

Efficient Monitoring Techniques – Do You Want Something Better than RSPCM?



Applies to:

SAP BW 3.x & SAP BI Net Weaver 2004s. For more information, visit the Business Intelligence homepage.

Summary

The objective of this article is to share and explore the efficient monitoring techniques.

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Introduction

What is BI?

BI applications provide historical, current, and predictive views transactional operations shown below. It is a 5-step process to run your business with more intelligence.

These steps include:

Registering the right data properly.

Collect these data from multiple sources.

Transform.

Combine and store it in a data warehouse or a data mart.

Report on the data and use it for further analysis.

Importance of BI

BI gives the correct information to the right set of people at appropriate time. It also gives managers and executives the ability to report on critical data for business while monitoring important operational endeavors of performance of business.

What are process chains?

Process chains are sequence of processes that control the BI processes. In an operating BI system there are a multitude of processes that occur regularly. If you use process chains, you can:

Automate the complex schedules in BW with the help of the event-controlled processing,

Visualize the processes by using network graphics, and

Centrally control and monitor the processes.

Traditional Process Chain Transactions in the BI System

Below mentioned are a few transactions to monitor a given BI system.

Monitoring of Daily Process Chains (Transaction RSPCM)

Use this transaction to regularly check the status of the current runs for selected process chains. You can navigate to the detailed log view for a process chain run from here.

Log view for runs of a process chain in process chain maintenance (transaction RSPC)

Use this transaction to display one or more runs for a process chain in the log view.

Process Chain Maintenance for a Given Process Chain Run (Transaction RSPC1)

Use this transaction to call the log view for this run by specifying the log ID of a concrete process chain run.

The Non-Traditional Monitoring Technique

We have all been used to using RSPCM as the transaction for monitoring the process chains.

But have we ever used yet another program provided by SAP with even better monitoring methods. This article will talk about the same.

Advantages over RSPCM way of monitoring

Traditional Monitoring	Non Traditional Monitoring
In the scenario where new process chains have been added to the system, they need to be added manually to the TCODE.	There is no explicit need to add any process chains manually. Chains are available automatically.
This displays only one run of the process chain.	All the runs of the process chain are displayed depending on the selection.
More the number of process chains, more is the time taken to refresh the screen.	Refresh time is minimal.

Apart from the above mentioned advantages, there are multiple advantages. We will try to have a look at those advantages gradually as we proceed with this article.

Usage Scenarios

Below listed are a few usage scenarios of this new method of monitoring:

Day to Day Monitoring

System Performance Analysis

Average Run time of the loads

Analysis on slow performance of a particular load

How to get into the monitor screen?

There are two ways how we can get into the new monitoring screen.

Method 1:

Go to TCODE ST13

Enter the tool name as 'BW-TOOLS'

