

# How to Calculate Multi Shift Depreciation of Assets in SAP?



## Applies to:

Article applies to FICO functional consultants in SAP practice. For more information, visit the [Operations homepage](#).

## Summary

This article describes the configuration and front end procedures for calculating multi shift depreciation of assets in SAP.

**Author:** Dwarakanath N

**Company:** Infosys Technologies Ltd

**Created on:** 22<sup>nd</sup> February 2010

## Author Bio



Dwarakanath is a certified functional consultant with Infosys Technologies Ltd and has over 3 years of experience in SAP Finance and Controlling module and over 9 years of experience in total. He is a qualified cost accountant (ICWA), Master of computer applications (MCA) and Master of Business Administration (MBA).

## Table of Contents

1. Configuration Steps: .....	3
2. Details required for calculating multi shift depreciation: .....	4
3. Calculation of Variable portion: .....	4
4. Formula for calculating multi shift depreciation: .....	4
5. Front end Asset master updation: .....	6
Related Content: .....	9
Disclaimer and Liability Notice.....	10

## 1. Configuration Steps:

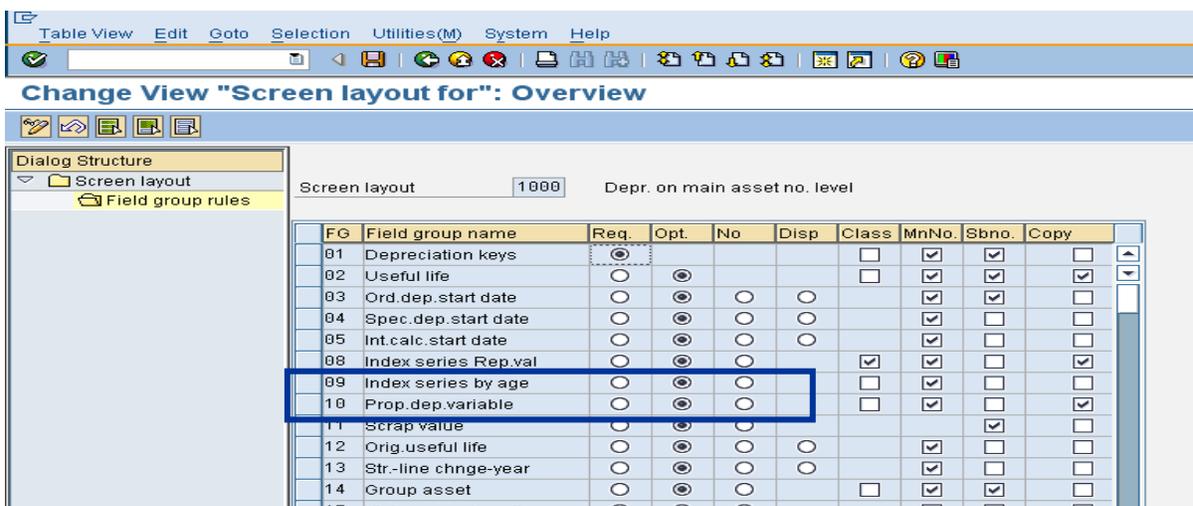
- Multi-shift factor to put it as optional in screen layout. Once it is optional, it will be shown in Time dependant tab in asset master transaction.

Path: SPRO -> Financial Accounting -> Asset Accounting -> Master Data -> Screen Layout -> Define Screen Layout for Asset Master Data. Put Multi shift factor as "Optional"



- Variable portion of depreciation (Prop. dep. variable) to put it as optional in screen layout. Once it is optional, it will be shown in the depreciation terms in asset master transaction (double click the respective depreciation area and update the variable portion percentage)

Path: SPRO -> Financial Accounting -> Asset Accounting -> Master Data -> Screen Layout -> Define Screen Layout for Asset Depreciation Areas. Put Prop dep. variable as "Optional"



## 2. Details required for calculating multi shift depreciation:

- Depreciation Rate / useful life - in customization / asset master transaction
- Shift Factor - in time dependant tab in asset master transaction
- Variable depreciation - in depreciation area in asset master transaction

## 3. Calculation of Variable portion:

Divide the single shift rate with the double shift rate, which is considered as the fixed portion for calculation purpose, then deduct the fixed portion percentage from 100% and the resultant percentage is considered as variable portion percentage.

Example: Single shift rate is 4.75% and double shift rate is 7.42%

Fixed portion calculation =  $4.75/7.42 * 100 = 64.0162$

Hence variable portion will be  $100 - 64.0162 = 35.9838$  (this needs to be updated in depreciation area in asset master transaction)

## 4. Formula for calculating multi shift depreciation:

For calculation purpose the shift factor for double shift is considered as the base and shift factor for single and triple shift is derived accordingly. Hence the shift factor base for double shift depreciation is 1 and for single and triple shift will be 0 and 2.

