



# SAP APO

**tutorialspoint**

SIMPLY EASY LEARNING

[www.tutorialspoint.com](http://www.tutorialspoint.com)



<https://www.facebook.com/tutorialspointindia>



<https://twitter.com/tutorialspoint>

## About the Tutorial

---

SAP Advanced Planning and Optimization (SAP APO) is one of the key modules in SAP SCM, and controls Supply Network Planning, Spare Parts Planning, TP/VS and Demand Planning in Supply Chain process. It helps the organization to manage their supply chain process in a dynamic environment.

SAP APO is a complete software to cover key processes such as supply chain networking, supply chain planning and coordination, and supply chain execution.

## Audience

---

This tutorial is meant for Project leaders, project team members, SAP consultants, sales consultant, and those related to the departments of Supply Chain and Material Management.

## Prerequisites

---

Before you proceed with this tutorial, we assume you have familiarity, prior experience, and knowledge of the domain of supply chain management. However, it is sufficient if you are aware of the basics of computer applications and SAP tools.

## Copyright & Disclaimer

---

© Copyright 2018 by Tutorials Point (I) Pvt. Ltd.

All the content and graphics published in this e-book are the property of Tutorials Point (I) Pvt. Ltd. The user of this e-book is prohibited to reuse, retain, copy, distribute or republish any contents or a part of contents of this e-book in any manner without written consent of the publisher.

We strive to update the contents of our website and tutorials as timely and as precisely as possible, however, the contents may contain inaccuracies or errors. Tutorials Point (I) Pvt. Ltd. provides no guarantee regarding the accuracy, timeliness or completeness of our website or its contents including this tutorial. If you discover any errors on our website or in this tutorial, please notify us at [contact@tutorialspoint.com](mailto:contact@tutorialspoint.com)

## Table of Contents

---

<b>About the Tutorial.....</b>	<b>i</b>
<b>Audience .....</b>	<b>i</b>
<b>Prerequisites .....</b>	<b>i</b>
<b>Copyright &amp; Disclaimer.....</b>	<b>i</b>
<b>Table of Contents.....</b>	<b>ii</b>
<b>1. SAP APO – INTRODUCTION.....</b>	<b>1</b>
<b>2. SAP APO – DEPLOYMENT OPTIONS .....</b>	<b>3</b>
<b>Post Installation Steps.....</b>	<b>3</b>
<b>3. SAP APO – ARCHITECTURE .....</b>	<b>6</b>
<b>4. SAP APO – SUPPLY CHAIN MONITORING .....</b>	<b>8</b>
<b>    Transaction MD04/Stock Requirement List .....</b>	<b>8</b>
<b>    Logistics Information System (LIS) .....</b>	<b>10</b>
<b>5. SAP APO – DEMAND PLANNING .....</b>	<b>16</b>
<b>    Demand Planning Implementation.....</b>	<b>16</b>
<b>    Key Figures in Demand Planning .....</b>	<b>16</b>
<b>    Forecast Model Under Demand Planning .....</b>	<b>20</b>
<b>6. SAP APO – DATA MART, INFOCUBES &amp; DP.....</b>	<b>23</b>
<b>    Creating InfoCubes for Demand Planning.....</b>	<b>23</b>
<b>7. SAP APO – SUPPLY NETWORK PLANNING.....</b>	<b>26</b>
<b>    Planning Area Administration .....</b>	<b>26</b>
<b>    Master Data for Supply Network Planning .....</b>	<b>29</b>
<b>    Supply Network Planning Run .....</b>	<b>30</b>
<b>8. SAP APO – SUPPLY AND DEMAND MATCHING .....</b>	<b>33</b>
<b>    Capable-To-Match (CTM) Function.....</b>	<b>33</b>

9. SAP APO – PP/DS .....	38
<b>Integration of PP/DS with SAP APO applications.....</b>	<b>38</b>
<b>PP/DS Alert Monitoring.....</b>	<b>39</b>
10. SAP APO – MASTER DATA SETUP .....	42
<b>Location Master Data.....</b>	<b>43</b>
<b>Product Master Data .....</b>	<b>47</b>
11. SAP APO – TRANSPORT MANAGEMENT .....	50
<b>Master Data for Transport Planning/Vehicle Scheduling.....</b>	<b>50</b>
<b>Interactive Planning in Transport Management .....</b>	<b>53</b>
12. SAP APO – ADDITIONAL FUNCTIONS IN TP/VS.....	59
13. SAP APO – SERVICE PART PLANNING .....	65
<b>Procurement Lead Times.....</b>	<b>65</b>
<b>Delivery and Shipment .....</b>	<b>67</b>
14. SAP APO – CORE INTERFACE.....	69
<b>Technical Integration Between Systems .....</b>	<b>69</b>
<b>Integration of Master and Transaction Data.....</b>	<b>73</b>
15. SAP APO – ADMINISTRATION .....	75
<b>SAP APO Performance Monitor .....</b>	<b>76</b>
16. SAP APO – CROSS APPLICATION FUNCTIONS.....	78
<b>Procurement Types .....</b>	<b>78</b>
<b>Source Determination in External Procurement .....</b>	<b>78</b>
17. SAP APO – MANAGING ROLES .....	79
<b>Demand Planning Roles.....</b>	<b>79</b>
<b>Supply Network Planning Roles.....</b>	<b>79</b>
<b>Global Available-To-Promise Roles.....</b>	<b>80</b>

PP/DS Roles .....	80
Transport Management Roles: .....	80
18. SAP APO – ARCHIVING DATA IN APO .....	82
Archiving Interchangeability Master Data .....	82
Archiving in PP/DS .....	83
19. SAP APO – PROCESSING CUSTOMER REQUIREMENT.....	84

# 1. SAP APO – Introduction

Advanced Planning and Optimization (APO) module is one of the key component under SAP Supply Chain Management (SCM). It provides different business processes related to Demand Planning, Supply Network Planning (SNP), Production Planning/Detailed Scheduling (PP/DS), Transport Management and Global Available-to-Promise.

