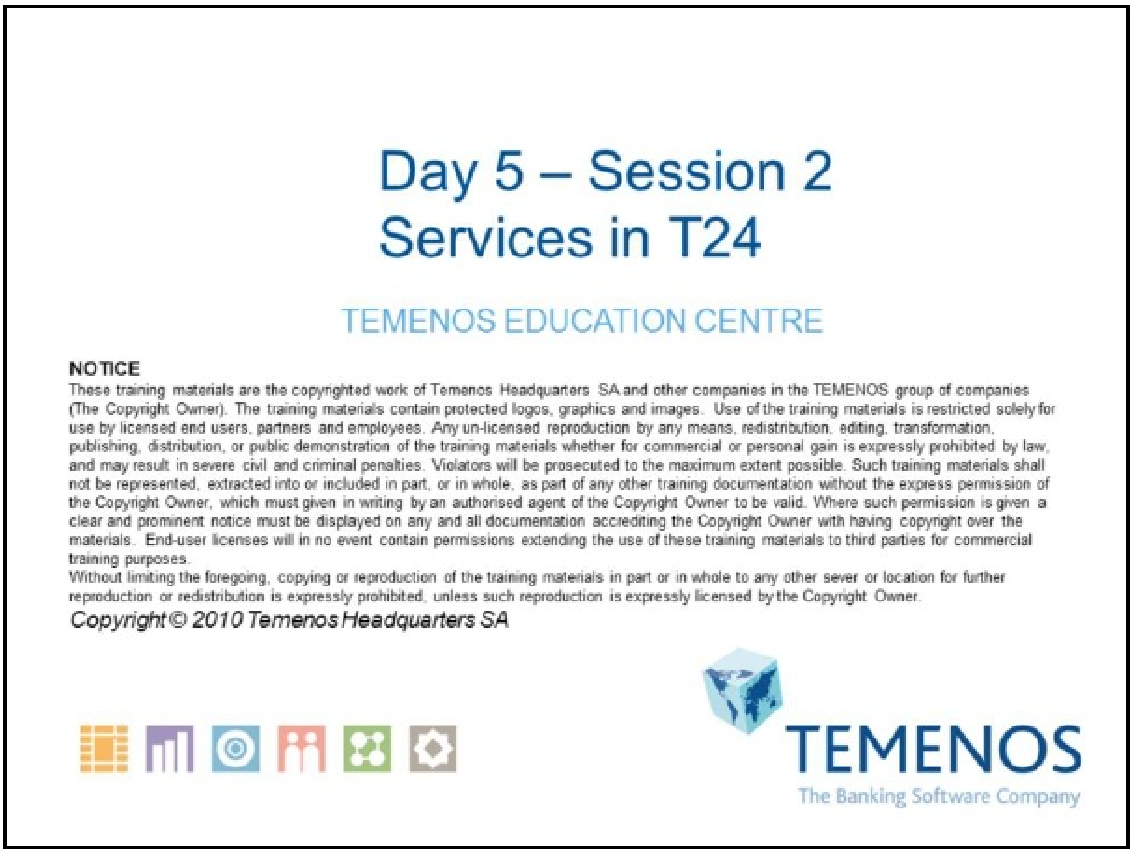

Day 5 – Session 2
Services in T24

TEMENOS EDUCATION CENTRE

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Session 2

TEMENOS

Session 2

T24 Services

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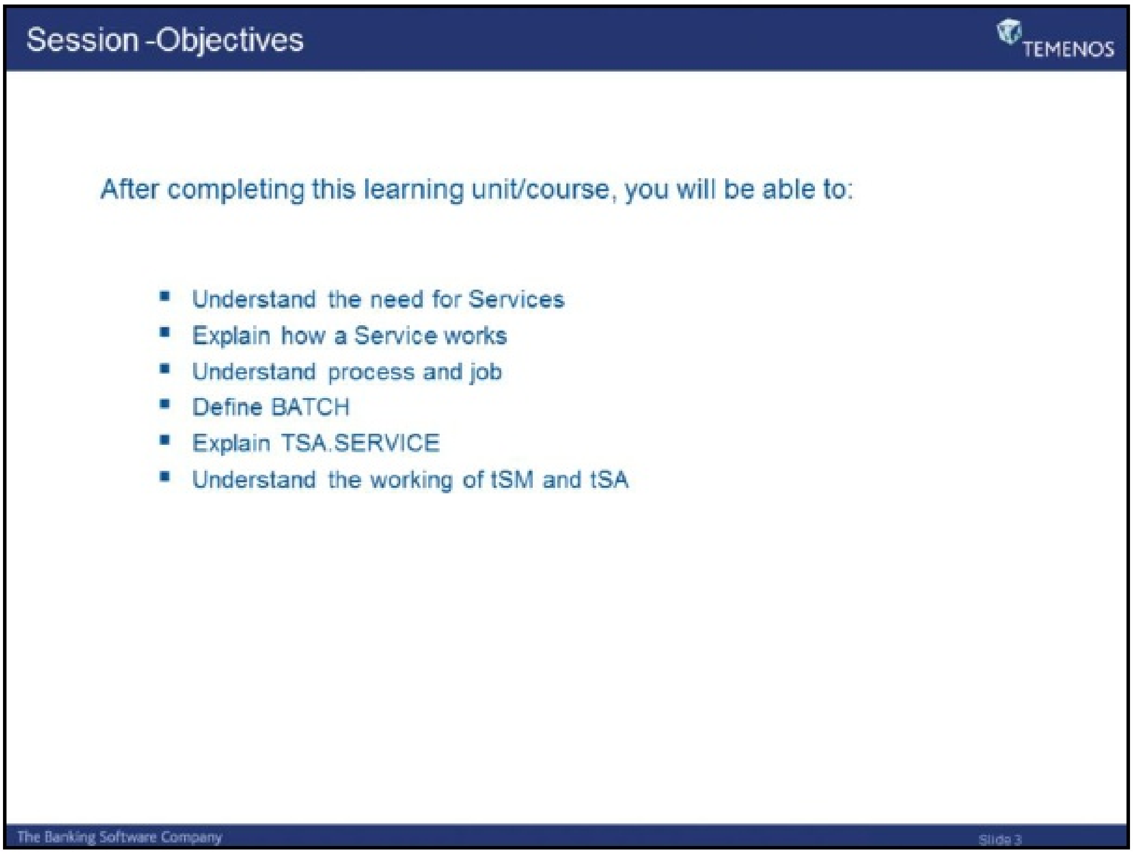
Slide 2



Session -Objectives

TEMENOS

After completing this learning unit/course, you will be able to:

- Understand the need for Services
- Explain how a Service works
- Understand process and job
- Define BATCH
- Explain TSA.SERVICE
- Understand the working of tSM and tSA

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Slide 3

Services – A Recap

TEMENOS

- Help in automation
- Services are programs that are run as background processes without user intervention
- Can be executed at a schedule and can be also be triggered by a manual activity.
- They spawn multiple processes simultaneously and are centrally monitored by T24
- Catalogued in TSA.SERVICE application

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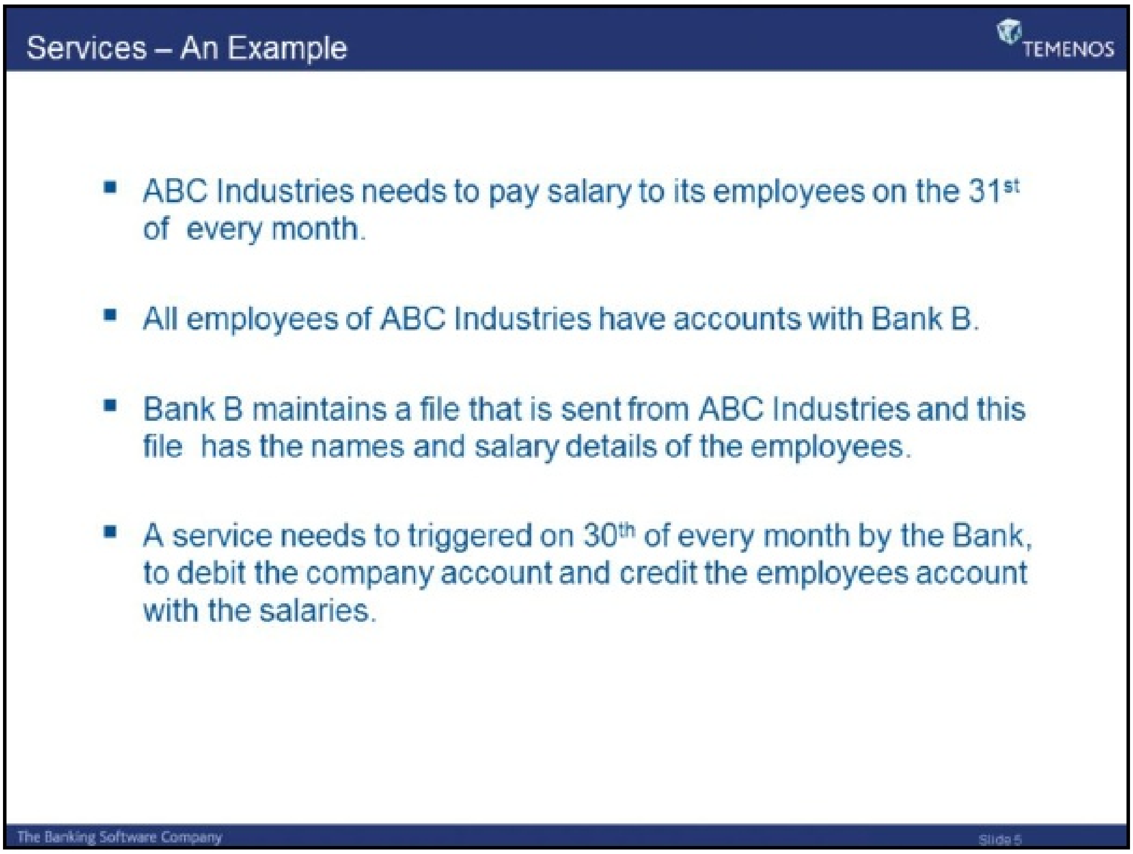
Slide 4



Services – An Example

TEMENOS

- ABC Industries needs to pay salary to its employees on the 31st of every month.
- All employees of ABC Industries have accounts with Bank B.
- Bank B maintains a file that is sent from ABC Industries and this file has the names and salary details of the employees.
- A service needs to triggered on 30th of every month by the Bank, to debit the company account and credit the employees account with the salaries.

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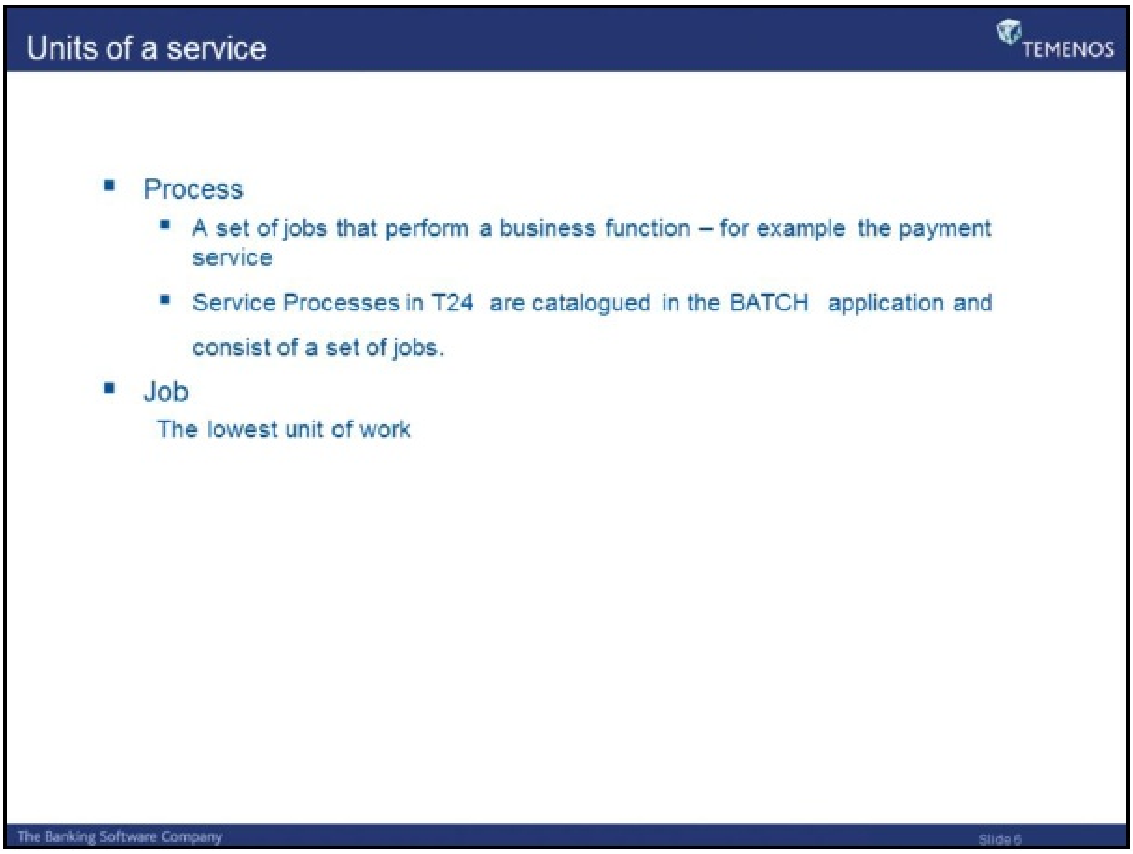
Slide 5