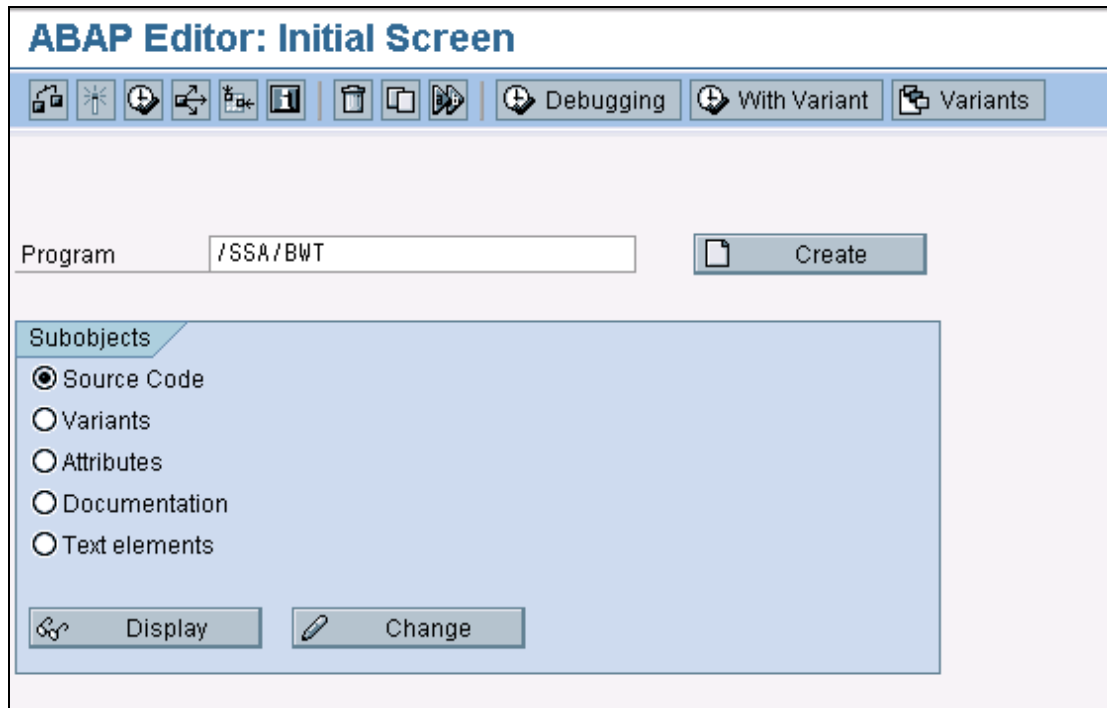
Execute

Select the radio button Process Chain Analysis and Execute

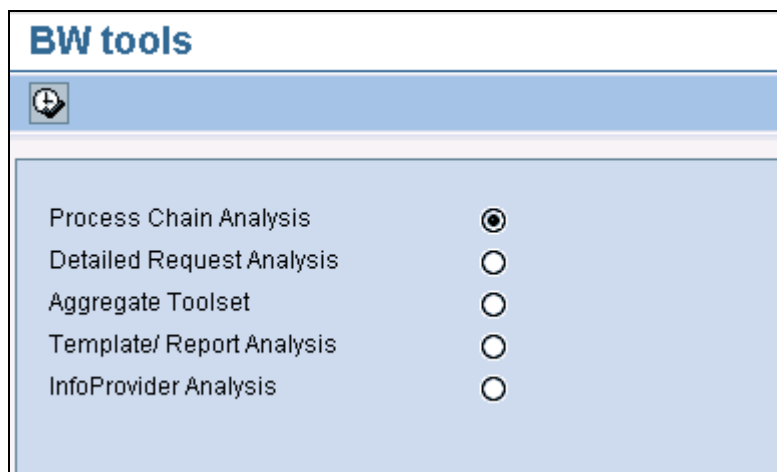
Method 2:

Go to TCODE SE38

Enter the program name as '/SSA/BWT'



Execute

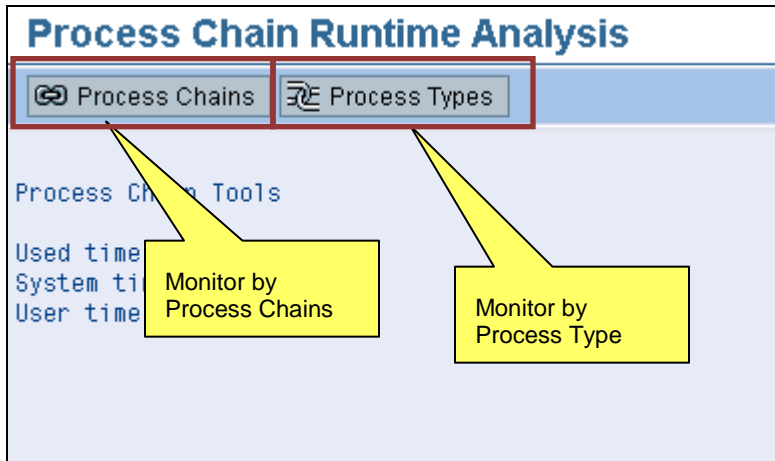


Select the radio button Process Chain Analysis and Execute

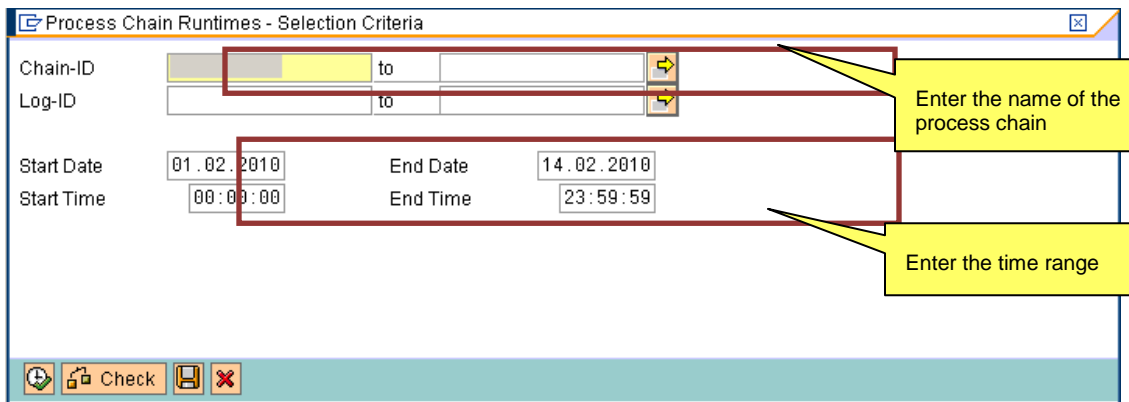
Exploring the Process Chain Run Time Analysis Tool

Various Options available

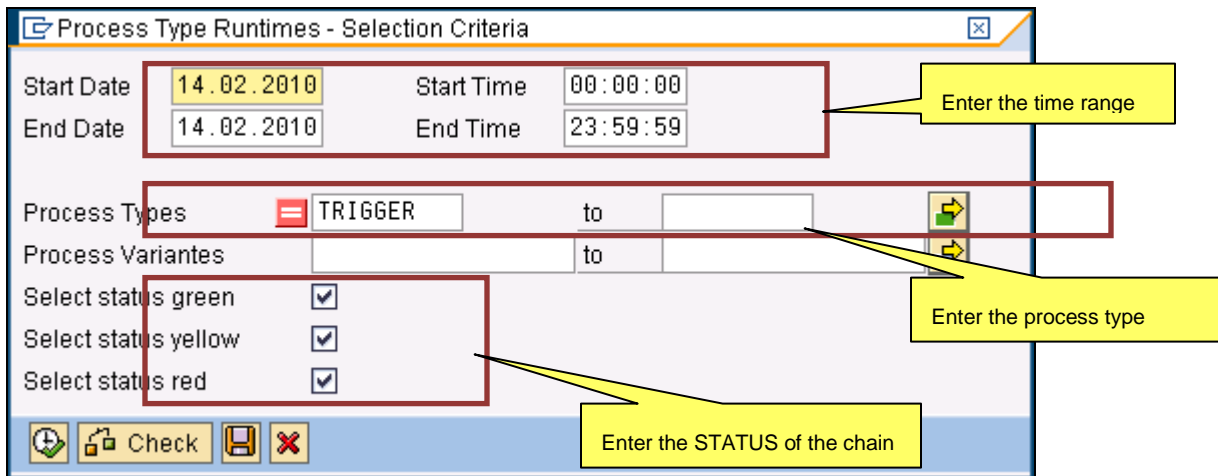
Process chain monitoring can be done via one of the below mentioned two methods:



By Process Chains: This will help us monitor the loads of multiple process chains at the time.