APO is tightly integrated with ECC system using a core interface (CIF) and provides full reporting functionalities on top of data marts and InfoCubes.

With the recent release of Supply Chain Management (SCM) 5.0, a new set of functionality has been added - Service Parts Planning - to perform spare part management under Supply Chain.

SAP APO provides complete integrated functions to manage supply chain processes and supports various features.

The use of Supplier Network Collaboration (SNC) (also known as Inventory Collation Hub (ICH)) to provide collaboration between the suppliers and the customers. Using APO, you can achieve coordination between different partners at all stages of the supply chain process. It starts from receiving an order, monitoring the stock, and shipping of the product.

You can constantly perform optimization and evaluation of Supply Chain process and monitor process efficiency. APO also provides BI component to support Reporting functions and data marts.

Advanced Planning and Optimization consists of following application functions -

- Demand Planning
- Supply Network Planning
- Production Planning and Detailed Scheduling (PP/DS)
- Supply Chain Collaboration
- Global Availability
- Transport Management
- Supply Chain Collaboration/Inventory Collation Hub

SAP APO is installed as part of SAP Supply Chain Management server installation or it is also available as an add-on tool to SAP ERP package.

## 2. SAP APO – Deployment Options

SAP SCM Server installation provides all the features of SAP APO function module.

In an add-on deployment model of SAP APO, following components are available as part of SAP APO tool -

- SAP APO - Demand planning, i.e. SCM-APO-FCS
- SAP APO Supply Network planning, i.e. SCM-APO-SNP
- SAP APO Production Planning and Detailed scheduling, i.e. SCM-APO-PPS
- SAP APO Global Available-to-Promise, i.e. SCM-APO-ATP

**Note:** In an Add-on deployment model, following application components are not available w.r.t SAP SCM server installation -

- Service Parts Planning, i.e. SCM-APO-SPP
- Maintenance and Service Planning, SCM-APO-MSP
- Integration of SAP APO and Supply Network Collaboration (SNC)
- Global Available-to-Promise (ATP) integration with SAP CRM
- SAP APO Services related to Service Oriented Architecture (SOA)

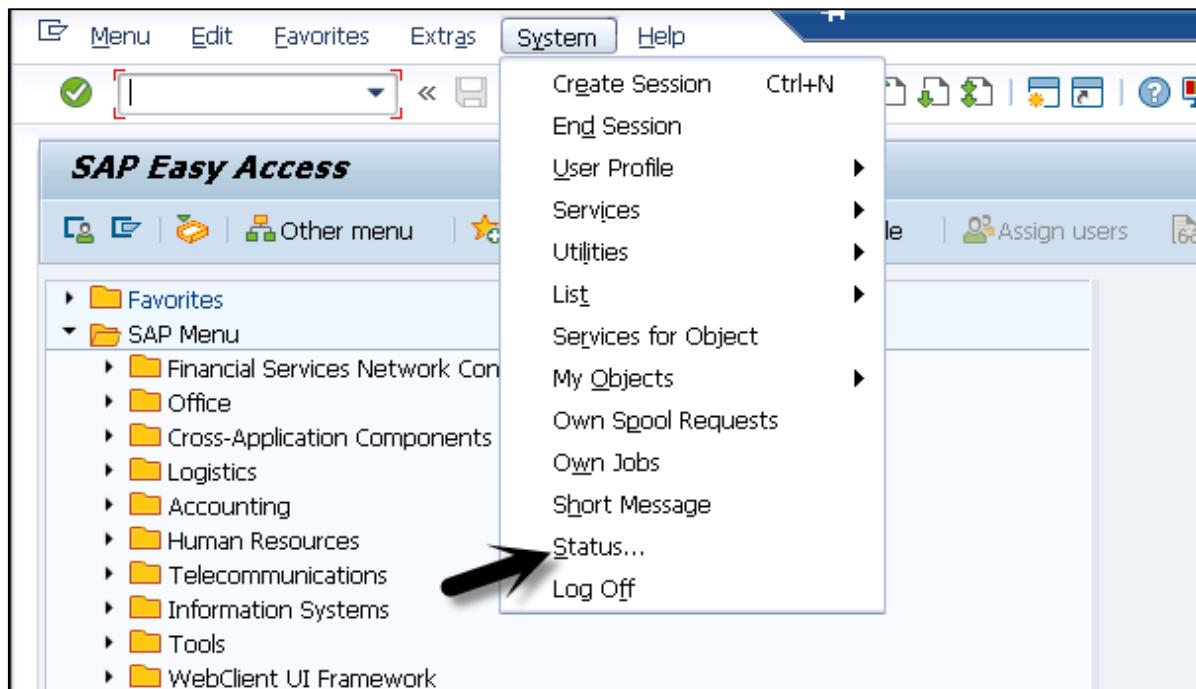
### Post Installation Steps

---

Once you perform add-on installation, you need to activate /SAPAPO/APO\_ON\_ERP. This is used for SAP APO system setup. You need to activate this in the same client where SAP APO is installed on SAP ERP system.

In SAP ERP system, you can check the deployment option of SAP APO as shown in the following screenshot.

Navigate to System -> Status tab in SAP ERP



Under component information in SAP System Data group. You can recognize the deployment option as follows:

- When you see SCMPLUS component, it means you are in SCM server system i.e. SCM server deployment of SAP APO.
- When the component - SCMPLUS is not listed, it means that you are in an ERP system, i.e. add-on deployment model of SAP APO. You can scroll down in the component list using left slide bar.
- When you select the component, you can also navigate to the Details tab at the top to check the details of the component.