Units of a service

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- Process
  - A set of jobs that perform a business function – for example the payment service
  - Service Processes in T24 are catalogued in the BATCH application and consist of a set of jobs.
- Job

  The lowest unit of work

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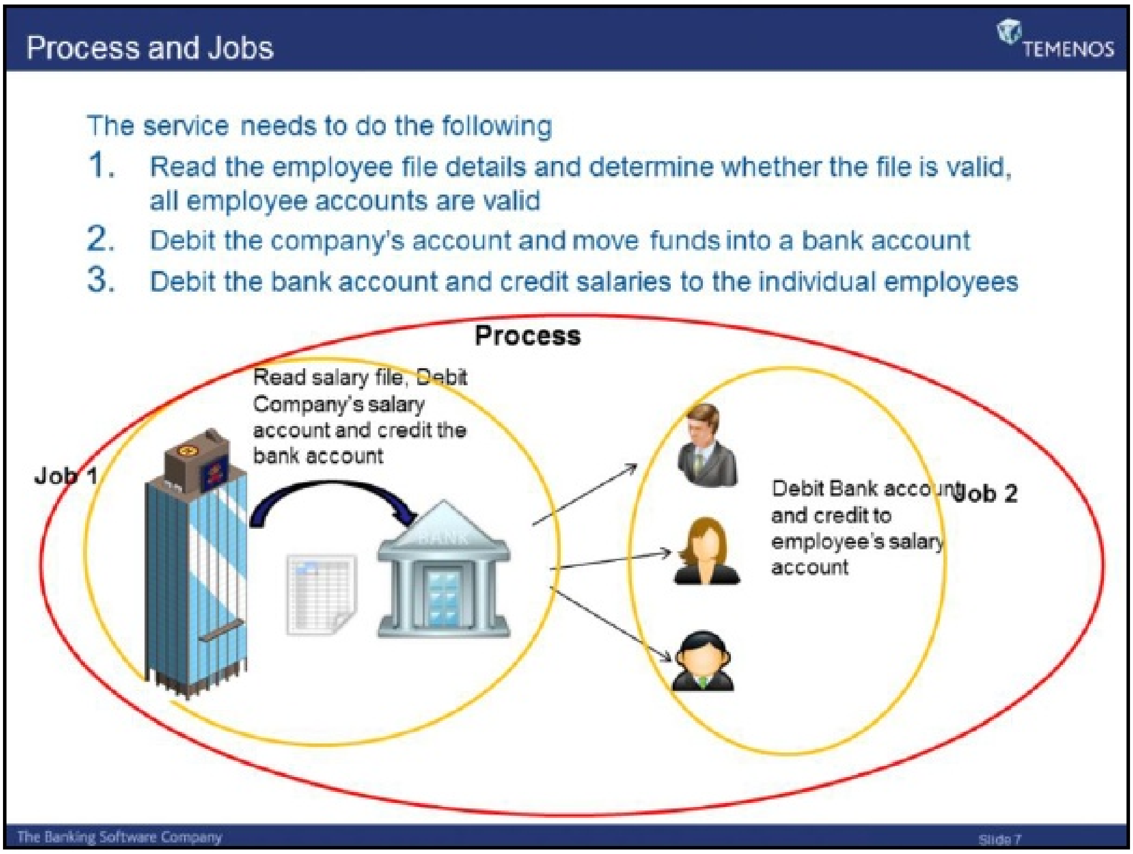
Slide 6



Process and Jobs

TEMENOS

The service needs to do the following

1. Read the employee file details and determine whether the file is valid, all employee accounts are valid
2. Debit the company's account and move funds into a bank account
3. Debit the bank account and credit salaries to the individual employees

Process
Job 1
Read salary file, Debit Company's salary account and credit the bank account
BANK
Job 2
Debit Bank account and credit to employee's salary account

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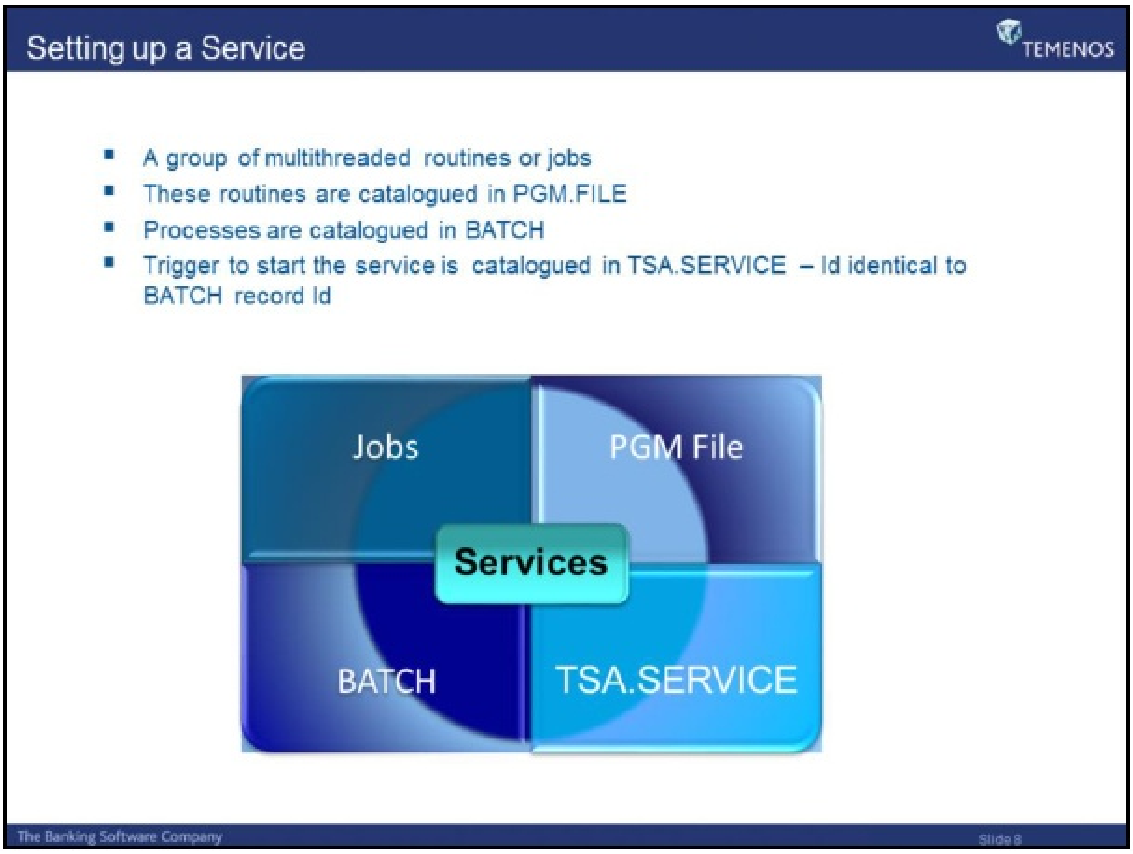
Slide 7



Setting up a Service

TEMENOS

- A group of multithreaded routines or jobs
- These routines are catalogued in PGM.FILE
- Processes are catalogued in BATCH
- Trigger to start the service is catalogued in TSA.SERVICE – Id identical to BATCH record Id

Jobs
PGM File
Services
BATCH
TSA.SERVICE

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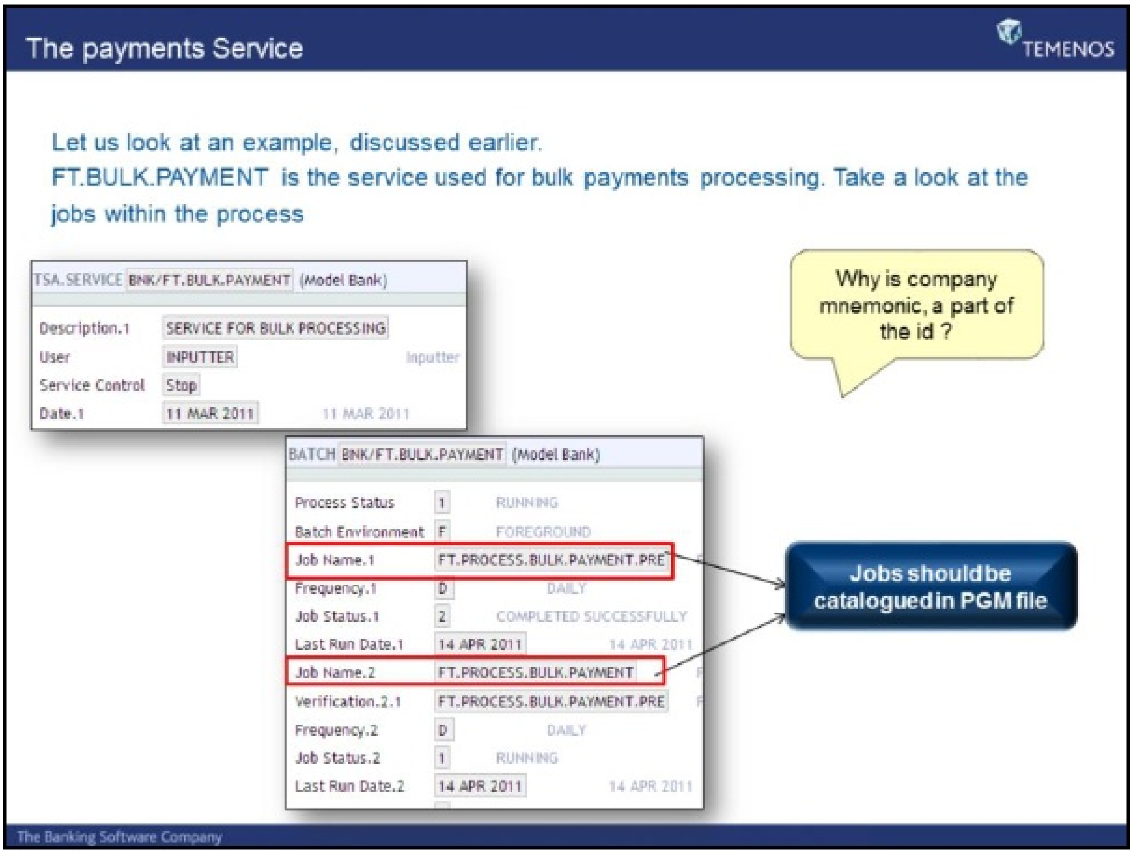
Slide 8

Each multi threaded routine in T24 must have a PGM.FILE entry with TYPE = B which stands for BATCH.

Each B type routine has an entry in the BATCH application, and a service is no different. A service could be made up of one multi threaded routine or multiple routines that must be run in an order. You will use the BATCH record to define this order using the JOB field. The BATCH record that you will create will NOT have a BATCH.STAGE defined as this record must NOT be picked up during COB.

Finally, you must create a record in the application TSA.SERVICE. The ID of the record must match the BATCH record Id. Why is this? – This is because when you start off a service, T24 looks for a record in the BATCH application and then finds out which routine it must execute in the background.