By Process Type: This would help us analyze the process chains based on any one particular step in the process chain.



Now we will explore the monitoring by Process Chains.

Basic Level Monitoring

We first enter the process chain and/or the time range for which the process needs to be analyzed.

On executing the same we get the below information.

Process Chain Runtime Analysis

Status	Steps	Main	Chain	Log-Id	SubChains	Steps	Day	Date	Time	Runtime
○○○○	○○○○	<input checked="" type="checkbox"/>			0	6	SU	4.02.2010	01:34:28	00:17:10
○○○○	○○○○	<input checked="" type="checkbox"/>			0	6	SA	3.02.2010	01:00:23	00:22:18
○○○○	○○○○	<input checked="" type="checkbox"/>			0	6	FR	2.02.2010	01:00:23	00:11:33
○○○○	○○○○	<input checked="" type="checkbox"/>			0	6	TH	1.02.2010	01:00:02	00:12:25
○○○○	○○○○	<input checked="" type="checkbox"/>			0	6	WE	0.02.2010	01:00:21	00:12:45
○○○○	○○○○	<input checked="" type="checkbox"/>			0	6	TU	9.02.2010	01:00:07	00:10:08
○○○○	○○○○	<input checked="" type="checkbox"/>			0	6	SU	7.02.2010	01:00:13	02:03:30
○○○○	○○○○	<input checked="" type="checkbox"/>			0	6	SA	6.02.2010	01:00:17	00:08:16
○○○○	○○○○	<input checked="" type="checkbox"/>			0	6	FR	5.02.2010	01:00:15	00:09:44
○○○○	○○○○	<input checked="" type="checkbox"/>			0	6	TH	4.02.2010	01:00:22	00:07:46
○○○○	○○○○	<input checked="" type="checkbox"/>			0	6	WE	3.02.2010	01:00:06	00:33:54
○○○○	○○○○	<input checked="" type="checkbox"/>			0	6	TU	2.02.2010	13:52:25	00:06:51

Below is an insight into what information is available from the above:

A → Status: This gives the overall status of the process chain.

B → Steps: This gives the status of the steps. E.g. If any one step in the process chain has failed, this will show as failed status.

C → Main: A check in the main box signifies that this is a main chain and not a local chain within a Meta chain. The Sub Chains gives the number of the local chains in a Meta chain.

D → Chain: The chain field gives the chain name with a hyperlink to navigate to the steps.

E → Log-Id: This gives the log id of the instance of the chain which had run. This has a hyperlink which directly takes us to the logs of the screen.

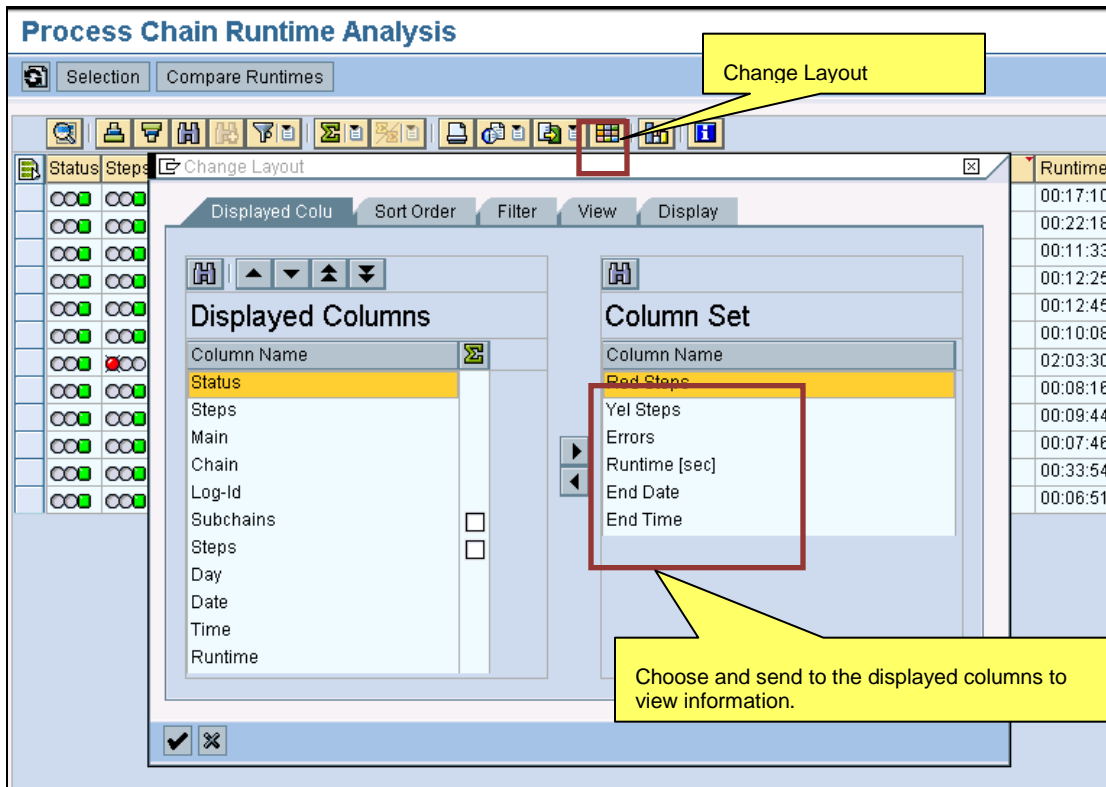
F → Day: This gives the information of the day on which the instance of process chain had triggered.

