax asset and liability, and deferred tax expense.

Figure 4.23 shows setting up the balance sheet annual net income FS items that the system will use to post financial statement imbalances in the **ANI, B/S** tab. Figure 4.24 shows setting up the P&L annual net income FS items that the system will use to post financial statement imbalances in the **ANI, I/S** tab. The system calculates the imbalance and then posts an automatic balancing adjustment depending on how the retained earnings are set up.

The SAP system calculates the imbalance and then posts an automatic balancing adjustment. The automatic adjustment is dependent on how retained earnings are treated:

- When stating the appropriation of retained earnings at the end of the income statement, an adjustment to retained earnings occurs.

- When stating the appropriation of retained earnings in the balance sheet, an adjustment to annual net income occurs.
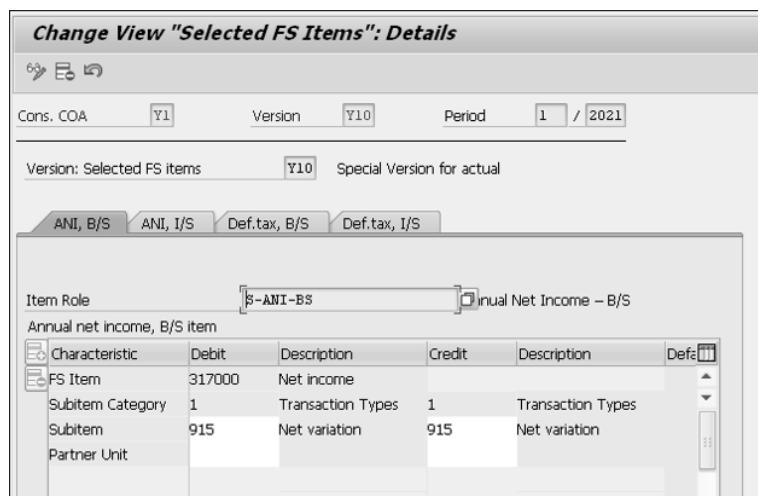
Figure 4.23 Specifying FS Items for Automatic Postings: ANI, B/S Tab
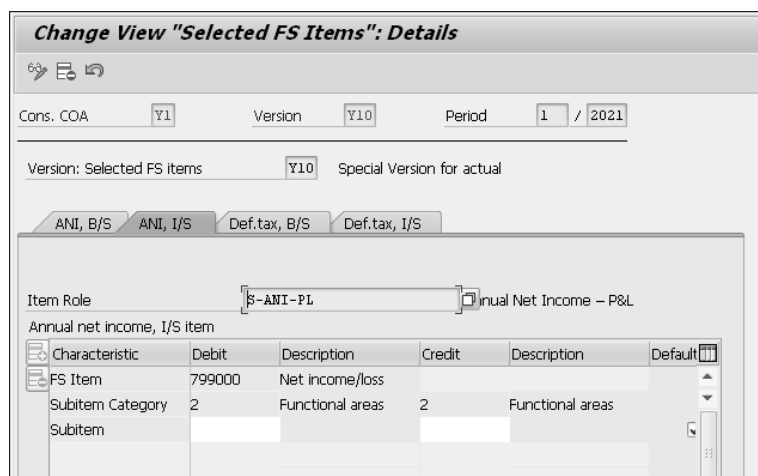
Figure 4.24 Specifying FS Items for Automatic Postings: ANI, I/S Tab

> **Note**
>
> The items you specify are dependent on the consolidated chart of accounts and the consolidation version.

For automatic entries, you need to feed the system the details of the FS items. In the previous two steps, you specified the FS items that you want the system to use to post financial statement imbalances. Table 4.3 shows an example related to net income calculation.