Depreciation key needs to be created only for double shift rate in customization and based on shift factor and variable depreciation portion, the depreciation rate for single and triple shift will be calculated accordingly.

**Example:** Calculation of depreciation for INR 10,000 based on straight line method for Plant and Machinery asset:

As per Part IV of Section 350 of the Companies Act, 1956 the rates of depreciation for plant and machinery (not being a ship) other than continuous process plant for which no special rate has been prescribed, the straight line rate would be single shift 4.75%, double shift 7.42% and triple shift 10.34%

Hence Single shift depreciation amount for INR 10,000 = INR 475.00

Hence Double shift depreciation amount for INR 10,000 = INR 742.00

Hence Triple shift depreciation amount for INR 10,000 = INR 1034.00

Single shift: Dep Rate 4.75% -- Fixed 64.0162% -- Variable 35.9838% -- Shift factor 0

Double shift: Dep Rate 7.42% -- Fixed 64.0162% -- Variable 35.9838% -- Shift factor 1

Triple shift: Dep Rate 10.35% -- Fixed 64.0162% -- Variable 35.9838% -- Shift factor 2.1\*\*

\*\*Here for Triple shift 2.1 is updated for shift factor in order to get nearer to 10.34% for INR 10,000.

Depreciation Percentage for double shift factor is 7.42% p.a. which should be considered as base.

### **Calculation:**

- For single shift factor for asset value of INR 10,000: Fixed  $(10,000 * 7.42/100 * 64.0162/100)$  + variable  $(0 * 10,000 * 7.42/100 * 35.9838/100) = 475.00 + 0.00 = \text{INR } 475.00$

- For double shift factor for asset value of INR 10,000: Fixed  $(10,000 * 7.42/100 * 64.0162/100)$  + variable  $(1 * 10,000 * 7.42/100 * 35.9838/100) = 475.00 + 267.00 = \text{INR } 742.00$

- For triple shift factor for asset value of INR 10,000: Fixed  $(10,000 * 7.42/100 * 64.0162/100)$  + variable  $(2.1 * 10,000 * 7.42/100 * 35.9838/100) = 475.00 + 560.69 = \text{INR } 1,035.69$

### **Depreciation key customization:**

Path: SPRO -> Financial Accounting -> Asset Accounting -> Depreciation -> Valuation Methods -> Depreciation Key -> Maintain Depreciation Key.

Put depreciation rate as 7.42% in multi level method and select base val. as either 01 or 24 depending on straight line or declining balance method. Create depreciation key with Depreciation type as Ordinary depreciation, Phase as from the start of depreciation and select suitable base method assignment, declining balance method assignment, period control assignment and multilevel method assignment. Select the class as either Straight line depreciation or Declining balance depreciation and ensure to select the Multi shift as "increase in depreciation and expired useful life".

The screenshot shows the SAP SPRO 'Display View Levels: Overview' interface. The 'Dialog Structure' pane on the left shows a tree view with 'Multilevel Method' expanded to 'Levels'. The main area displays the following parameters:

Chart of dep.	N001	Sample chart of depreciation for New GL
Multilev.meth.	DS	Double shift depreciation 7.42%

Below the parameters is a table with the following data:

Acq. year	Yea...	Per	BaseVal.	Percent	Rem. life	Reduct.
9999	999	0	01	7,4200	<input type="checkbox"/>	0,0000

Table view Edit Goto Choose Utilities System Help

**Change View "Assignment of Calculation Methods": Details**

New entries Variable list

Dialog Structure  
 Depreciation Key  
 Assignment of Calculu

Chart of dep. N001 Sample chart of depreciation for New GL  
 Dep. key ZLMS Double shift Depreciation 7.42% - Straight Line

DepType N Ord.depreciation  
 Phase 1 From the start of depreciation

**Assignment of Calculation Methods**

Base method 0014 Ordinary: explicit percentage (after end of life)  
 Decl.-bal. method  
 Prd cont 001 01/01/02/02  
 Multilev.meth. DS Double shift depreciation 7.42%

Class 1 Straight-line depreciation

Chnge. method  
 Changeover%rate

Multiple shift Increase in depreciation and expired useful life  
 Scrap value 0 Consideration is controlled by cutoff value key

Shutdown No

### 5. Front end Asset master updation:

Enter the relevant shift factor in time dependant tab in asset master transaction:

Asset Edit Goto Extras Environment Settings System Help

**Change Asset: Master data**

Asset values

Asset 50003 0 Plant and Machinery  
 Class 11000 Machinery and equip. Company Code N002

General Time-dependent Allocations Deprec. Areas

Interval from 01.01.1900 to 31.12.9999

Business Area  
 Cost Center N0021003 Shared Services  
 Resp. Cost Center  
 Activity Type  
 Intern. Order  
 Maint. Order

Plant  
 Location  
 Room  
 Tax Jurisdiction  
 License plate number  
 Personnel Number  
 Shift factor 1.00  
 Functional Area  
 WBS Element (Costs)  
 Real Estate Key

Asset shutdown  
 More Intervals

Enter the variable portion of depreciation in depreciation terms tab in asset master transaction (double click depreciation area and update the relevant variable portion percentage).