The payments Service

TEMENOS

Let us look at an example, discussed earlier.
FT.BULK.PAYMENT is the service used for bulk payments processing. Take a look at the jobs within the process

TSA.SERVICE BNK/FT.BULK.PAYMENT (Model Bank)

Description.1	SERVICE FOR BULK PROCESSING	
User	INPUTTER	Inputter
Service Control	Stop	
Date.1	11 MAR 2011	11 MAR 2011

BATCH BNK/FT.BULK.PAYMENT (Model Bank)

Process Status	1	RUNNING
Batch Environment	F	FOREGROUND
Job Name.1	FT.PROCESS.BULK.PAYMENT.PRE	
Frequency.1	D	DAILY
Job Status.1	2	COMPLETED SUCCESSFULLY
Last Run Date.1	14 APR 2011	14 APR 2011
Job Name.2	FT.PROCESS.BULK.PAYMENT	
Verification.2.1	FT.PROCESS.BULK.PAYMENT.PRE	
Frequency.2	D	DAILY
Job Status.2	1	RUNNING
Last Run Date.2	14 APR 2011	14 APR 2011

Why is company mnemonic, a part of the id ?

Jobs should be catalogued in PGM file

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In this example, an existing service called BNK/SWIFT.OUT is used. The screen shots above show the identical TSA.SERVICE and BATCH record Ids.

From the BATCH record, you can find out the actual name of the multi threaded routine and check it's PGM.FILE entry

1. It is important to understand - Why the Bank Mnemonic is part of the BATCH record ID?

   This is because all processes are company specific. If we want the same process to be executed for each company defined in the COMPANY application then we have to have processes defined for every company separately.

For Example:

A company with mnemonic BNK might want a process to run during COB whereas

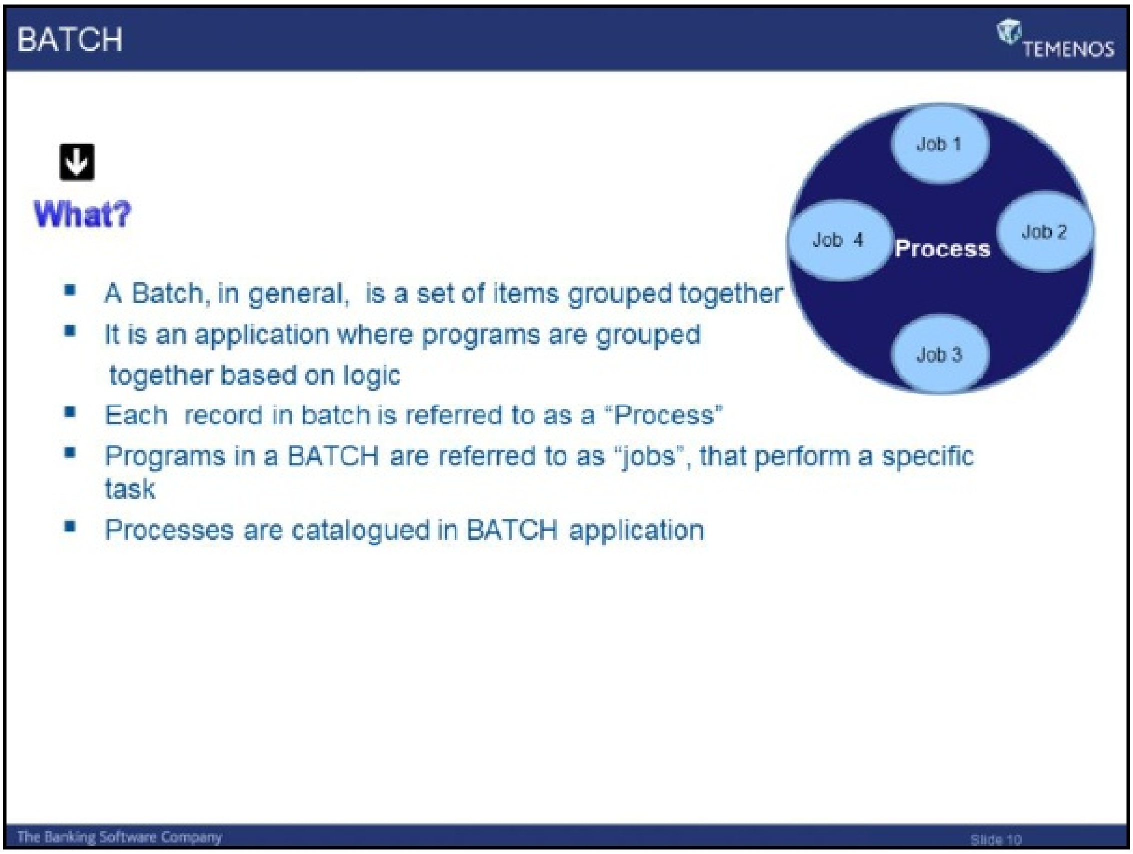
another company with mnemonic EU1 might not want the same process to run
during COB. The only way to do this in T24, is to create a process in the BATCH application with ID prefixed with the mnemonic BNK and not EU1.

BNK/<Batch Process ID Name>

If you want this batch process to be executed for both BNK and EU1, then you need to do the following. Create the following records in the BATCH application

BNK/<Batch Process ID Name>

EU1/<Batch Process ID Name>



BATCH

TEMENOS

What?

- A Batch, in general, is a set of items grouped together
- It is an application where programs are grouped together based on logic
- Each record in batch is referred to as a "Process"
- Programs in a BATCH are referred to as "jobs", that perform a specific task
- Processes are catalogued in BATCH application

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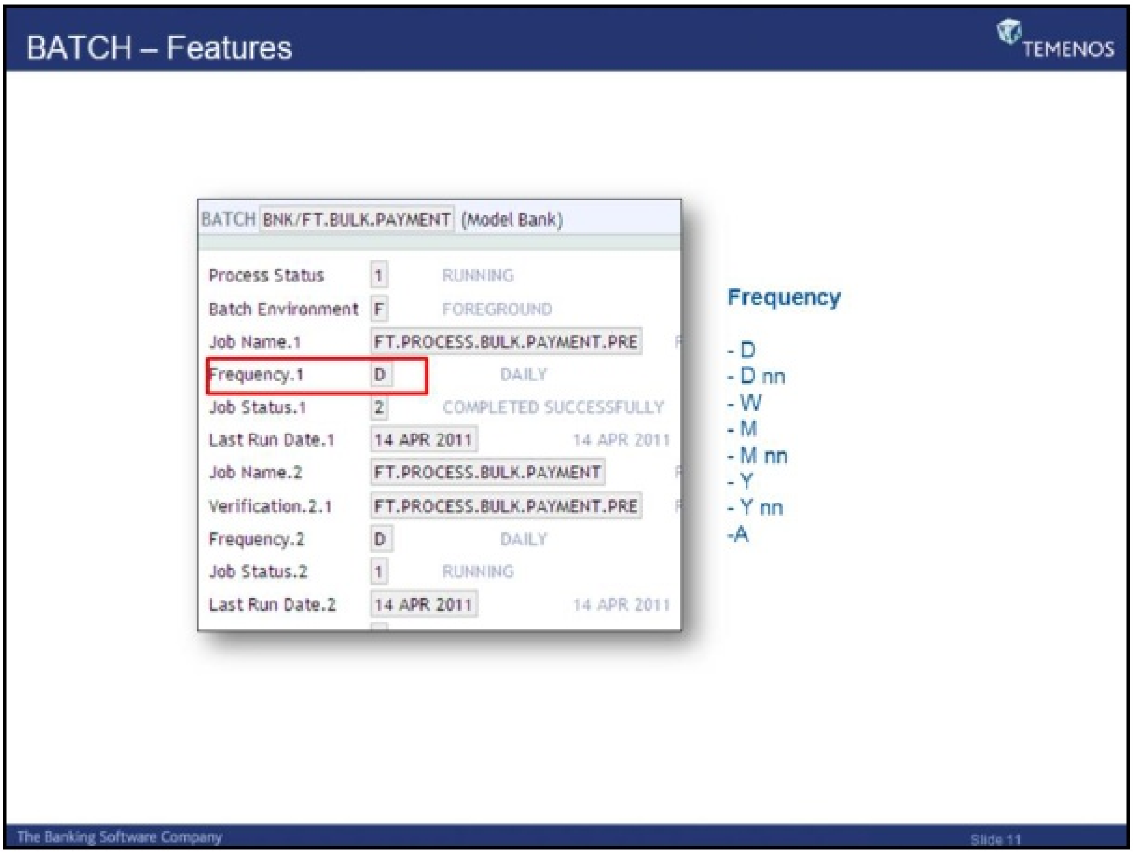

BATCH – Features

TEMENOS

BATCH BNK/FT.BULK.PAYMENT (Model Bank)

Process Status 1 RUNNING
Batch Environment F FOREGROUND
Job Name.1 FT.PROCESS.BULK.PAYMENT.PRE
Frequency.1 D DAILY
Job Status.1 2 COMPLETED SUCCESSFULLY
Last Run Date.1 14 APR 2011 14 APR 2011
Job Name.2 FT.PROCESS.BULK.PAYMENT
Verification.2.1 FT.PROCESS.BULK.PAYMENT.PRE
Frequency.2 D DAILY
Job Status.2 1 RUNNING
Last Run Date.2 14 APR 2011 14 APR 2011

Frequency

- D
- D nn
- W
- M
- M nn
- Y
- Y nn
-A

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Slide 11

1. BATCH.ENVIRONMENT

Defines the environment to run the process in, i.e foreground or background

A foreground process will be run directly on the users terminal, whereas a background process will run as a phantom task. The background facility allows the user to run a number of processes concurrently.</p>

2. Job Name Contains the name of the routine to be executed. All routines defined here will have an entry in PGM.FILE with TYPE set to ‘B’

3. Frequency specifies the frequency at which the batch job has to be executed. It can have values as follows.

D specifies that the job will be executed every working day.

D nn specifies that the job will be executed every nnth working day

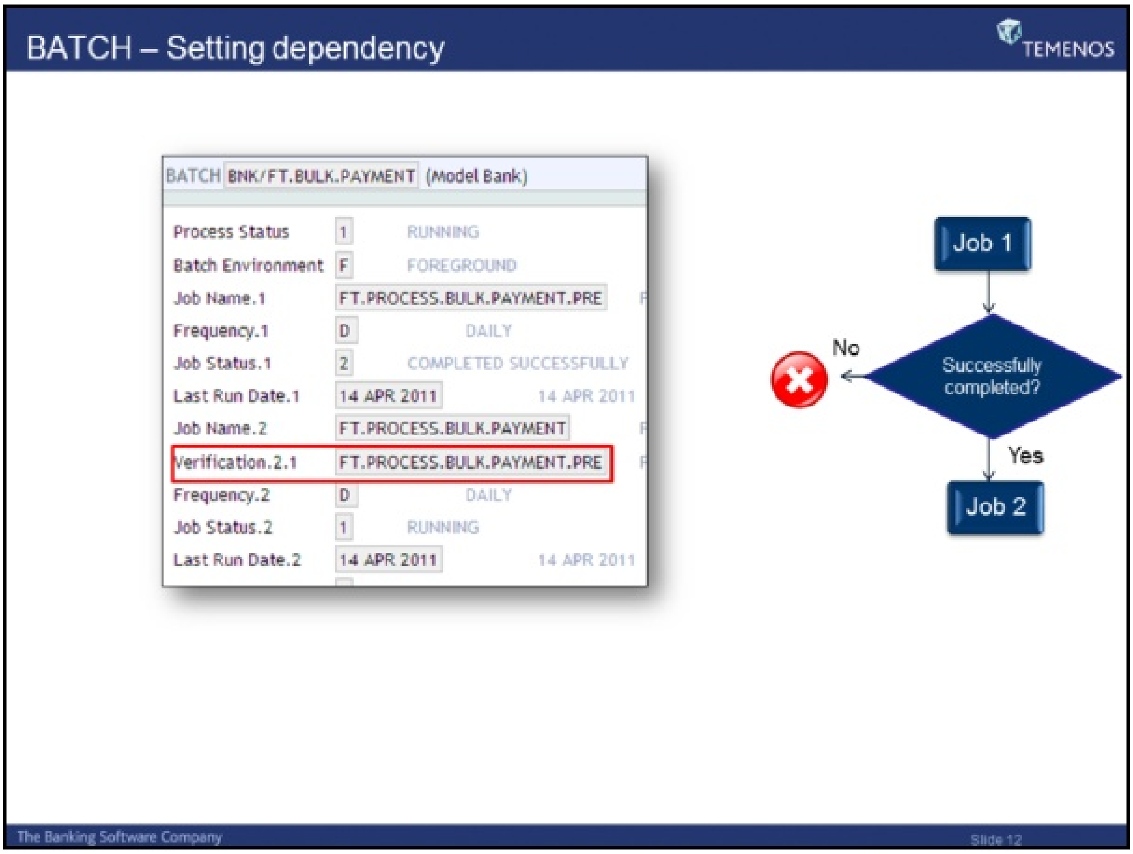
W specifies that the job will be executed on a weekly basis, that is every Friday

M specifies that the job will be executed on the last working day of every month
M nn specifies that the job will be executed every nn day of the month or previous working day of each month

Y specifies that the job will be executed last working day of the year

Y nn specifies that the job will be executed the last working day of the nn'th month

A specifies that the job will be executed on an adhoc basis. You should manually specify a date on which the job has to be executed.