G → Date: This gives the start date of the process chains.

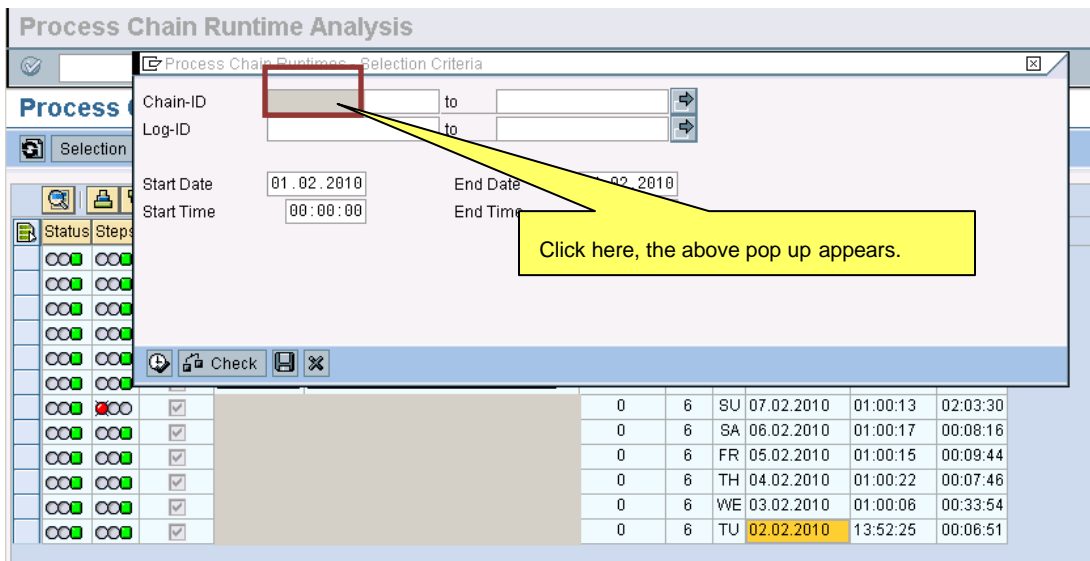
H → Time: This gives the start time of the process chains

I → Runtime: This gives the complete run time of the process chain.

In addition to the above , we have other useful information like, number of steps in the process chain in RED status, number of steps in the process chain still running , end date and end time.



In order to change the selection for which we are monitoring click on the selection button on the top. A pop up appears, specify the details and execute.

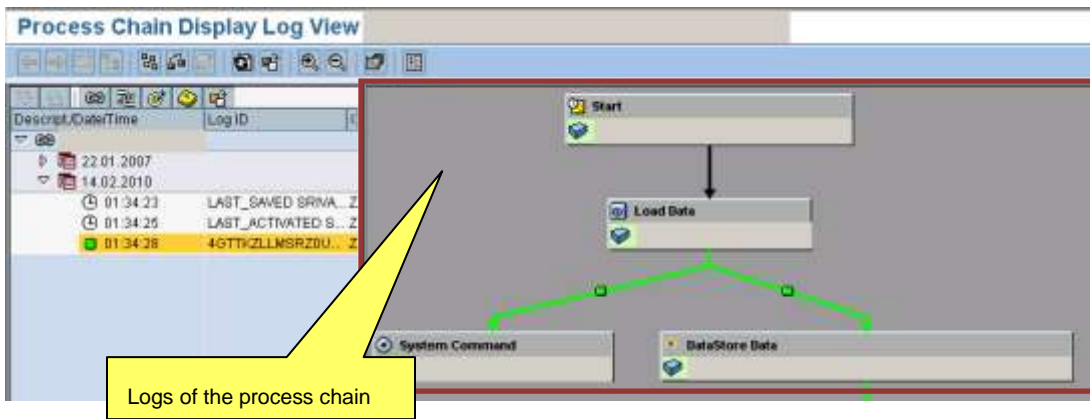


Getting into more details

By clicking on the hyperlink of the Log Id , we can see the logs of the chains as shown below:

Status	Steps	Main	Chain	Log-Id	SubChains	Steps	Day	Date	Time	Runtime	End Date	End Time
OK	OK	✓			0	6	SU	14.02.2010	01:34:28	00:17:10	14.02.2010	01:51:38
OK	OK	✓			0	6	SA	13.02.2010	01:00:23	00:22:18	13.02.2010	01:22:41
OK	OK	✓			0	6	FR	12.02.2010	01:00:23	00:11:33	12.02.2010	01:11:55
OK	OK	✓			0	6	TH	11.02.2010	01:00:02	00:12:25	11.02.2010	01:12:27
OK	OK	✓			0	6	WE	10.02.2010	01:00:21	00:12:45	10.02.2010	01:13:06
OK	OK	✓			0	6	TU	09.02.2010	01:00:07	00:10:08	09.02.2010	01:10:15
OK	OK	✓			0	6	SU	07.02.2010	01:00:13	02:03:30	07.02.2010	03:03:43
OK	OK	✓			0	6	SA	06.02.2010	01:00:17	00:08:16	06.02.2010	01:08:33
OK	OK	✓			0	6	FR	05.02.2010	01:00:15	00:09:44	05.02.2010	01:09:59
OK	OK	✓			0	6	TH	04.02.2010	01:00:22	00:07:46	04.02.2010	01:08:08
OK	OK	✓			0	6	WE	03.02.2010	01:00:06	00:33:54	03.02.2010	01:34:00
OK	OK	✓			0	6	TU	02.02.2010	13:52:25	00:06:51	02.02.2010	13:59:16

The below screen opens providing the details of the logs of the process chain. This is the same screen as the traditional way of the process chain logs.