Installed Software

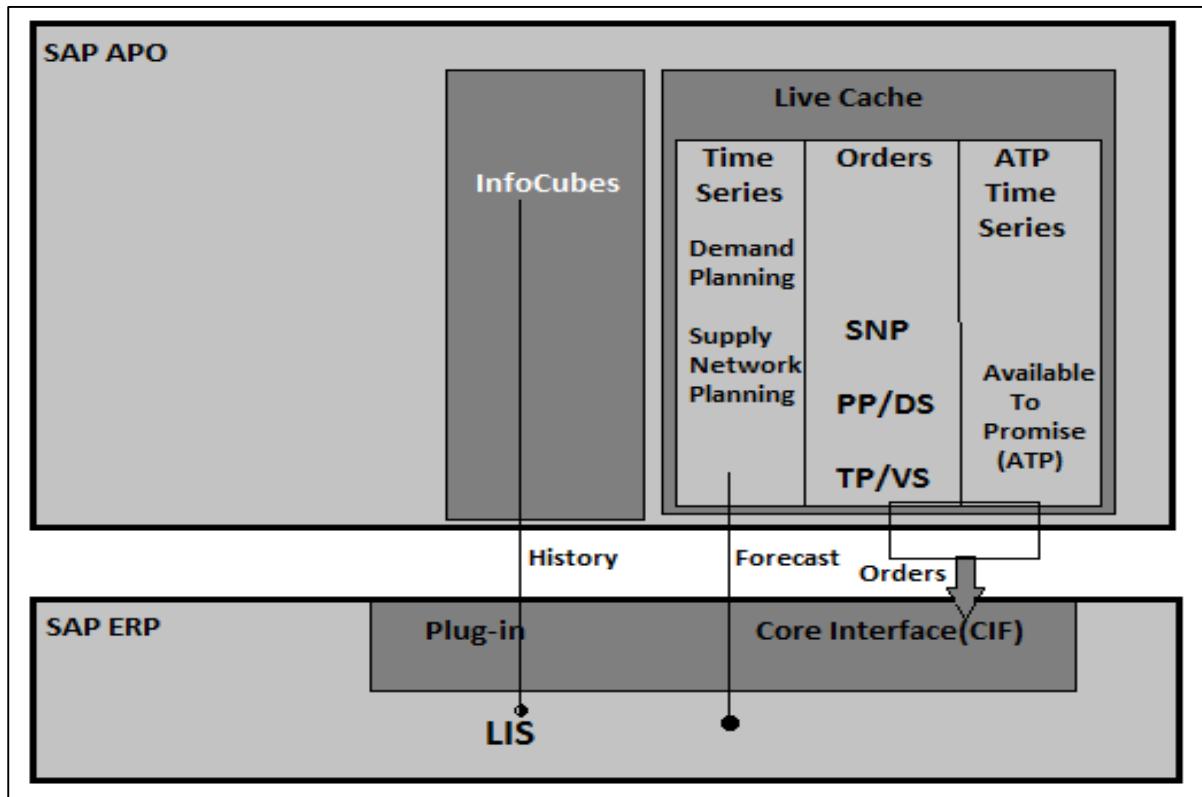
Installed Software Component Versions      Installed Product Versions

Component	Release	SP-Level	Support Package	Short Description of Component
HR-CEEGXX	110_604	0000	-	Sub component HR-CEEGXX of HR-CEE
HR-CEERXX	110_604	0000	-	Sub component HR-CEERXX of HR-CEE
IAM	100	0002	SAPK-10002INIAM	Issue Activity Management
INSURANCE	617	0002	SAPK-61702ININSURANC	SAP Insurance
IS-CWM	617	0002	SAPK-61702INISCWM	Industry Solution Catch Weight Management
IS-H	617	0002	SAPK-61702INISH	SAP Healthcare
IS-M	617	0002	SAPK-61702INISM	SAP MEDIA
IS-OIL	617	0002	SAPK-61702INISOIL	IS-OIL
IS-PRA	617	0002	SAPK-61702INISPRA	SAP IS-PRA
IS-PS-CA	617	0002	SAPK-61702INISPSCA	IS-PUBLIC SECTOR CONTRACT ACCOUNTING
IS-UT	617	0002	SAPK-61702INISUT	SAP Utilities/Telecommunication
IW_SCS	200	0007	SAPK-20007INIWSCS	Screen Scraping
LSOFE	617	0001	SAPK-61701INLSOFE	SAP Learning Solution Front-End
MCRMFERP	200	0002	SAPK-20002INMCRMFERP	SAP Mobile Service 2.0 ERP Addon
MCRMERP	200	0007	SAPK-20007INMCRMERP	SAP Retail Execution 2.0 ERP Addon
MCRMSERP	200	0004	SAPK-20004INMCRMSERP	SAP Mobile Sales 2.0 ERP Addon

### 3. SAP APO – Architecture

SAP APO architecture consists of multiple components - Database, BI environment contains InfoCubes and Live Cache. InfoCubes are part of BI data mart and live cache is the main area where you keep all the data related to planning and scheduling. You can perform complex calculations in live cache and this improves the performance during calculations and reporting.

In a normal deployment scenario of APO, there is only one cache per installation.



Although there is a single cache, the data can be loaded in three different ways as per the application type.

- Time Series - Suitable for Demand Planning and Supply Network Planning
- As an Order with a category - Suitable for SNP, Production Planning/Detailed Scheduling, and Transport Planning and Vehicle Scheduling
- ATP time series – Available-to-Promise

SAP BI functionality is primarily used by Demand Planning (DP), and depends on InfoCube which contains historical data. Processing of data is done in Time Series live cache and Supply Network Planning. PP/DS uses order live cache and SNP uses data for Time Series live cache.

Available-to-Promise relies on data in ATP Time Series Live Cache.

In SAP APO and ERP integration, most of the transactional data - Planned orders, purchase requirements - are created in APO, while data related to execution - Sales Order and Purchase Orders - are maintained in SAP ERP. For the integration of transactional data and history, a plug is provided by SAP. Plug-in contains a Core Interface (CIF) and also the interface to SAP BI structure.