BATCH – Setting dependency

TEMENOS

BATCH BNK/FT.BULK.PAYMENT (Model Bank)

Process Status	1	RUNNING
Batch Environment	F	FOREGROUND
Job Name.1	FT.PROCESS.BULK.PAYMENT.PRE	
Frequency.1	D	DAILY
Job Status.1	2	COMPLETED SUCCESSFULLY
Last Run Date.1	14 APR 2011	14 APR 2011
Job Name.2	FT.PROCESS.BULK.PAYMENT	
Verification.2.1	FT.PROCESS.BULK.PAYMENT.PRE	
Frequency.2	D	DAILY
Job Status.2	1	RUNNING
Last Run Date.2	14 APR 2011	14 APR 2011

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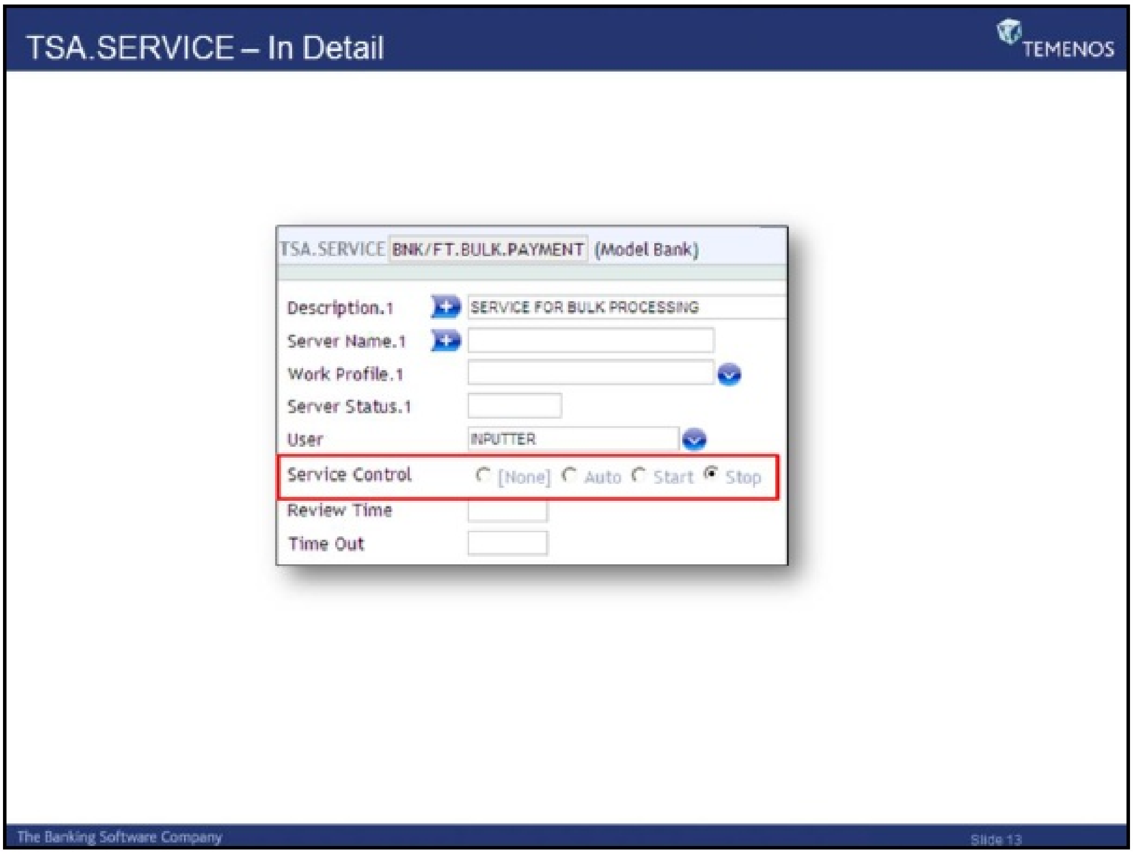
Slide 12

1. In the field **Verification,** you can enter the name of the job (routine) which needs to have been executed successfully on that day before the current job is executed**.** For e.g. The job FT.PROCESS.BULK.PAYMENT will be executed only if the job FT.PROCESS.BULK.PAYMENT.PRE has been executed successfully.

   NOTE: Only jobs already defined in the current record can be entered in the field Verification. Jobs belonging to other Processes (Batch Records) cannot be entered in this field.

2. **Next Run Date** contains the date when the current job has to run next. Populated automatically on authorisation of the record (new jobs) or on successful execution of the job. NO date is populated for Daily jobs, as the jobs needs to be run daily. User input is required for adhoc jobs.

3. **Last Run Date** is a No Input Field and is populated on successful execution of the job during COB.



TSA.SERVICE – In Detail

TEMENOS

TSA.SERVICE BNK/FT.BULK.PAYMENT (Model Bank)

Description.1	SERVICE FOR BULK PROCESSING
Server Name.1	
Work Profile.1	
Server Status.1	
User	INPUTTER
Service Control	○ [None] ○ Auto ○ Start ● Stop
Review Time	
Time Out	

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TSA.SERVICE is the application where all services are defined and controlled by the end user.

ID: The id of the service record must match a record in the BATCH application.

DESCRIPTION : This field holds the description of what the service is used for.

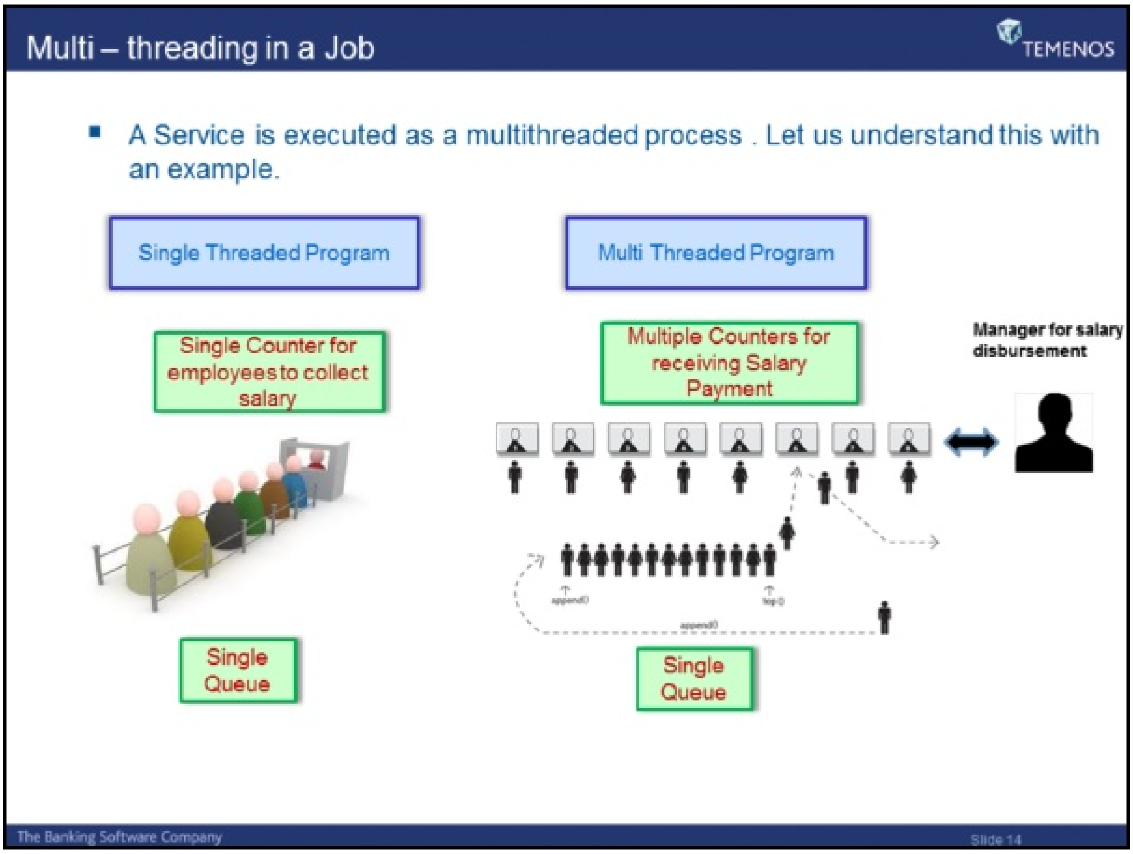
SERVER NAME : This field holds the IP address or the host name of the server where the current service needs to be executed. This will be used on in a multi application server architecture.

The whole idea behind a service is that you will have multiple copies of the process running so that the load can be shared. How many such copies do you want running? That is defined in the field WORK PROFILE. This field holds the ID of the record in TSA.WORKLOAD.PROFILE application which defines the number of copies that will actually execute.

USER : This field should hold a valid T24 user name, whose details are used to update the audit fields of records that get created or updated by the service.

SERVICE CONTROL : This field can hold three values – AUTO, START and STOP. STOP can be set in this field to stop the service when it is executing.

You will learn about the other fields in the next few slides.



Multi – threading in a Job

- A Service is executed as a multithreaded process . Let us understand this with an example.

Single Threaded Program

Single Counter for employees to collect salary

Single Queue

Multi Threaded Program

Multiple Counters for receiving Salary Payment

Manager for salary disbursement

Single Queue

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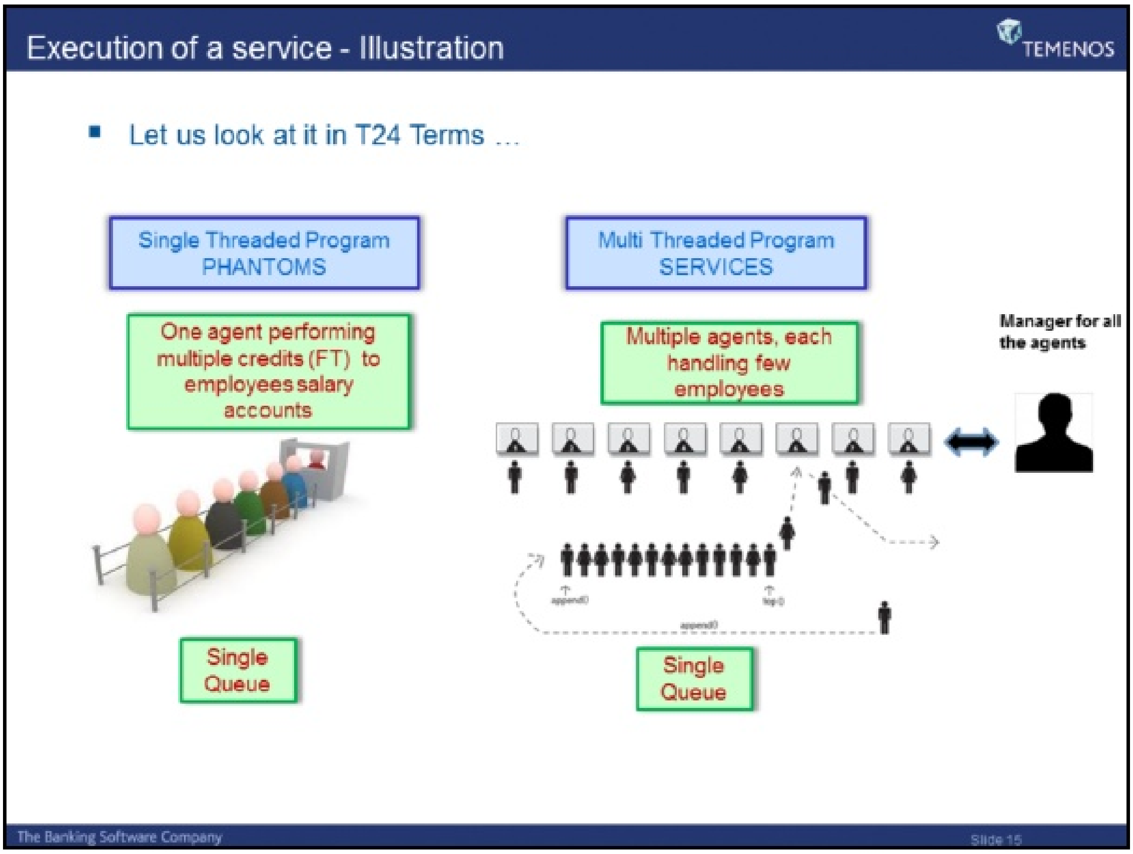
Slide 14