For fast monitoring, click on the chain name.

Status	Steps	Main	Chain	Log-Id	SubChains	Steps	Day	Date	Time	Runtime	End Date	End Time
OK	OK	✓			0	6	SU	14.02.2010	01:34:28	00:17:10	14.02.2010	01:51:38
OK	OK	✓			0	6	SA	13.02.2010	01:00:23	00:22:18	13.02.2010	01:22:41
OK	OK	✓			0	6	FR	12.02.2010	01:00:23	00:11:33	12.02.2010	01:11:55
OK	OK	✓			0	6	TH	11.02.2010	01:00:02	00:12:25	11.02.2010	01:12:27
OK	OK	✓			0	6	WE	10.02.2010	01:00:21	00:12:45	10.02.2010	01:13:06
OK	OK	✓			0	6	TU	09.02.2010	01:00:07	00:10:08	09.02.2010	01:10:15
OK	OK	✓			0	6	SU	07.02.2010	01:00:13	02:03:30	07.02.2010	03:03:43
OK	OK	✓			0	6	SA	06.02.2010	01:00:17	00:08:16	06.02.2010	01:08:33
OK	OK	✓			0	6	FR	05.02.2010	01:00:15	00:09:44	05.02.2010	01:09:59
OK	OK	✓			0	6	TH	04.02.2010	01:00:22	00:07:46	04.02.2010	01:08:08
OK	OK	✓			0	6	WE	03.02.2010	01:00:06	00:33:54	03.02.2010	01:34:00
OK	OK	✓			0	6	TU	02.02.2010	13:52:25	00:06:51	02.02.2010	13:59:16

The below screen pops up, which gives the summarized information of the process chain logs, which is more easy to understand and faster.

The screenshot shows the 'Process Chain Hierarchy' table with the following columns: Sel, Status, Start Time, Runtime, # recs sent, # recs insert, Data, and InfoProviders. Red boxes highlight these columns, and yellow callout boxes labeled A through F point to them.

Process Chain Hierarchy	Sel	Status	Start Time	Runtime	# recs sent	# recs insert	Data	InfoProviders
LOADING	<input type="checkbox"/>	OO	07.02.2010 01:00:14	00:02:51	234640	234640	TD	
ODSACTIVAT	<input type="checkbox"/>	OO	07.02.2010 01:03:06	00:02:28				
COMMAND	<input type="checkbox"/>	OO	07.02.2010 01:03:06	00:00:02				
LOADING	<input type="checkbox"/>	OO	07.02.2010 01:05:35	00:00:30	0	0	TD	
LOADING	<input type="checkbox"/>	OO	07.02.2010 02:54:19	00:07:23	126032	93346	TD	
ROLLUP	<input type="checkbox"/>	OO	07.02.2010 03:01:44	00:01:59				

Listed below is the use of each of these.

A → Process Chain Hierarchy: It gives an insight into the various steps in the process chain.

B → Run Time: This field provides the run time of each step. This becomes quite useful at times when a process chain performance needs to be analyzed.

C → Records Sent: This gives the information on number of records transferred.

D → Records Insert: This gives the number of new records added to the data target.

E → Data: This column gives the information as to if the data is a transaction data, text, hierarchy or master data attributes load.

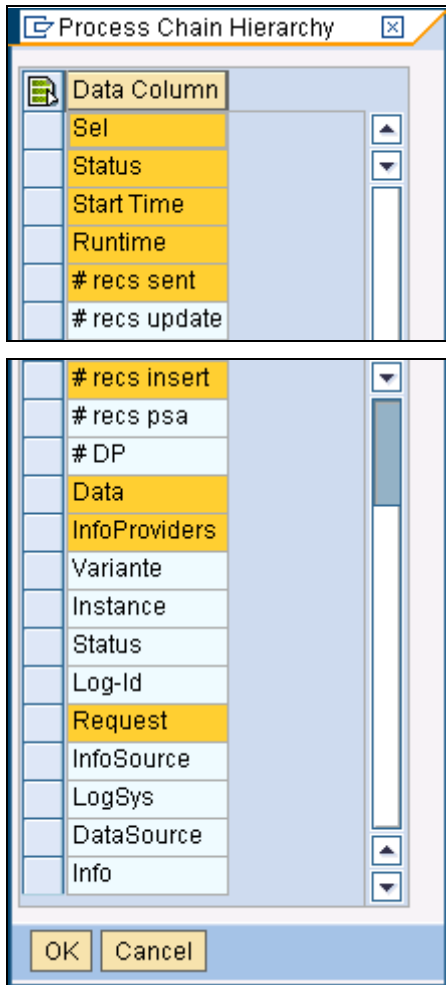
F → Info Providers: This gives the information of the data targets to which data is flowing.

In addition to the above there are multiple other fields available which can be used for the analysis and monitoring of process chains.

The screenshot shows the 'Process Chain Hierarchy' table with a yellow callout box pointing to the 'Add Column Width' icon in the toolbar. The callout text reads: 'Click here to add new fields for analysis'.