SAP BI system gets data from Logistics Information System (LIS) in SAP ERP, which stores all the transactional data. Data is stored in InfoCubes with the use of periodic jobs scheduled as per the requirement of data load.

CIF provides an event-based trigger approach where data is loaded as and when required. For each event triggered, entries are created in Live Cache of SAP APO system.

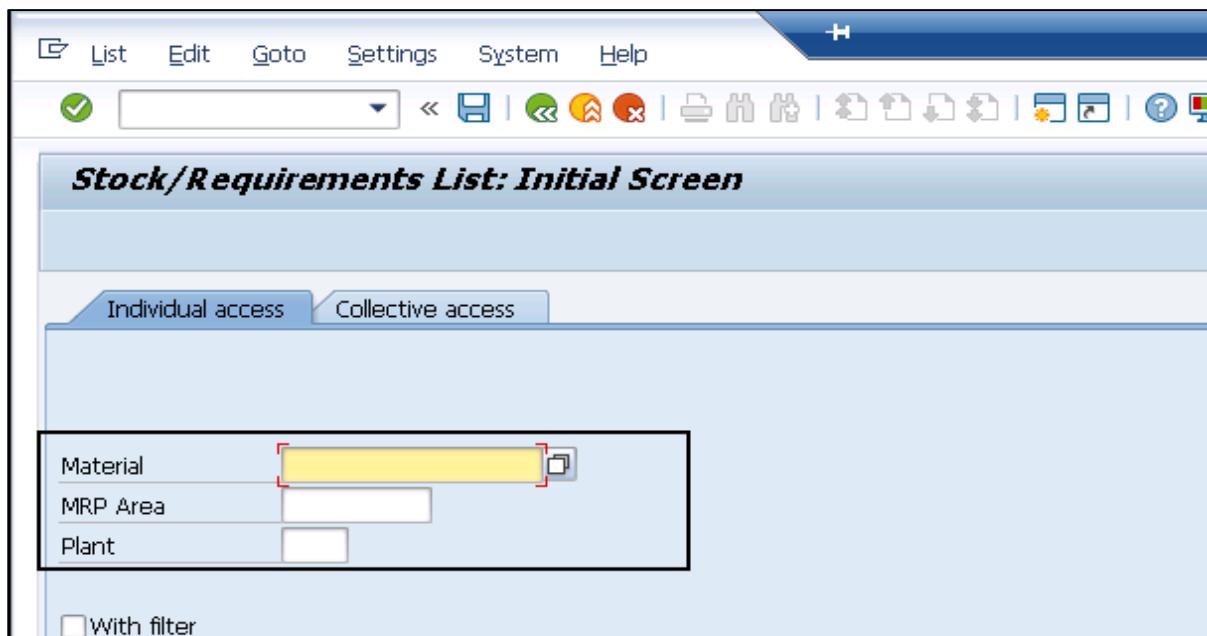
## 4. SAP APO – Supply Chain Monitoring

**Supply Chain Monitoring** (SCM) is an effective tool to make informed decisions for the suppliers and the buyers. The key holders in supply chain process takes decisions based on Supply Chain Monitoring. Supply Chain consists of two tools -

- Stock Requirement List MD04
- Logistics Information System (LIS)

### Transaction MD04/Stock Requirement List

In supply chain monitoring, all alerts raised in the system should be executed in a symmetrical way. When there are no alerts pending in the supply chain, it results in a healthy system.



Enter Material and Plant in the above screenshot and click the tick mark on top of the page.

**Stock/Requirements List: Initial Screen**

Individual access  Collective access

Material   
 MRP Area   
 Plant

With filter

BOM for material was exploded. Enter Purchase requisition.

**Stock/Requirements List as of 12:12 hrs**

Show Overview Tree |

Material	<input type="text" value="1847"/>	160GB SATA 10K SFF 2nd HDD					
MRP area	<input type="text" value="5000"/>	Tokyo					
Plant	<input type="text" value="5000"/>	MRP type	<input type="checkbox"/>	Material Type	<input type="checkbox" value="FERT"/>	Unit	<input type="text" value="EA"/>
A..	Date	MRP ...	MRP element data	Reschedule...	E..	Receipt/Reqmt	Available Qty
	20.06.2016	Stock					0

Following activities can be monitored using Transaction MD04:

- Review master data alerts
- Orders can be placed in lead time
- Shortages
- Overages

## Logistics Information System (LIS)

SAP Supply Chain provides various standard reports that can be used to monitor the efficiency of the entire supply chain process. Logistics Information System (LIS) is used to mine the data for the following standard reports -

- Vendor Performance
- Sales Performance
- Maintenance Cost
- Rejection Rates
- Manufacturing Lead Time

Using LIS, you can not only evaluate actual data but you can also use it to prepare planning data.