Balance Sheet		P&L Statement	
Total assets	100,000	Total revenue	(50,000)
Total liabilities	(75,000)	Total expenses	25,000
Net income	(25,000)	Net income	25,000

Table 4.3 An Example of Net Income Calculation

In the balance sheet, you derive net income based on the following formula:

Asset = Liabilities+ Equity + Net income

In P&L statements, you derive net income based on the following formula:

Revenue + Expense = Net income

You define the selected FS items for automatic posting of deferred taxes by navigating to the **Def.tax, B/S** tab (upper part of Figure 4.25) where you can specify your tax asset and tax liability FS items that are part of the balance sheet, as well as specify the **Transaction Type**. The lower part of Figure 4.25 shows the **Def.tax, I/S** tab where you specify the income statement FS items and, as this is related to the income statement, you use **Functional area** as the subitem rather than **Transaction Type**.
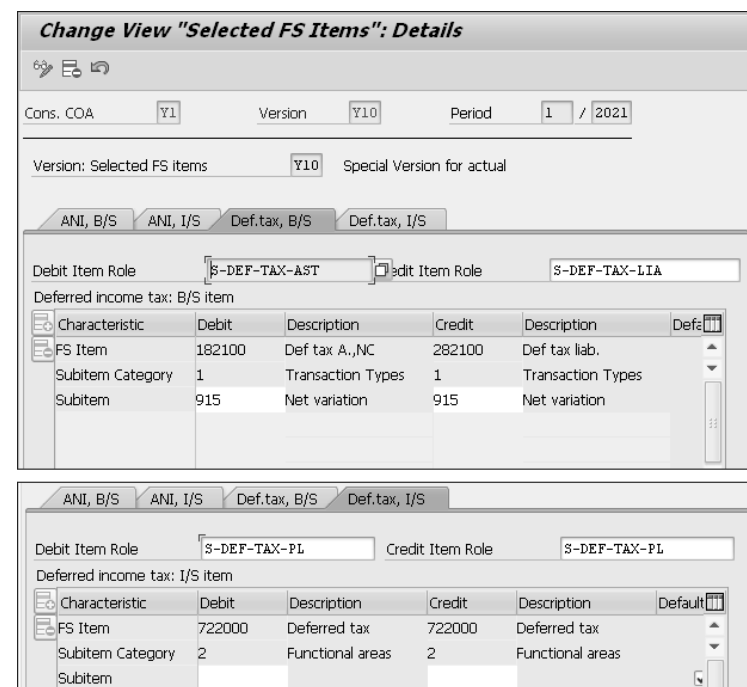
Figure 4.25 Specifying FS Items for Automatic Postings: Deferred Tax Balance Sheet and Income Statement

The taxes of all consolidation unit financial statements should be aligned with the group's earnings. However, there can be differences due to consolidation activities. Deferred taxes should be limited to balance temporary differences in earnings rather than balancing the tax expenses that are too high or too low in the future periods.

Here the deferred tax asset (182100) is balanced out with deferred income tax liability (282100) on the balance sheet, and the deferred tax (722000) is credited/debited on the income statement accordingly.

You can specify items by selecting the item role. If this is required for items, you must also specify subitems. **Item Role/Debit Item Role/Credit Item Role** is a FS item attribute that you need to specify here, which must have already been created while defining the FS items, as covered in Chapter 3. You can review the FS item roles for each FS item by accessing SAP Fiori and selecting the **Define FS Items** tile under **Consolidation Master Data** to open the app, as shown in Figure 4.26. An FS item role is an attribute that you use for automatic posting, for example, rolling your net income into retained earnings. Generally speaking, there is one-to-one mapping for FS item and FS item role.

Wherever its applicable, you can enhance the FS item role with subassignments. Figure 4.26 shows you the item roles that are maintained for FS items, which in turn are used in the net income calculation.

Figure 4.26 Define FS Item Roles

Now that you've configured the net income calculation task, you can execute the task in the Data Monitor. To do so, access SAP Fiori, and select the **Data Monitor** tile under **Consolidation Data Preparation.** Figure 4.27 shows you the execution process in Data Monitor. Click the **Update** option.

With the task configured and executed, it's now time to validate the results via the **Group Data Analysis** tile under **Group Reports**. Figure 4.28 shows that the system has posted the balances to the balance sheet annual net income FS items as well as P&L annual net income FS items.

Figure 4.27 Execute the Calculate Net Income Task

Figure 4.28 Validating the Results of the Net Income Calculation Task

With this, you've completed the setup and execution of the calculate net income task in the Data Monitor.

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Group Reporting with SAP S/4HANA

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