Execution of a service - Illustration

TEMENOS

- Let us look at it in T24 Terms …

Single Threaded Program PHANTOMS

One agent performing multiple credits (FT) to employees salary accounts

Single Queue

Multi Threaded Program SERVICES

Multiple agents, each handling few employees

Manager for all the agents

Single Queue

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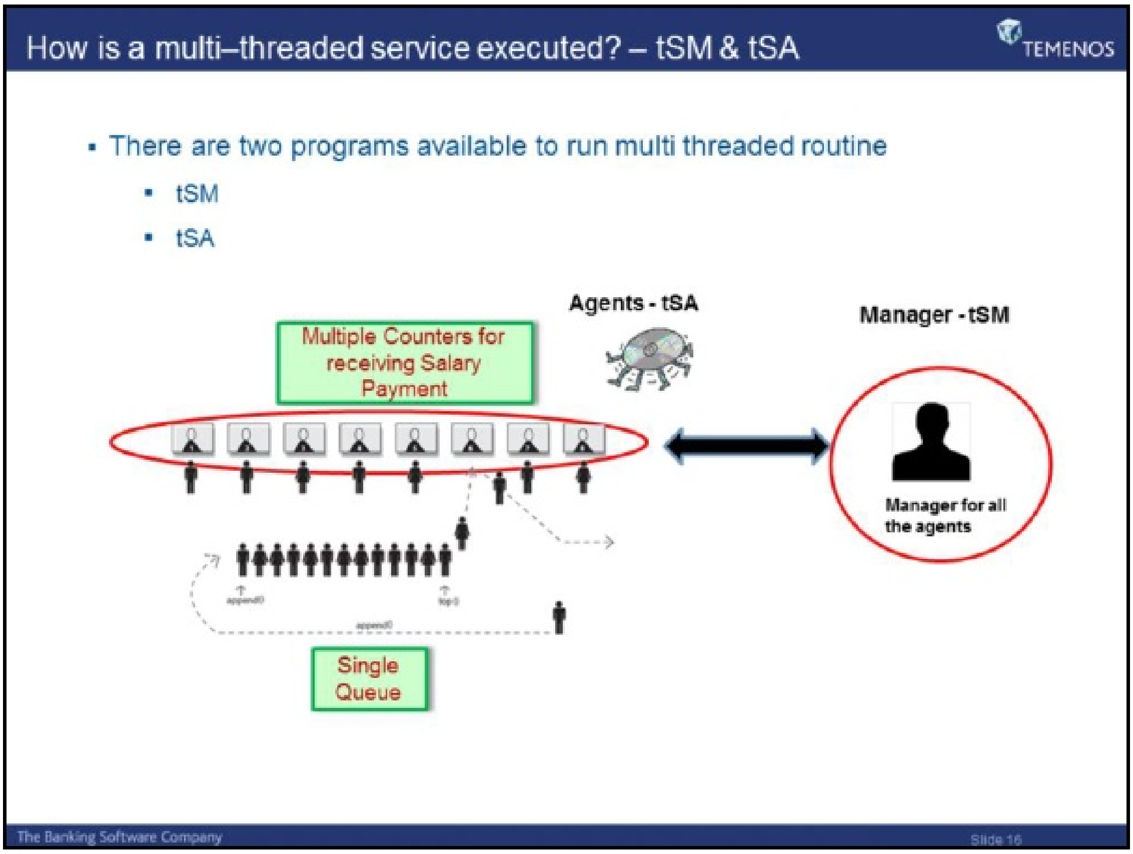
Slide 15



How is a multi–threaded service executed? – tSM & tSA

- There are two programs available to run multi threaded routine
  - tSM
  - tSA

Multiple Counters for receiving Salary Payment
Agents - tSA
Manager - tSM
Manager for all the agents
append()
top()
append()
Single Queue

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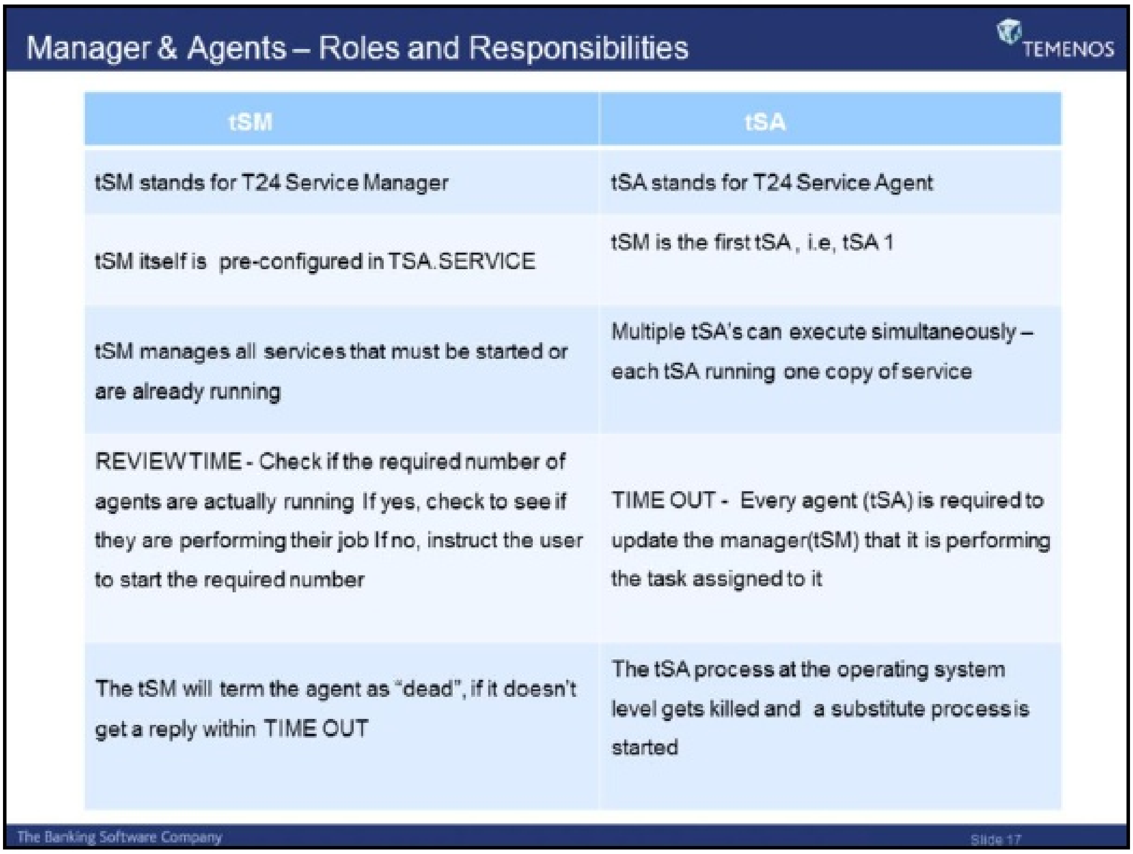
Slide 16



Manager & Agents – Roles and Responsibilities

TEMENOS

tSM	tSA
tSM stands for T24 Service Manager	tSA stands for T24 Service Agent
tSM itself is pre-configured in TSA.SERVICE	tSM is the first tSA , i.e, tSA 1
tSM manages all services that must be started or are already running	Multiple tSA's can execute simultaneously – each tSA running one copy of service
REVIEWTIME - Check if the required number of agents are actually running If yes, check to see if they are performing their job If no, instruct the user to start the required number	TIME OUT - Every agent (tSA) is required to update the manager(tSM) that it is performing the task assigned to it
The tSM will term the agent as "dead", if it doesn't get a reply within TIME OUT	The tSA process at the operating system level gets killed and a substitute process is started

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1. REVIEW TIME :

The job of the tSM is to

Read the TSA.SERVICE records with SERVICE.CONTROL field set to START

Read the relevant TSA.WORKLOAD.PROFILE records

Check if the required number of agents are actually running

If yes, check to see if they are performing their job

If no, instruct the user to start the required number of agents

TIME OUT :

Every agent (tSA) is required to update the manager(tSM) that it is performing the task assigned to it

The tSM is designed to wait for a stipulated amount

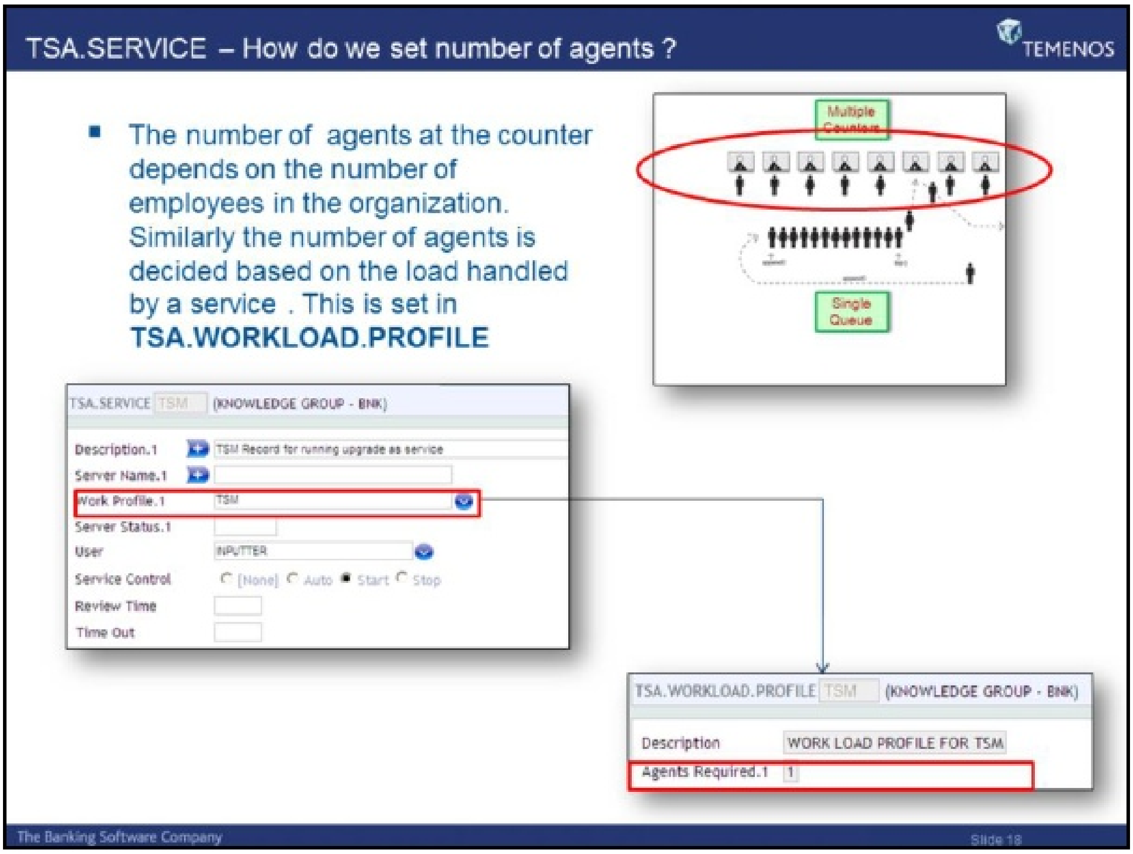
of time for each agent to report that it is alive and working

The tSM will term the agent as "dead", if it doesn't get a

reply within the stipulated time.

It will stop the tSA process at the operating system level (kill the process) and start a substitute process

The time given for every agent to report to the tSM that it is alive and working is set in the field TIME.OUT (Specify the value in the COB record)



TSA.SERVICE – How do we set number of agents ?

- The number of agents at the counter depends on the number of employees in the organization. Similarly the number of agents is decided based on the load handled by a service . This is set in **TSA.WORKLOAD.PROFILE**

TSA.SERVICE TSM (KNOWLEDGE GROUP - BNK)

Description.1	TSM Record for running upgrade as service
Server Name.1	
Work Profile.1	TSM
Server Status.1	
User	INPUTTER
Service Control	○ [None] ○ Auto ● Start ○ Stop
Review Time	
Time Out	

TSA.WORKLOAD.PROFILE TSM (KNOWLEDGE GROUP - BNK)

Description	WORK LOAD PROFILE FOR TSM
Agents Required.1	1

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Slide 18

What you see here is the TSM record in TSA.SERVICE application.