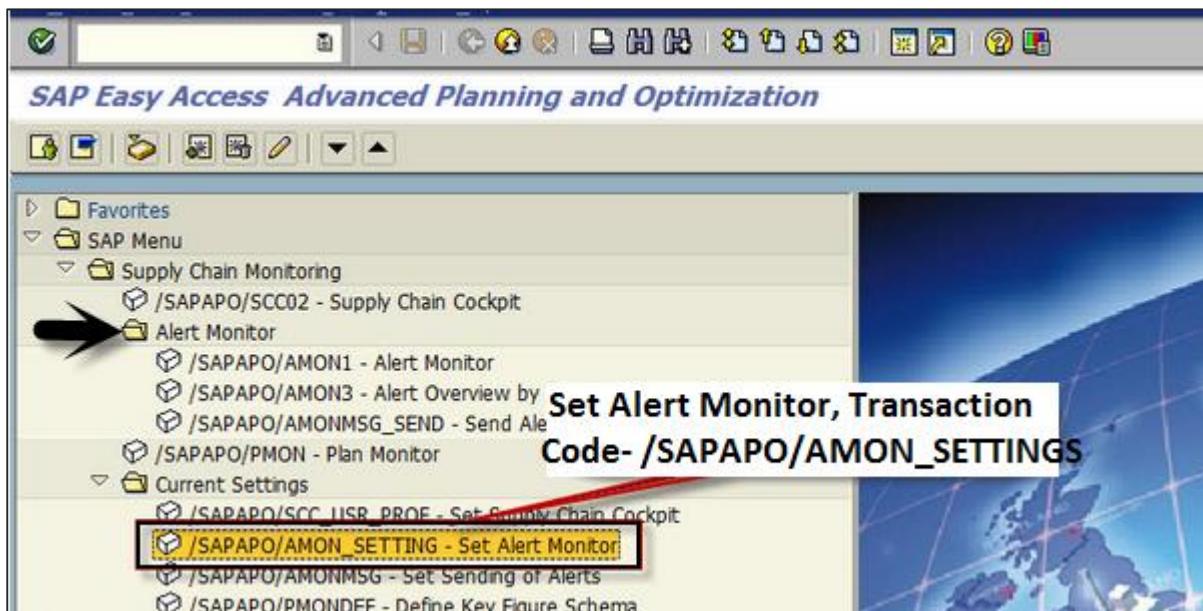
Supply Chain Monitoring involves the following functions -

### Alert Monitor

Alert monitor is used to check if your application is running fine. In an Alert monitor, you can view all the alerts and navigate directly to the application. Alert monitor can also be used with SAP Extended Warehouse Management (EWM), and Forecasting and Replenishment.

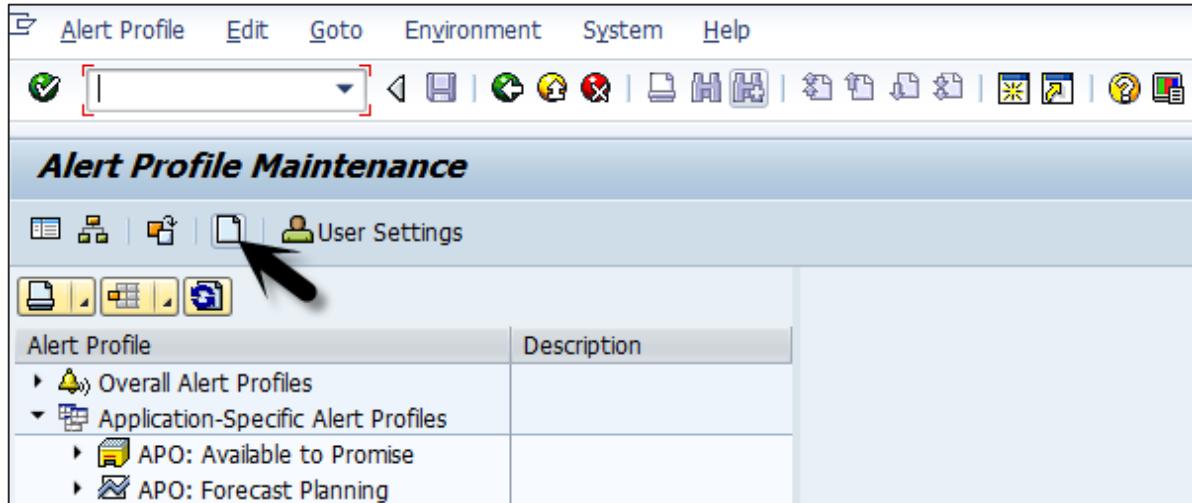
Alert monitor is used to monitor objects in the Supply Chain - material, transportation and storage constraints, capacity as well as metrics such as delivery performance, cost flow, and throughput.

Transaction Code for Alert Monitor is **SAPAPO/AMON\_SETTINGS** or you can also open using the following path - Easy Access -> Advanced Planning and Optimization -> Supply Chain Monitoring -> Current Settings -> Set Alert Monitor.

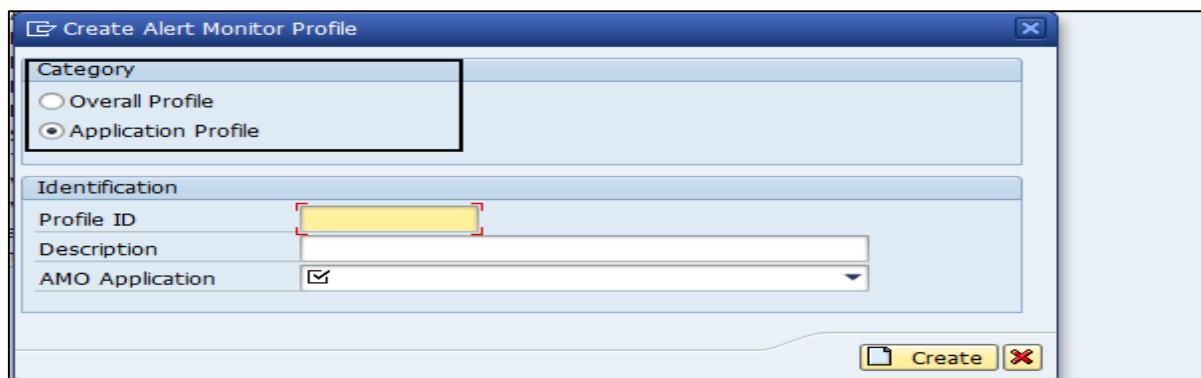


The alert types can be managed in Transaction Code - **SAPAPO/AMOCFG**

To create alert application profile, click the Create button.



Select Category as Application profile, enter Profile Id, description, and application. Click the Create button in the next window.