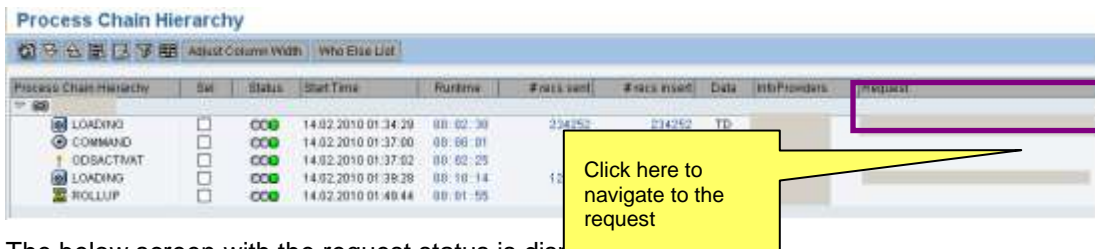
Process Chain Hierarchy	Sel	Status	Start Time	Runtime	# recs sent	# recs insert	Data	InfoProviders
LOADING	<input type="checkbox"/>	OO	14.02.2010 01:34:29			4252	TD	
COMMAND	<input type="checkbox"/>	OO	14.02.2010 01:37:00					
ODSACTIVAT	<input type="checkbox"/>	OO	14.02.2010 01:37:02	00:02:25				
LOADING	<input type="checkbox"/>	OO	14.02.2010 01:39:28	00:10:14	127659	93215	TD	
ROLLUP	<input type="checkbox"/>	OO	14.02.2010 01:49:44	00:01:55				

Please find the list below for the additional information which can be used. Most of the fields listed below are self explanatory.



Other Navigations

Apart from the benefits detailed above, it is also possible to directly navigate to the request from the screen below.



The below screen with the request status is displayed.

Monitor - Administrator Workbench

The screenshot shows the SAP Monitor Administrator Workbench. The left pane displays a tree view with the following structure:

- Monitor
 - successful (1)
 - 14.02.2010
 - 01:39:40 (127869 From 127869 Records)

The right pane shows the details for the selected monitor run, with tabs for Header, Status, and Details. The details section lists various parameters:

- Request
- Start Time
- Runtime
- Application
- InfoSource
- Trans. Rules
- Source Sys.
- InfoPackage
- Selections
- User
- Update
- Data Targets

Below these parameters, a table shows the following values:

Processing	PSA and data target in series
Update Mode	Delta update
Posting Method	Never update transaction data withou...
Records Check	Tolerate 1000 errors; Aggregation pe...
Character Check	Switched off

Some More Additional Features

So let's get into exploring yet additional features like:

- Compare Runtimes
- Who Else List
- Request Analysis
- Parallel Process Info
- Batch Manager

Compare Runtimes

This functionality becomes very useful and handy to compare multiple instances of the process chain.

To compare the run times, we need to select the multiple instances which we want to compare and click on the button 'Compare Runtimes'. There can be a maximum of 5 instances that can be compared.

The screenshot shows the 'Process Chain Runtime Analysis' tool. The 'Compare Runtimes' button is highlighted with a red box. A yellow callout box points to a selection of five rows in the data table, with the text 'Select the instances you want to compare and click on compare runtimes'.

Status	Steps	Main	Chain	Log-Id
0	6	SU	14.02.2010	01:34:28	00:17:10	14.02.2010	01:51:38		
0	6	SA	13.02.2010	01:00:23	00:22:18	13.02.2010	01:22:41		
0	6	FR	12.02.2010	01:00:23	00:11:33	12.02.2010	01:11:55		
0	6	TH	11.02.2010	01:00:02	00:12:25	11.02.2010	01:12:27		
0	6	WE	10.02.2010	01:00:21	00:12:45	10.02.2010	01:13:06		

The below screen appears showing the comparison of each run with the level of detail to each step. This helps in understanding, what might have gone wrong on any particular day/run.

Process Chain Runtime Comparison

Selected Process Chain Executions

ID Chain	Description	Log-Id	Start Date	Start Time	Runtime
L1			10.02.2010	01:00:21	00:12:45
L2			11.02.2010	01:00:02	00:12:25
L3			12.02.2010	01:00:33	00:11:33
L4			13.02.2010	01:00:23	00:22:18
L5			14.02.2010	01:34:28	00:17:10

Runtime Comparison

Chain	Type	Process Variante	L1-RunTime	L2-RunTime	L2-Dif-Run	L3-RunTime	L3-Dif-Run	L4-RunTime	L4-Dif-Run	L5-RunTime	L5-Dif-Run
	ODSACTVAT		00:04:48	00:05:41	+00:00:53	00:03:30	-00:01:18	00:03:31	-00:01:17	00:02:25	-00:02:23
	COMMAND		00:00:01	00:00:02	+00:00:01	00:00:02	+00:00:00	00:00:01	+00:00:00	00:00:01	+00:00:00
	ROLLUP		00:02:07	00:01:56	-00:00:11	00:02:13	+00:00:06	00:01:35	-00:00:32	00:01:55	-00:00:12
	LOADING		00:02:04	00:01:39	-00:00:25	00:02:58	+00:00:54	00:14:46	+00:12:42	00:10:14	+00:08:10
	LOADING		00:03:40	00:03:03	-00:00:37	00:02:47	-00:00:53	00:02:19	-00:01:21	00:02:30	-00:01:10

L1, L2 etc denote the various instances

In addition to the fields displayed above, we can also investigate on the below.