Description field holds the text that describes the TSA.SERVICE record

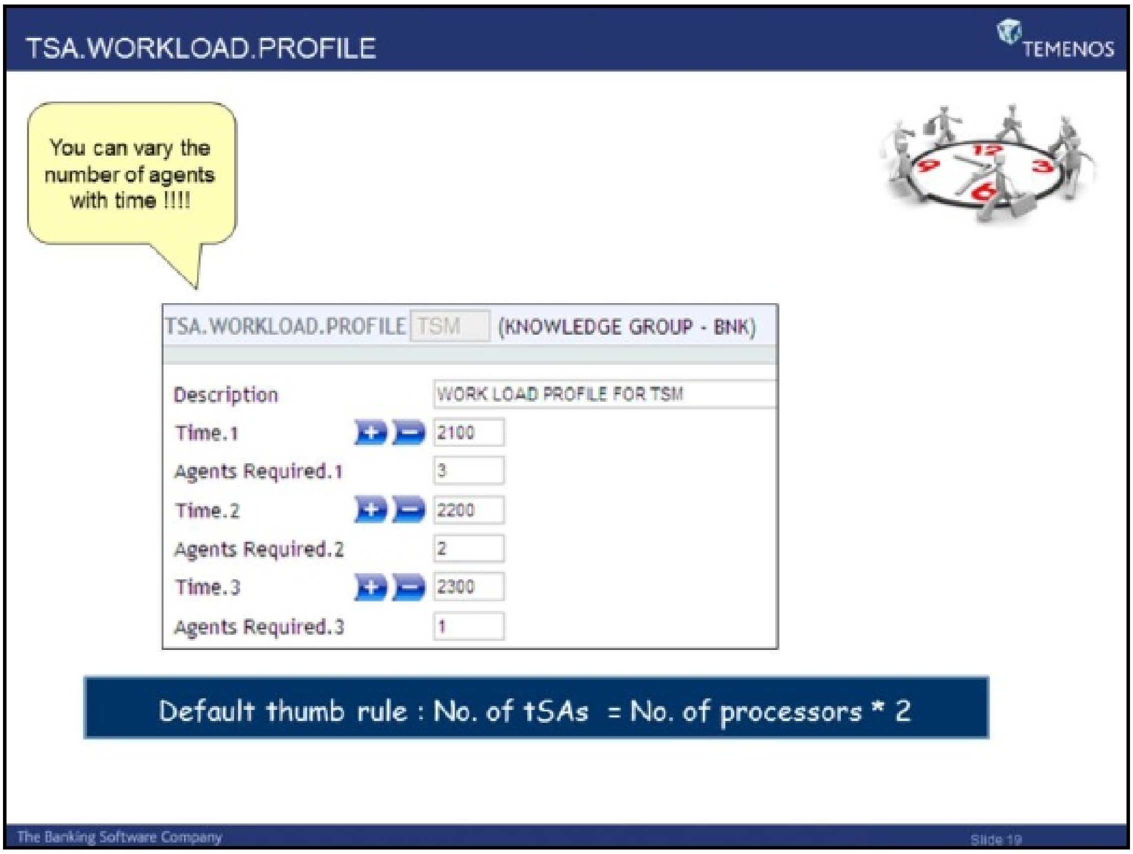
Server Name field holds the IP address or the host name of the server where this service TSM needs to be executed.

There can be only one tSM per T24 application server. When MS (Multi Server) product is installed, this field can be multi valued to include the ip of all the servers involved in running COB

Work Profile field holds the ID of the TSA.WORKLOAD.PROFILE application which in turn contains the number of agents required to run this service. For the record TSM, the number of agents should always be 1. This field forms a multivalue set along with Description and Server Name fields

User field holds a valid T24 user name. It has no significance for this record TSM. Has significance for the record COB.

Service Control : It is the field that controls the starting and stopping of this service. If set to START, T24 will allow us to start TSM by issuing the command START.TSM. To stop the TSM, set this field to STOP.



TSA.WORKLOAD.PROFILE

You can vary the number of agents with time !!!!

TSA.WORKLOAD.PROFILE TSM (KNOWLEDGE GROUP - BNK)

Description	WORK LOAD PROFILE FOR TSM
Time.1	2100
Agents Required.1	3
Time.2	2200
Agents Required.2	2
Time.3	2300
Agents Required.3	1

Default thumb rule : No. of tSAs = No. of processors * 2

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Slide 19

This is the application used to specify the number of agents. The number of agents in TSA.WORKLOAD.PROFILE can be set based on time. Agents can be increased/decreased based on time (T24 application server time)

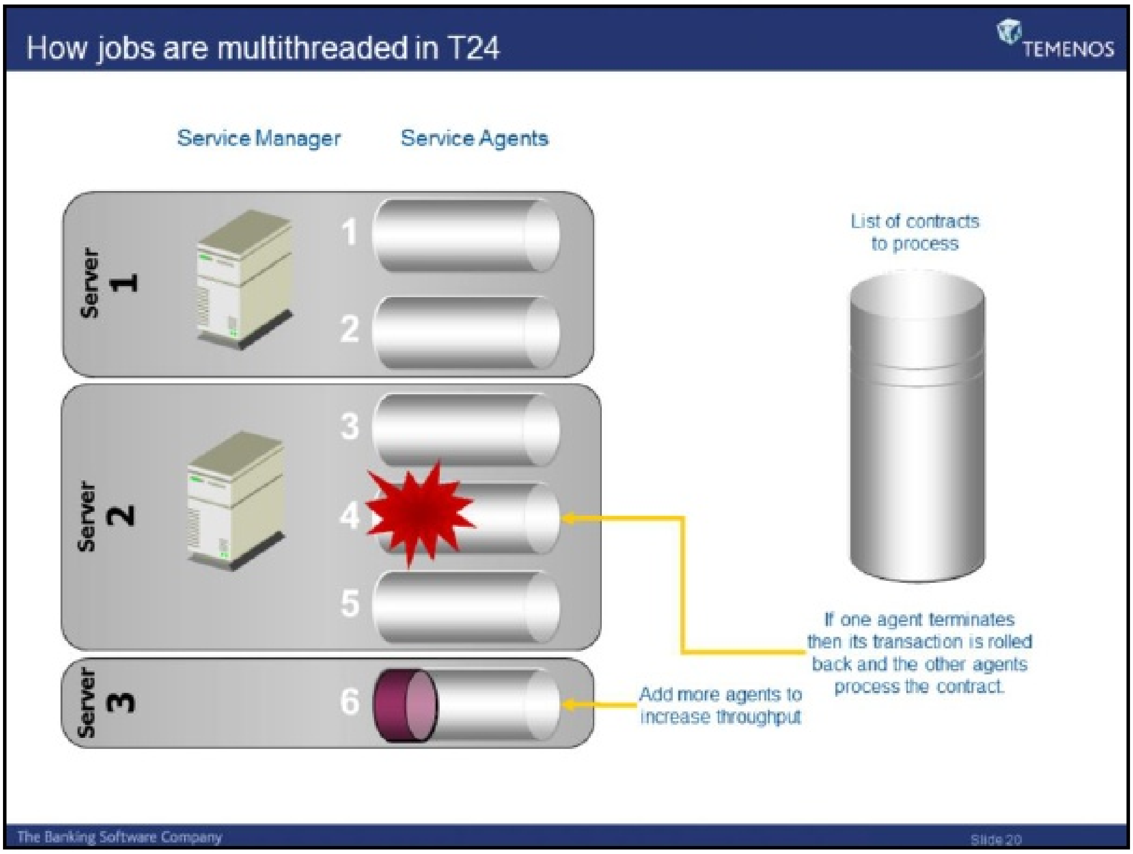
Assume a scenario where in you know that the server will be busy at 11PM as that is when transactions from an interface will be coming in. You may choose to reduce the number of agents running COB during that period so that the server be used for the interface as well. Define this in the TSA.WORKLOAD.PROFILE application.

TSA.WORKLOAD.PROFILE is the application which defines the number of tSAs required. The ID of a record in this application can be any alphanumeric text.

The number of agents in TSA.WORKLOAD.PROFILE can be set based on time if required.

TIME and AGENTS.REQUIRED : These fields are associated multi value set which holds the specific time and the number of agents required at that point in time.

The number of agents that can run on server is directly proportional to the number of processors available. Just because T24 supports multi threaded services doesn’t mean you can start a 100 tSA’s in the background. It will kill the server. The thumb rule to be followed is a maximum or 2 tSA’s per processor available.



How jobs are multithreaded in T24

List of contracts to process

If one agent terminates then its transaction is rolled back and the other agents process the contract.

Add more agents to increase throughput

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Slide 20

In T24 multithreaded routines are executed by service agents.

This illustration will help you to understand how multiple agents help perform a job and how failure of a single agent does not stop COB

Each server can have only 1 tSM. tSM, when started will launch the required number of agents for that server

Note that this tSM and the agents have been launched in Server 1. On Server 2, another tSM has been launched, which internally launches the required number of agents on that server

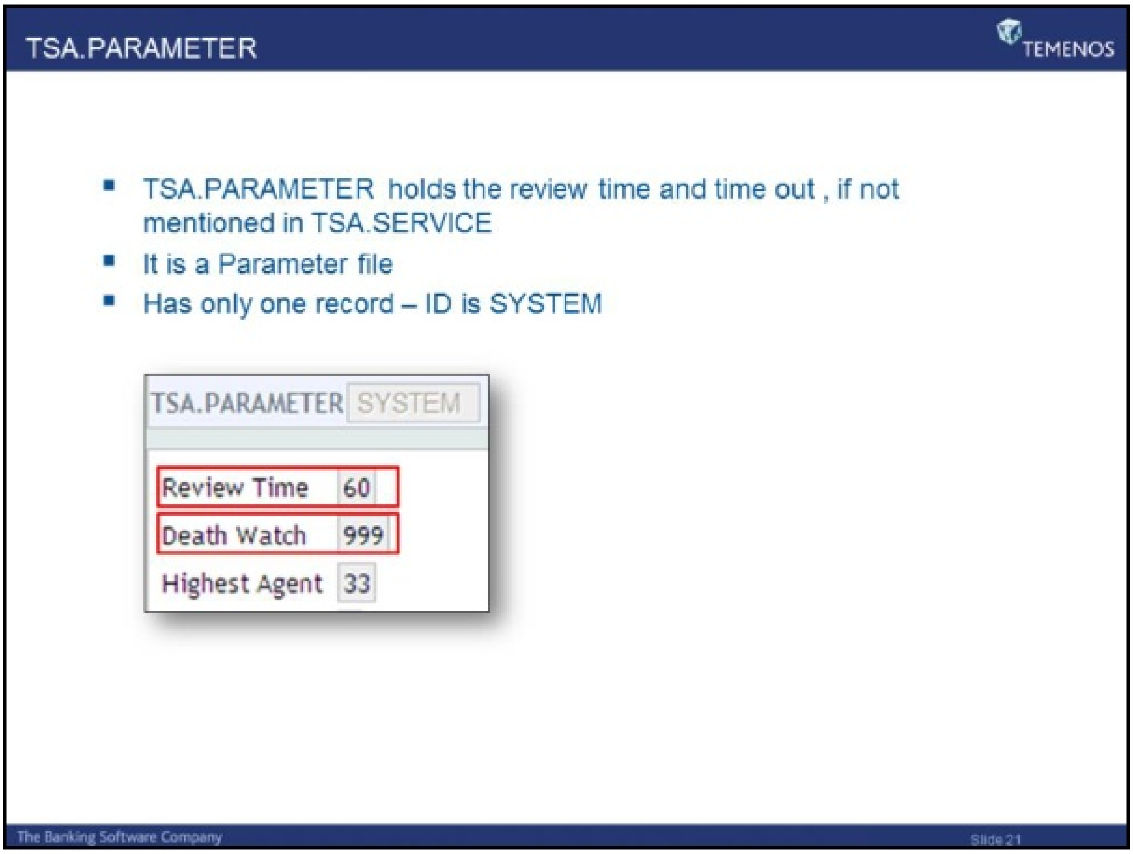
Let us assume that all agents are helping in executing a particular job. Assume that one of the tSAs on Server 1 is the one which has executed the .SELECT routine has hence has populated the contents of the LIST file

As you can see, all agents pick up IDs to be processed from the same LIST file thus enabling to achieve multithreading

If you wish, you could add in one more server(s), start agents on that server and this agent can also participate and process IDs from the LIST file

Even if one of the agents crash, since all other agents are active, they will continue to pick up data from the LIST file.