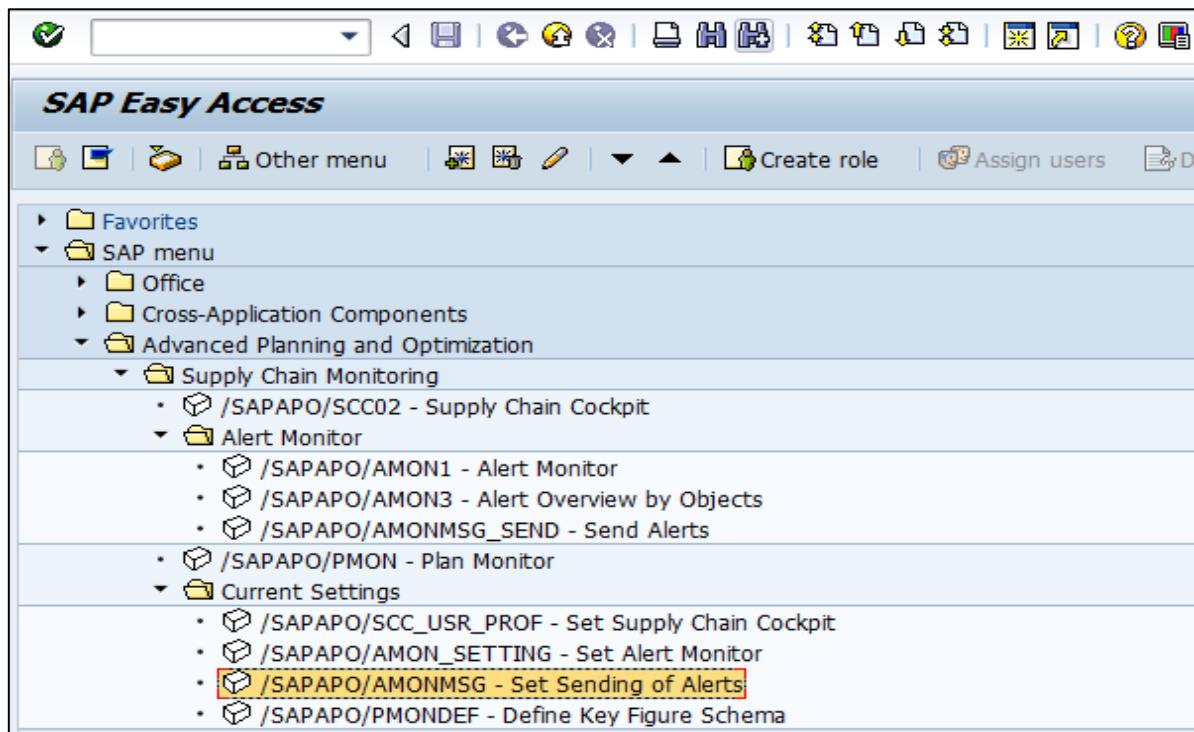
You can display/edit alert profile, or application alert profile by navigating hierarchy under alert profile.

## Sending Notifications Using Alert Monitor

Using the alert monitor, you can send alert notifications that occurred for an overall alert profile via an email or to an alert inbox. Overall alert profile in the Alert Monitor contains selection criteria for the following alerts:

- The alerts that the system displays while calling the Alert Monitor.
- All the alerts for which the system sends an automatic notification.

To enable automatic sending of alert monitor, navigate to SAP Easy Access -> Advanced Planning and Optimization -> Supply Chain Monitoring -> Current Settings -> Set Sending of Alerts.



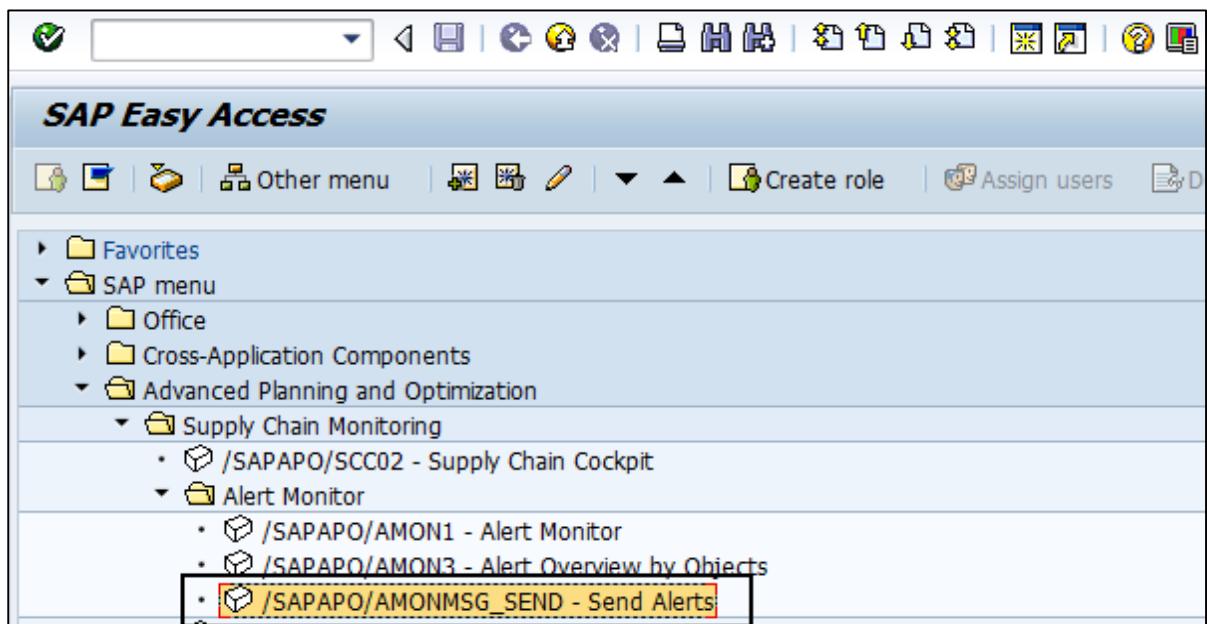
You need to enter the following information -

- The user that you want to notify.
- An overall alert profile. **Note** that you can only assign one overall alert profile to each system user, which is then used to notify the user.
- Email address (email address or inbox in the "SAP Business Workplace").
- Activate automatic notification for this system user by selecting the checkbox at the bottom of the screenshot.