Change Layout

Displayed Colu | Sort Order | Filter | View | Display

Displayed Columns

Column Name

- Chain
- Type
- Process variante
- L1-RunTime
- L2-RunTime
- L2-Dif-Run
- L3-RunTime
- L3-Dif-Run
- L4-RunTime
- L4-Dif-Run
- L5-RunTime

Column Set

Column Name

- L1-RunT[sec]
- L1-Num.Exec.
- L2-RunT[sec]
- L2-Dif-RunT[sec]
- L2-Num.Exec.
- L3-RunT[sec]
- L3-Dif-RunT[sec]
- L3-Num.Exec.
- L4-RunT[sec]
- L4-Dif-RunT[sec]
- L4-Num.Exec.

Drag the fields from the column set to displayed columns

Who Else List

This feature helps in analyzing, which other process chain activities or process steps were active when a particular step was being executed.

More than 1 step at any instant cannot be chosen for this analysis.

Process Chain Hierarchy

Process Chain Hierarchy	Sel	Status	Start Time	Runtime	# recs se
LOADING	<input checked="" type="checkbox"/>	OO	14.02.2010 01:34:29	00:02:30	
COMBIRD	<input type="checkbox"/>	OO	14.02.2010 01:37:00	00:00:01	
ODSACTIVAT	<input type="checkbox"/>	OO	14.02.2010 01:37:02	00:02:25	
LOADING	<input type="checkbox"/>	OO	14.02.2010 01:39:28	00:18:14	127869 93216 TD
ROLLUP	<input type="checkbox"/>	OO	14.02.2010 01:49:44	00:01:55	

The below screen appears giving the information of which steps were being executed in parallel. This becomes very useful for identifying the load on the system at any particular instance.

Process Types - Who Else List

MetaChain	Chain	Log-Id	Status	Type	Variante	Start Date	Start Time	Runtime
			OO	LOADING		14.02.2010	01:34:29	00:02:30
			OO	LOADING		14.02.2010	01:23:01	00:18:15
			OO	LOADING		14.02.2010	01:05:19	01:24:46
			OO	DTP_LOAD		14.02.2010	00:55:31	00:51:37

Also here as well additional columns can be chosen for further analysis.

Change Layout

Displayed Colu | Sort Order | Filter | View | Display

Displayed Columns

- MetaChain
- Chain
- Log-Id
- Status
- Type
- Variante
- Start Date
- Start Time
- Runtime

Column Set

- MetaLog-Id
- Instance
- State
- Act-State
- End Date
- End Time
- Runtime[sec]
- Info

Drag the fields from the column set to displayed columns

Request Analysis

This feature helps in doing a detailed analysis of a particular request.

We need to double click on a loading step via info package to get to the request analysis screen.

The screenshot shows a table titled "Process Chain Hierarchy". A yellow callout box with the text "Double Click here" points to the "LOADING" step in the first column. The table has columns for "Sel", "Status", "Start Time", "Runtime", "#recs sent", "#recs insert", "Data", and "InfoProviders".

Process Chain Hierarchy	Sel	Status	Start Time	Runtime	#recs sent	#recs insert	Data	InfoProviders
LOADING	<input type="checkbox"/>	OO	14.02.2010 01:37:00	00:02:38	234252	234252	TD	
COMMAND	<input type="checkbox"/>	OO	14.02.2010 01:37:00	00:00:01				
ODSACTIVAT	<input type="checkbox"/>	OO	14.02.2010 01:37:02	00:02:25				
LOADING	<input type="checkbox"/>	OO	14.02.2010 01:39:20	00:10:14	127869	93216	TD	
ROLLUP	<input type="checkbox"/>	OO	14.02.2010 01:49:44	00:01:55				

The below request analysis screen appears with all the required details of a particular request for further detailed analysis.

It is divided into the below sub sections:

- Request Analysis
- Data Packages
- Summarized runtime of Data Targets
- Detailed Data Packages Analysis

Each of the above is shown in the screen shots below:

The screenshot shows the "Request Analysis" screen. A yellow callout box labeled "Request Analysis" points to the left-hand pane containing various request details. Another yellow callout box labeled "Data packages" points to the "Data Packages" table on the right.

Package	Update start at	Records sent	Records PSA	Records inserted	Runtime
1	05.02.2010 01:09:00	102,068	102,068	76,035	00:00:5
2	05.02.2010 01:07:59	16,400	16,400	12,529	00:00:1

The image shows two SAP screenshots. The top screenshot is titled "Summarized runtime for Data Targets" and contains a table with the following data:

InfoProvider	Type	Records passed	Update Rule	Final records	Insert runtime	Records inserted
INFOCUBE		118,468	00:00:12	88,564	00:00:23	88,564

A callout box points to this table with the text: "Summarized run time of data targets (includes all the data targets)".

The bottom screenshot is titled "Detailed Data Packages Analysis" and contains a table with the following data:

Package	PSA	Records sent	Transfer Rule	Records passed	Info Provider	Type	Update Rule	Final records	Insert runtime	Records inserted
1		102,068	00:00:04	102,068	INFOCUBE	INFOCUBE	00:00:10	76,035	00:00:13	76,035
2		16,400	00:00:02	16,400	INFOCUBE	INFOCUBE	00:00:02	12,529	00:00:10	12,529

A callout box points to this table with the text: "Detailed Data Packages Analysis".

Parallel Process Information

This also provides the information on number of parallel processes used for a particular step.

To get to this, select the particular step and navigate as below:

Extra → Parallel Process Info.