This process will continue until the LIST file becomes empty.



TSA.PARAMETER

TEMENOS

- TSA.PARAMETER holds the review time and time out , if not mentioned in TSA.SERVICE
- It is a Parameter file
- Has only one record – ID is SYSTEM

TSA.PARAMETER SYSTEM

Review Time	60
Death Watch	999
Highest Agent	33

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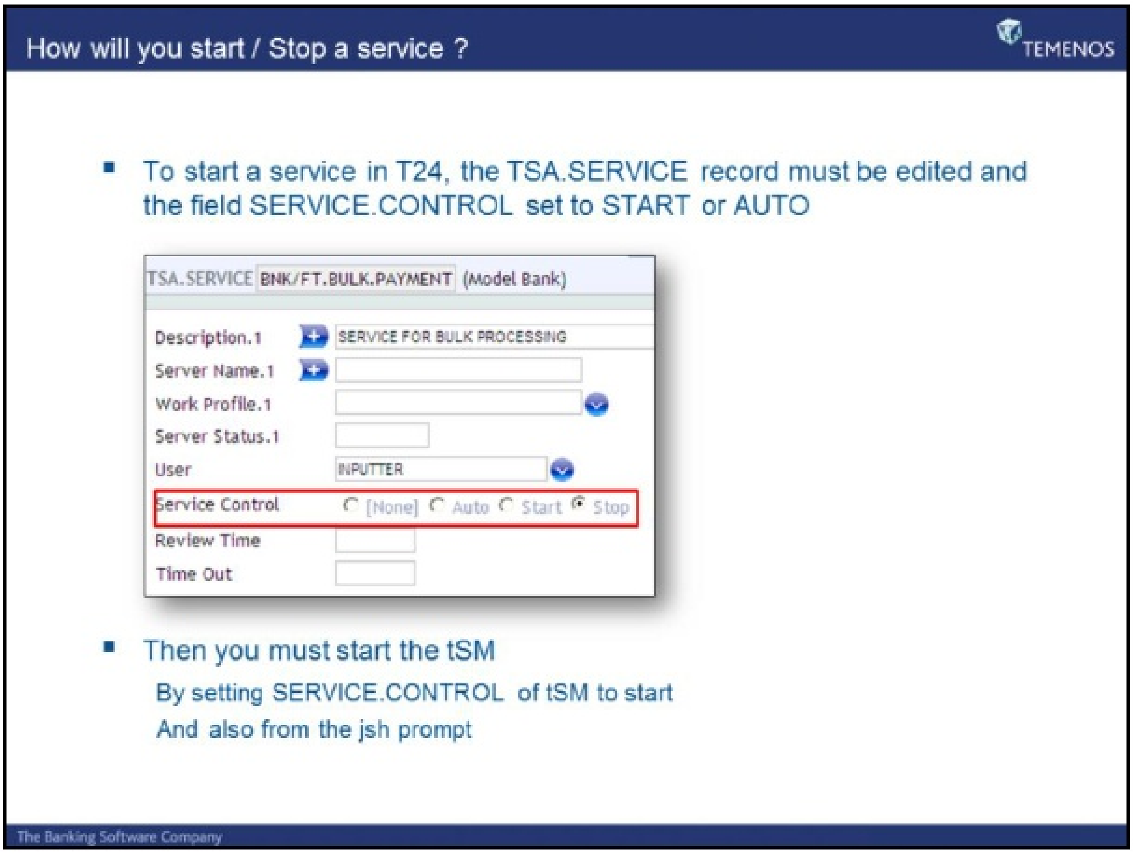
Parameter file

Has only one record – ID is SYSTEM

Review Time Is used if the REVIEW.TIME field in the TSA.SERVICE record in not specified. Default value is 60.

Death Watch Is used if the TIME.OUT field in the TSA.SERVICE record is not specified. Default value is 300.

Highest Agent No input field. Updated by T24 with the number of agents running on all T24 application servers put together



How will you start / Stop a service ?

- To start a service in T24, the TSA.SERVICE record must be edited and the field SERVICE.CONTROL set to START or AUTO

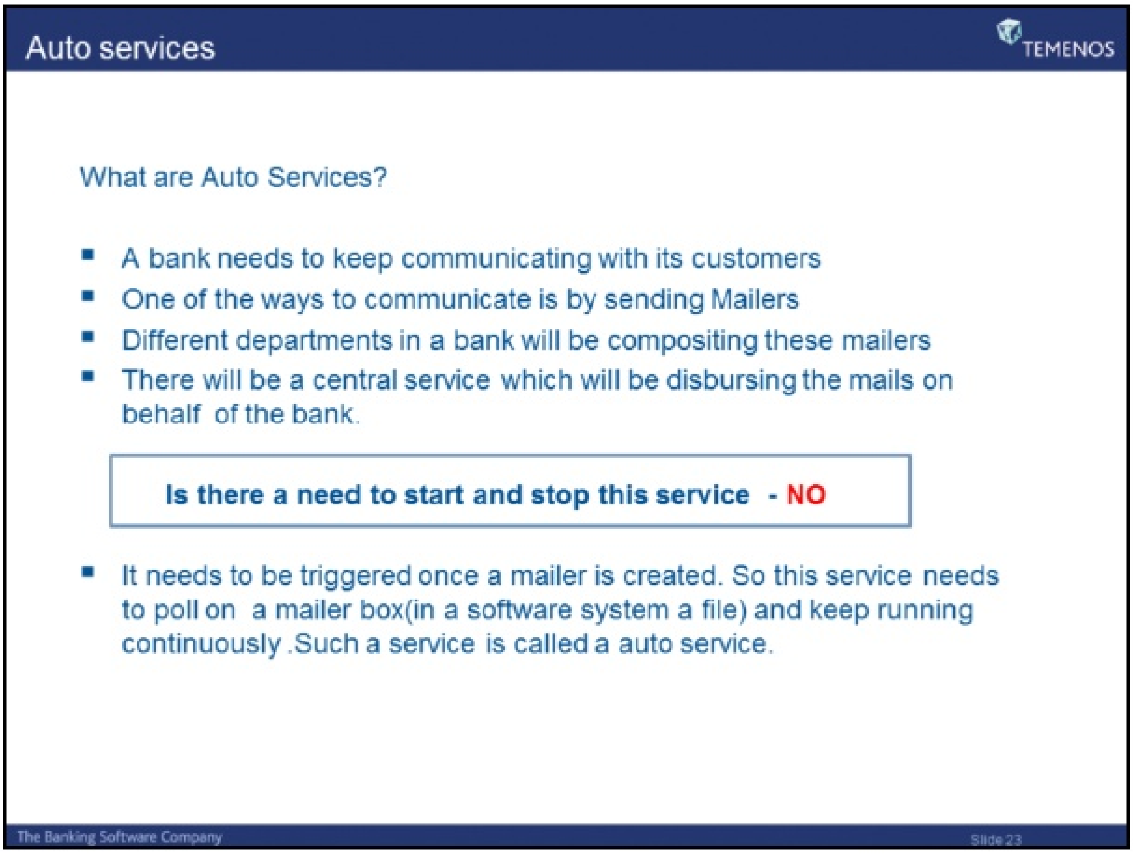
TSA.SERVICE BNK/FT.BULK.PAYMENT (Model Bank)

Description.1	SERVICE FOR BULK PROCESSING
Server Name.1	
Work Profile.1	
Server Status.1	
User	INPUTTER
Service Control	○ [None] ○ Auto ○ Start ● Stop
Review Time	
Time Out	

- Then you must start the tSM
  - By setting SERVICE.CONTROL of tSM to start
  - And also from the jsh prompt

You must first turn the service on using the SERVICE.CONTROL field in TSA.SERVICE. This change must be authorised. You must remember that this action does not start off the service in the background. Its only a flag to say that the service will be picked up and executed.

You must then start the tSM program. This can be done only from the jBASE prompt. This will cause all service records with either START or AUTO to be picked up to be started.



Auto services

TEMENOS

What are Auto Services?

- A bank needs to keep communicating with its customers
- One of the ways to communicate is by sending Mailers
- Different departments in a bank will be compositing these mailers
- There will be a central service which will be disbursing the mails on behalf of the bank.

Is there a need to start and stop this service - NO

- It needs to be triggered once a mailer is created. So this service needs to poll on a mailer box(in a software system a file) and keep running continuously .Such a service is called a auto service.

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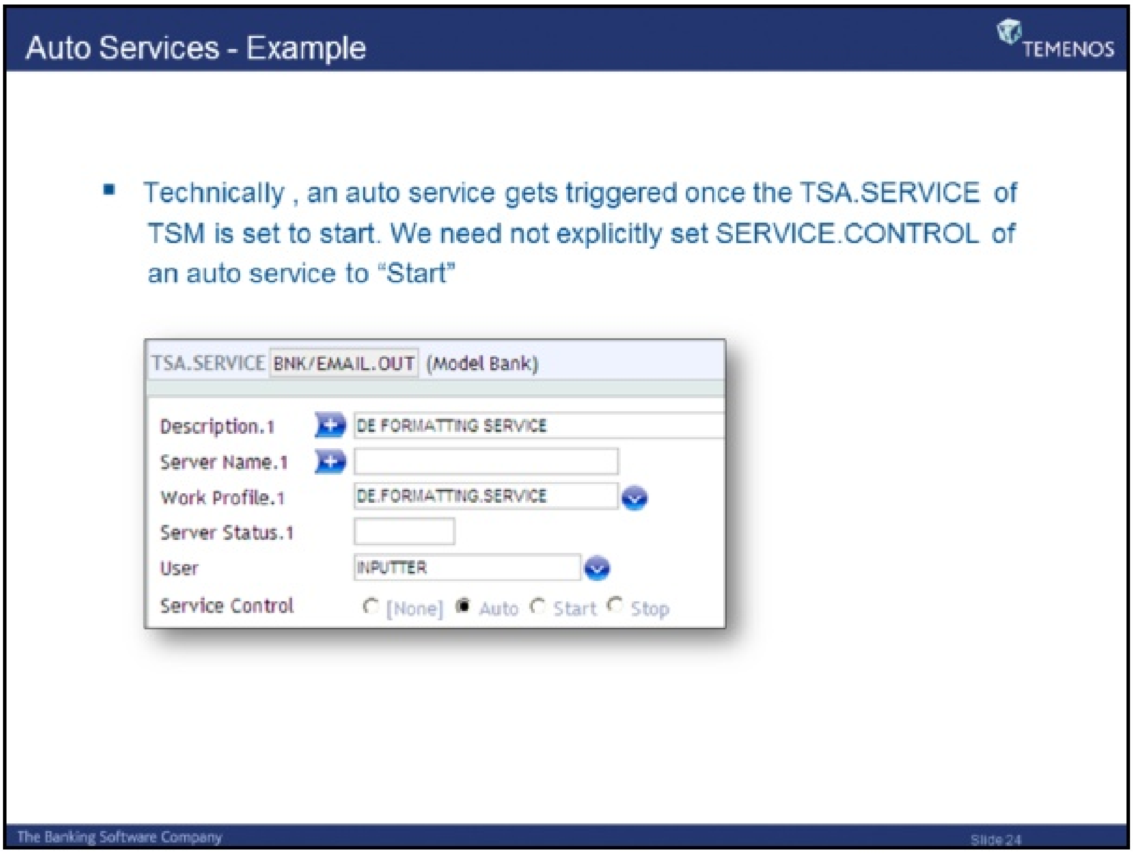
Slide 23



Auto Services - Example

TEMENOS

- Technically , an auto service gets triggered once the TSA.SERVICE of TSM is set to start. We need not explicitly set SERVICE.CONTROL of an auto service to "Start"

TSA.SERVICE BNK/EMAIL.OUT (Model Bank)

Description.1	DE FORMATTING SERVICE
Server Name.1	
Work Profile.1	DE.FORMATTING.SERVICE
Server Status.1	
User	INPUTTER
Service Control	○ [None] ● Auto ○ Start ○ Stop