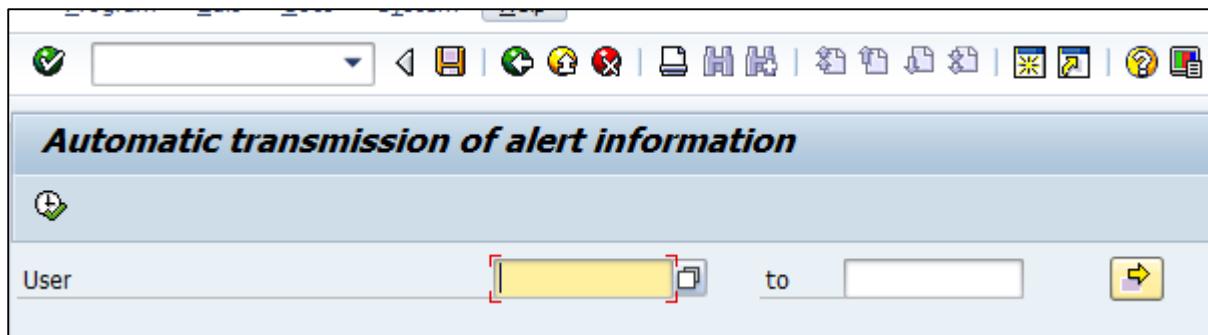
**Profile Maintenance / Automatic Messaging: Change**

User	SCM055
Select Overall Profile	
Overall Prof.	CHANDAN
Address Specifications	
<input checked="" type="radio"/> Entry in SAP Business Workplace <input type="radio"/> E-Mail Address	
E-mail Address	
<input type="radio"/> Central User Administration <input checked="" type="radio"/> Direct Input	
Activate Messaging	
<input type="checkbox"/> Automatic Notification	

You can also trigger the notifications manually. Navigate to SAP Easy Access -> Advanced Planning and Optimization -> Alert Monitor -> Send Alerts.



Select the system user you want to notify. If you want the system to automatically send notifications at regular intervals, define a variant of report /SAPAPO/AMON\_MAIL\_BROADCAST



## Plan Monitor

Plan monitor is used to evaluate the key figures for a plan w.r.t different objects, periods, and versions. Plan monitor can be used to compare various planning versions with each other. You can compare the planning over different periods.

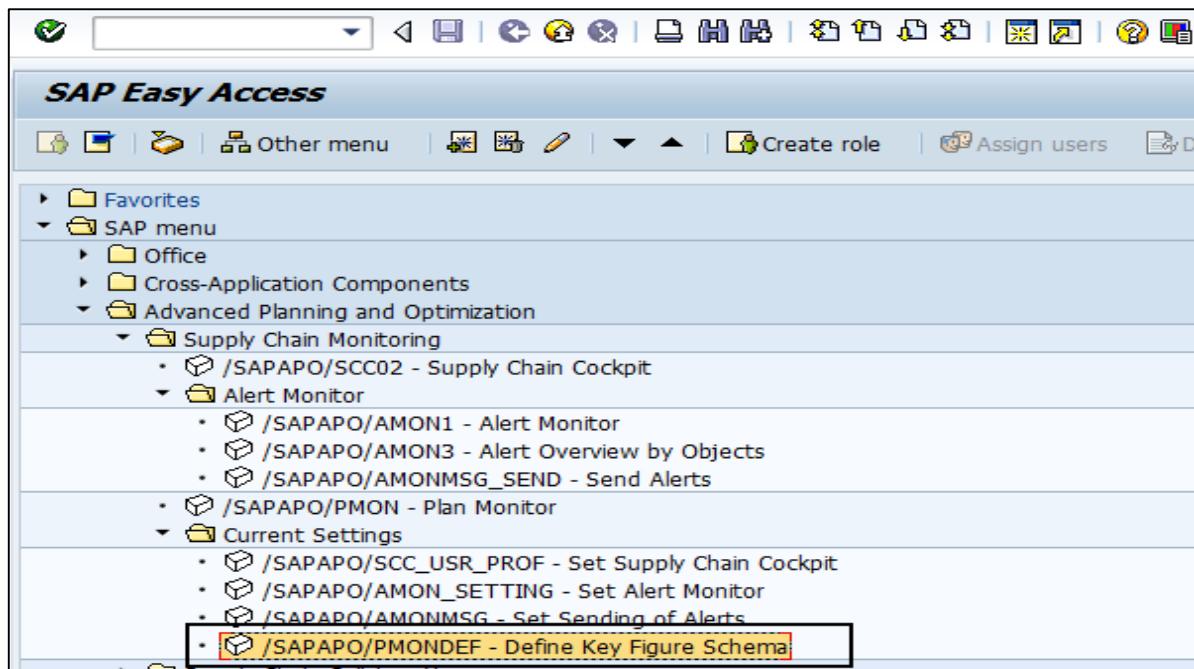
The results can be displayed in the form of a table or a graphic.

Plan monitor can be called from the following applications:

- Capable-to-Match (CTM)
- Product Planning table
- Detailed Scheduling Planning Board -> Extras -> Plan Monitor
- Model and Version Management -> Further Functions -> Plan Monitor

## Key Figure Schema

Key figure schema is used to define which "Plan Monitor" criteria are used to evaluate the planning. They are not specific to users and you can copy or delete them. The layout of the table columns and the graphical display can be changed to user-specific settings.