Asset Edit Goto Extras Environment Settings System Help

**Change Asset: Depreciation area Book deprec.**

Asset values Data for revaluation

Asset 50003 0 Plant and Machinery  
 Class 11000 Machinery and equip. Company Code N002  
 Area 01 Book deprec. Book depreciation

Interval from 01.01.1900 to 31.12.9999

**General Specifications**  
 Depreciation Key ZLMS Double shift Depreciation 7.42% - Straight Line  
 Useful life 10 /   
 Original useful life /   
 Changeover year /   
**Start of Calculation**  
 Ord.dep.start date 01.04.2009  
 Int. Calc.   
 Operating readiness 01.04.2009

**Additional Specifications**  
 Variable dep.portion 35.9838  
 Scrap value INR  
 Scrap Value %   
 Neg. Vals Allowed  
 Acquis.year /   
 More Intervals

**Example 1:** AW01N transaction code: Double shift – Depreciation amount: INR 742.00

Asset Explorer

Asset N002-50003/0000  
 Depreciation Areas  
 01 Book depreciation  
 30 Group Depreciation  
 60 US GAAP  
 61 US GAAP Adjustment

Company Code N002 New GL Training Co - 2  
 Asset 50003 0 Plant and Machinery  
 Fiscal year 2009

Planned values Posted values Comparisons Parameters

**Planned values Book depreciation**

Value	Fiscal year start	Change	Year-end	Crcy
APC transactions		10,000.00	10,000.00	INR
Investment support				INR
Acquisition value		10,000.00	10,000.00	INR
Ord.depreciation		742.00-	742.00-	INR
Unplanned dep.				INR
Write-up				INR
Value adjustment				INR
Net book value		9,258.00	9,258.00	INR
Interest				INR
Down payments				INR

**Transactions**

AsstVal date	Amount	TType	Transaction type name	Crcy
01.04.2009	10,000.00	100	External asset acquisition	INR

Objects related to asset  
 Equipment  
 Plant and Machinery  
 Cost Center  
 Shared Services  
 G/L Account  
 Gross Block - Plant and M:

**Example 2:** AW01N transaction code: Triple shift – Depreciation amount: INR 1035.67

The screenshot displays the SAP Asset Explorer interface. On the left, a tree view shows the asset structure: Asset N002-50003/0000, with sub-items for Depreciation Areas (01 Book depreciation, 30 Group Depreciation, 60 US GAAP, 61 US GAAP Adjustment) and Objects related to asset (Equipment, Plant and Machinery, Cost Center, Shared Services, G/L Account, Gross Block - Plant and M:).

The main area shows the asset details for Company Code N002 (New GL Training Co - 2), Asset 50003, and Fiscal year 2009. The 'Planned values Book depreciation' table is as follows:

Value	Fiscal year start	Change	Year-end	Crcy
APC transactions		10,000.00	10,000.00	INR
Investment support				INR
Acquisition value		10,000.00	10,000.00	INR
Ord.depreciation		1,035.67-	1,035.67-	INR
Unplanned dep.				INR
Write-up				INR
Value adjustment				INR
Net book value		8,964.33	8,964.33	INR
Interest				INR
Down payments				INR

Below this, the 'Transactions' table shows a single entry:

AsstVal date	Amount	TType	Transaction type name	Crcy
01.04.2009	10,000.00	100	External asset acquisition	INR

Same procedure and calculation can be followed for declining balance method based on the rates provided in Section 350 of Companies Act, 1956.

## Related Content:

1. Depreciation rates: Explanatory memorandum – review of schedule XIV to the Companies Act, 1956 ([www.mca.gov.in](http://www.mca.gov.in))
2. Help.sap.com ([http://help.sap.com/saphelp\\_45b/helpdata/en/4f/71de62448011d189f00000e81ddfacc/content.htm](http://help.sap.com/saphelp_45b/helpdata/en/4f/71de62448011d189f00000e81ddfacc/content.htm))
3. For more information, visit the [Operations homepage](#).

## Disclaimer and Liability Notice

This document may discuss sample coding or other information that does not include SAP official interfaces and therefore is not supported by SAP. Changes made based on this information are not supported and can be overwritten during an upgrade.

SAP will not be held liable for any damages caused by using or misusing the information, code or methods suggested in this document, and anyone using these methods does so at his/her own risk.

SAP offers no guarantees and assumes no responsibility or liability of any type with respect to the content of this technical article or code sample, including any liability resulting from incompatibility between the content within this document and the materials and services offered by SAP. You agree that you will not hold, or seek to hold, SAP responsible or liable with respect to the content of this document.