The image shows the SAP Process Monitor interface. The "Parallel Proc. Info" menu option is highlighted with a red box. A callout box points to this menu with the text: "Select the step and click on parallel Process Info." Below the menu, a table shows process details:

Start Time	Runtime
14.02.2010 13:04:52	00:00:00
14.02.2010 13:04:53	01:04:55
14.02.2010 14:09:49	00:12:32
14.02.2010 14:22:22	00:13:12
14.02.2010 14:35:36	00:16:44
14.02.2010 14:52:22	

It gives the information of number of parallel process as shown below in a pop up window.

The image shows an SAP Information pop-up window with the following text:

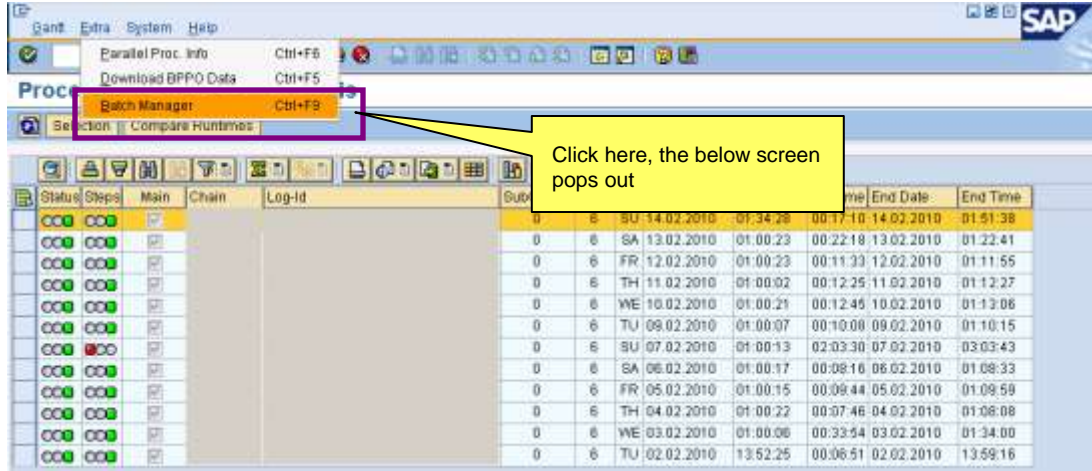
Maximum parallel degree of selected processes: 1
at 14.02.2010 13:04:53 time zone

Batch Manager Information

The batch manager information of any process chain give the information of the work processes used mapped against time.

To get to these details, select the instance of the process chain which needs to be analyzed and navigate as below:

Extra → Batch Manager



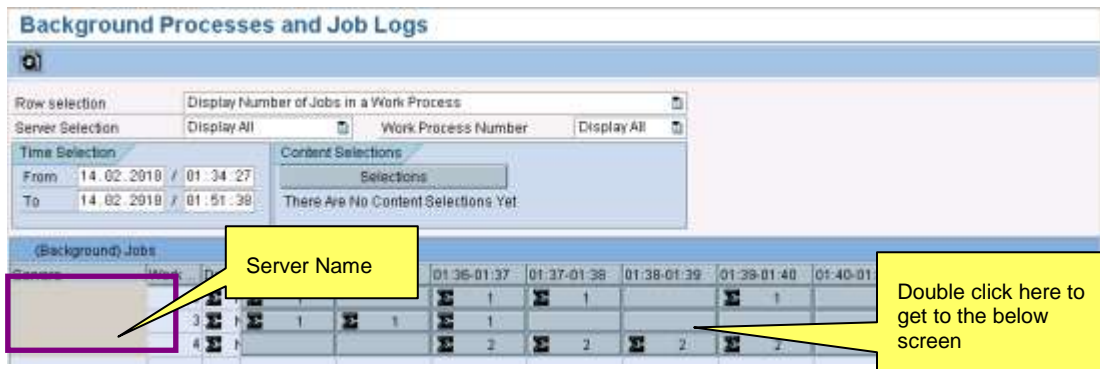
This gives the details of the background processed and the job logs.

It includes the below details:

The server on which the various steps of the process chain were executed.

Number of steps that were executed.

Time mapping for the same etc.



Here we can see the details of the various steps that were executed.

Background Processes and Job Logs

Row selection: Display Number of Jobs in a Work Process

Server Selection: Display All | Work Process Number: Display All

Time Selection: From 14.02.2010 / 01:34:27 To 14.02.2010 / 01:51:38

Content Selections: There Are No Content Selections Yet

(Background) Jobs

Servers	Work	De	01:34-01:35	01:35-01:36	01:36-01:37	01:37-01:38	01:38-01:39	01:39-01:40	01:40-01:41	01:41-01:42	01:42-01:43
2	P	1			1	1					
3	N	1	1	1	1						
4	P				2	2	2	2			

Details for the Jobs

Servers: []

Work process number: 4

Display All Background Jobs of a Selected Work Process

Process Type	Job	Batch ID	Batch Desc	Ux	Days	Job Name	
DD&ACTIVAT	CC	INF0_46TH8FY5P2B4V5E9RYB5RHWS0H		1	X	0	01_PROCESS_OD&ACTIVAT
DD&ACTIVAT	CC	INF0_46TH8G17AY4ZP9W4FTCSC255T		1	X	0	01_PROCESS_OD&ACTIVAT

Work Process Number and the Server

Steps executed

Related Content

http://help.sap.com/saphelp_nw70/helpdata/EN/47/9e9290dac60985e10000000a42189c/frameset.htm

http://help.sap.com/saphelp_nw04/helpdata/EN/8f/c08b3baaa59649e10000000a11402f/frameset.htm

http://help.sap.com/saphelp_nw04/Helpdata/EN/6e/192756029db54192427cf6853c77a7/frameset.htm

For more information, visit the [Business Intelligence homepage](#).

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