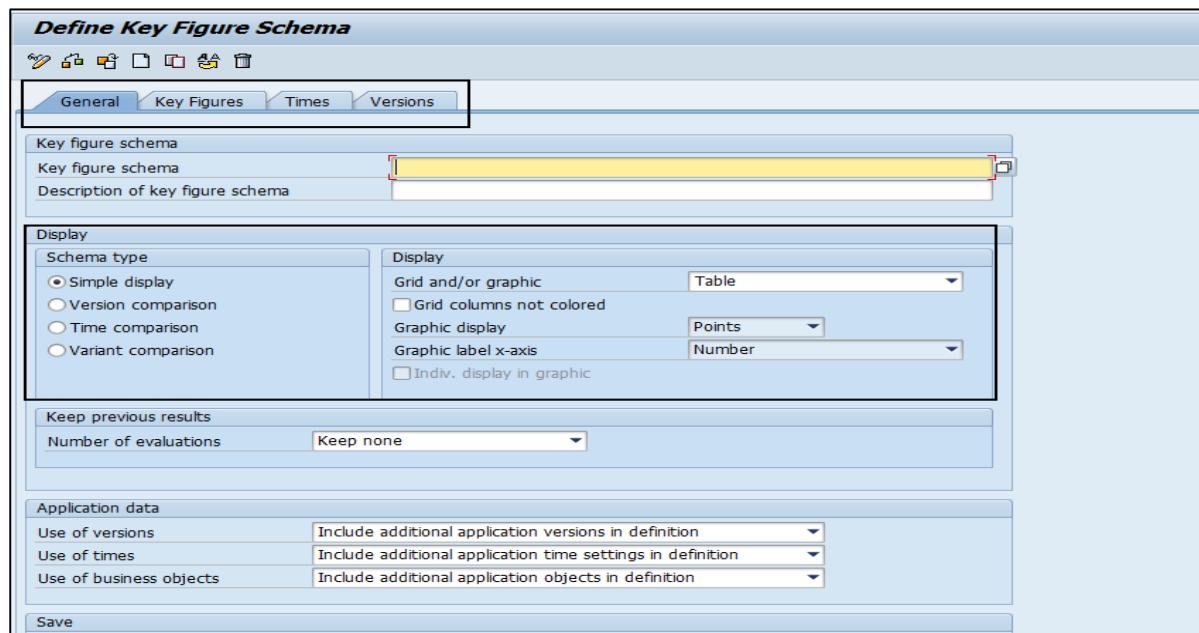


Under General Settings, you define the type of schema - simple display or comparison

Or Type of Display - Table, Graphic or combination of table and graphic

Under Key figures, define key figure variants:

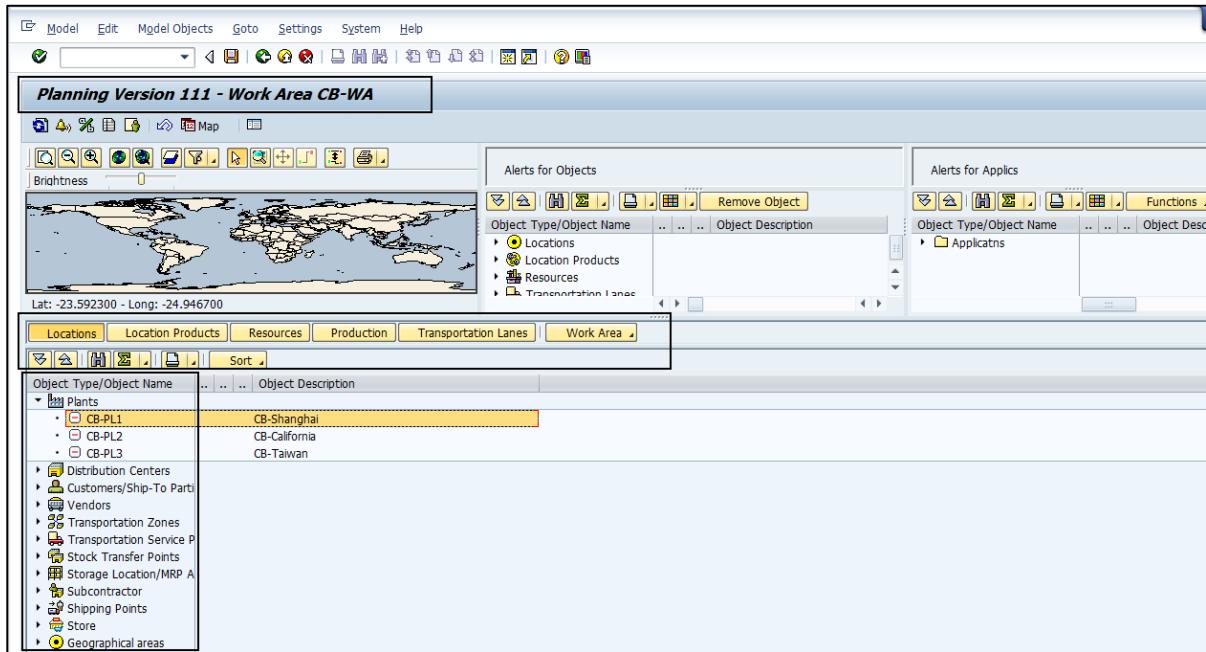
- Times - This is used to define periods for which planning is to be evaluated
- Version - This is where you enter the planning and simulation version to be evaluated



## Supply Chain Cockpit

Supply chain cockpit is a graphical tool to manage and control supply chain. It covers all the planning areas like manufacturing, demand, transportation, etc.

With the use of individual work areas, you can have several planners work simultaneously on different parts of a supply chain.



Supply Chain Cockpit allows you to -

- Check the entire supply chain from all perspectives and you can drill down to the lowest level of detail.
  - You can remove the complexity of the relationships among supply chain components.
  - Flexible decision-making steps after checking the detailed level information.
  - You can also use it to retrieve information from SAP APO using queries.
  - With SCC, you can measure Key Performance Indicators of supply chain process.
- Create a new work area in SCC, click the Selection icon and this will open select Work area screen.

End of ebook preview

If you liked what you saw...

Buy it from our store @ <https://store.tutorialspoint.com>