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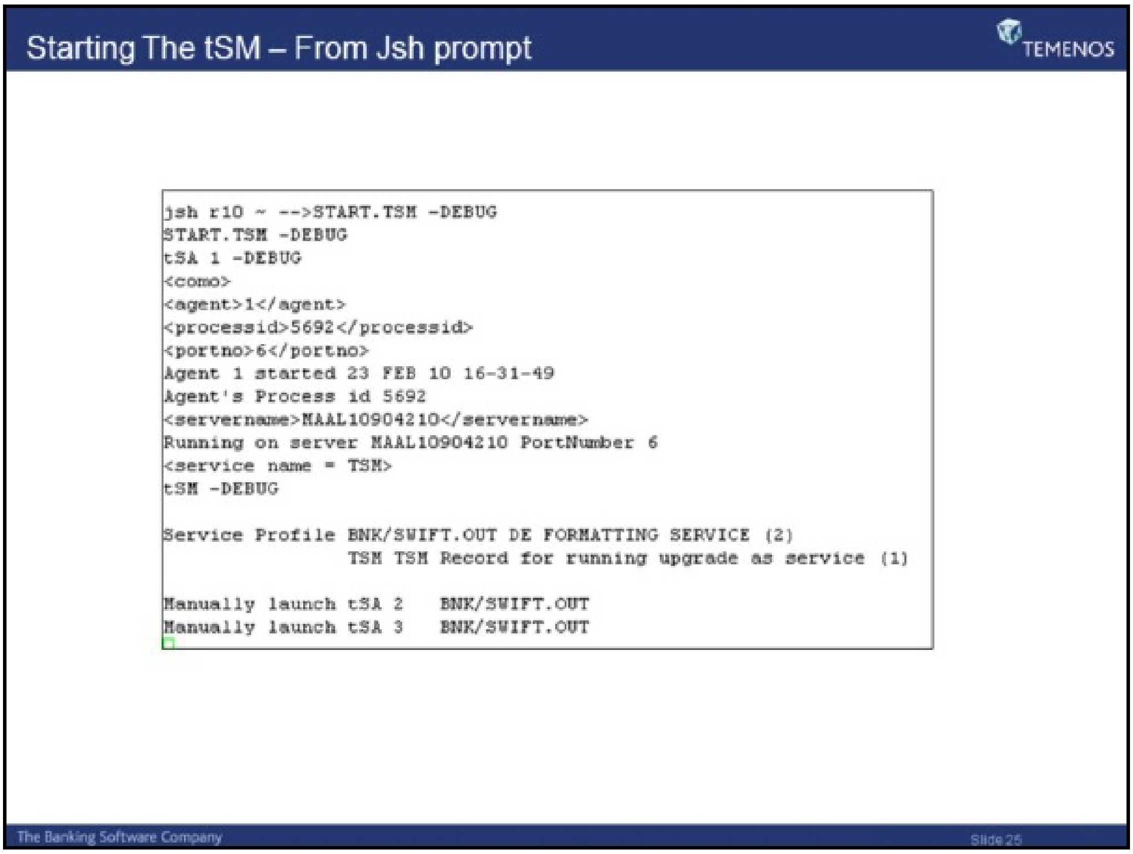
Slide 24



Starting The tSM – From Jsh prompt

TEMENOS

```
jsh r10 ~ -->START.TSM -DEBUG
START.TSM -DEBUG
tSA 1 -DEBUG
<como>
<agent>1</agent>
<processid>5692</processid>
<portno>6</portno>
Agent 1 started 23 FEB 10 16-31-49
Agent's Process id 5692
<servername>MAAL10904210</servername>
Running on server MAAL10904210 PortNumber 6
<service name = TSM>
tSM -DEBUG

Service Profile BNK/SWIFT.OUT DE FORMATTING SERVICE (2)
                TSM TSM Record for running upgrade as service (1)

Manually launch tSA 2   BNK/SWIFT.OUT
Manually launch tSA 3   BNK/SWIFT.OUT
```

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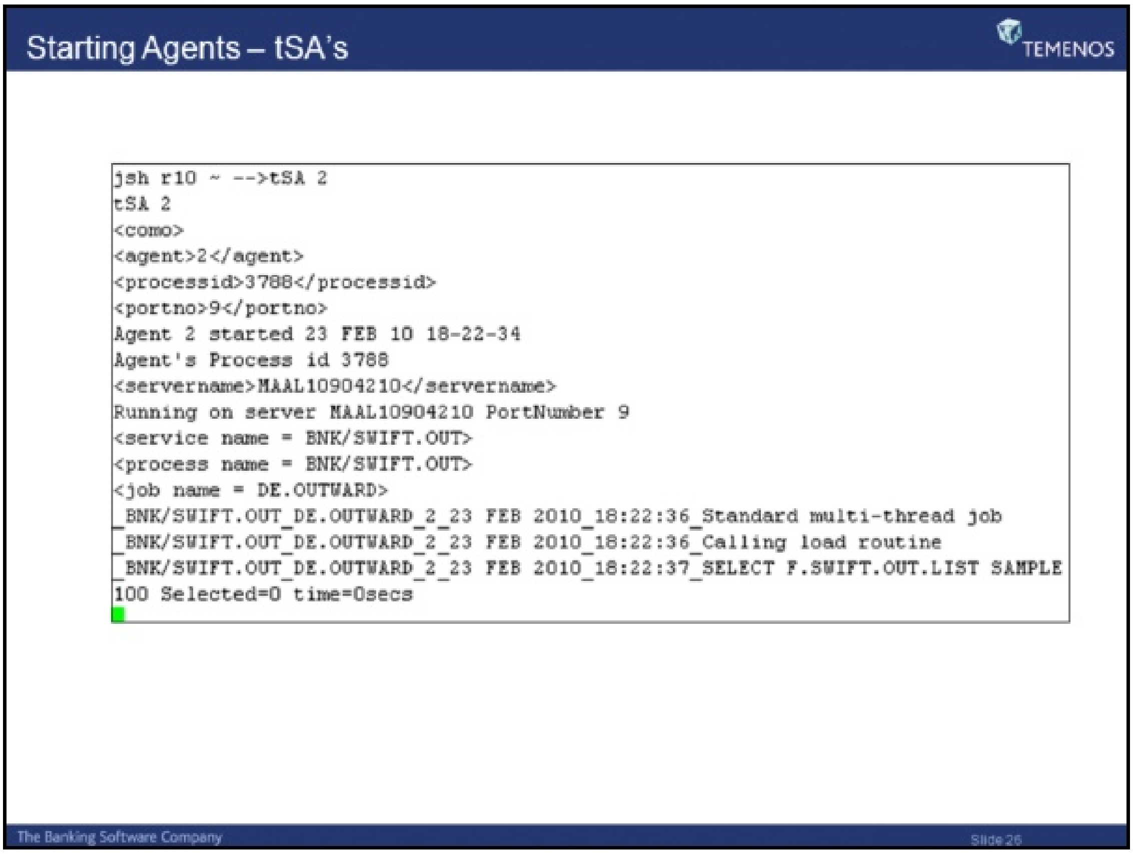
Start the tSM by using START.TSM at the jBASE shell prompt. You have two options when starting the tSM – to start it in DEBUG mode or to leave out the DEBUG option.

The DEBUG option allows you to manually start tSA’s to execute your service. In the screen shot above, OFS.MESSAGE.SERVICE has one tSA assigned to it, but SWIFT.OUT has two. How is this possible?

When defining a service in TSA.SERVICE, the field WORK.PROFILE links to an application TSA.WORKLOAD.PROFILE where you can define how many tSA’s are required. Each tSA represents one copy of your multi threaded service being executed.

Now in the screen shot above, you must understand that the services have not been started as yet.



Starting Agents – tSA's

```
jsh r10 ~ -->tSA 2
tSA 2
<como>
<agent>2</agent>
<processid>3788</processid>
<portno>9</portno>
Agent 2 started 23 FEB 10 18-22-34
Agent's Process id 3788
<servername>MAAL10904210</servername>
Running on server MAAL10904210 PortNumber 9
<service name = BNK/SWIFT.OUT>
<process name = BNK/SWIFT.OUT>
<job name = DE.OUTWARD>
_BNK/SWIFT.OUT_DE.OUTWARD_2_23 FEB 2010_18:22:36_Standard multi-thread job
_BNK/SWIFT.OUT_DE.OUTWARD_2_23 FEB 2010_18:22:36_Calling load routine
_BNK/SWIFT.OUT_DE.OUTWARD_2_23 FEB 2010_18:22:37_SELECT F.SWIFT.OUT.LIST SAMPLE
100 Selected=0 time=0secs
```

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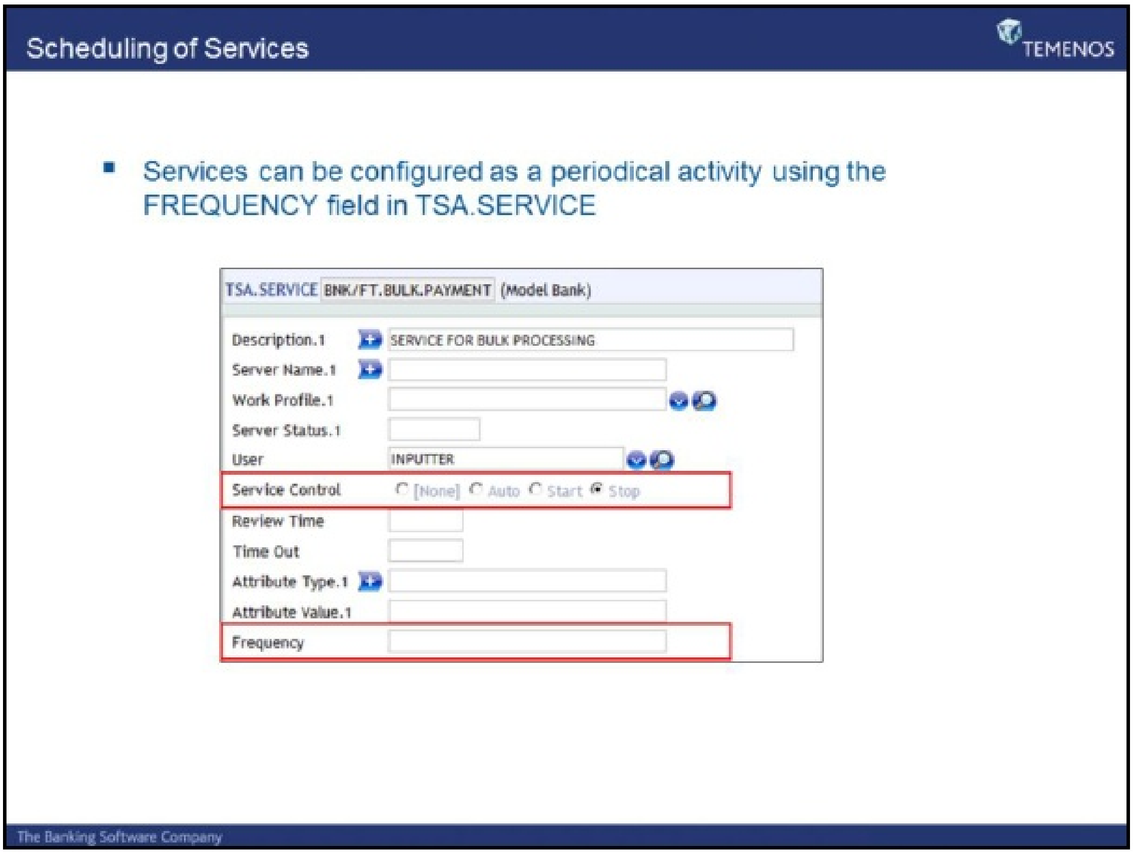
After the agents are assigned jobs, in DEBUG mode, type tSA <agent number> at the jBASE shell prompt to actually start the agents to the service. After the job is finished successfully, a message 'Agent Stopped' will be displayed and the cursor will go back to jBASE shell prompt.

When a service stops, the field SERVICE.CONTROL is set to STOP automatically.



Scheduling of Services

- Services can be configured as a periodical activity using the FREQUENCY field in TSA.SERVICE

TSA.SERVICE BNK/FT.BULK.PAYMENT (Model Bank)

Description.1	SERVICE FOR BULK PROCESSING
Server Name.1	
Work Profile.1	
Server Status.1	
User	INPUTTER
Service Control	○ [None] ○ Auto ○ Start ● Stop
Review Time	
Time Out	
Attribute Type.1	
Attribute Value.1	
Frequency	

Services can be configured as a periodic activity using the FREQUENCY field. This field holds a value in the format

Date Time Frequency- where,

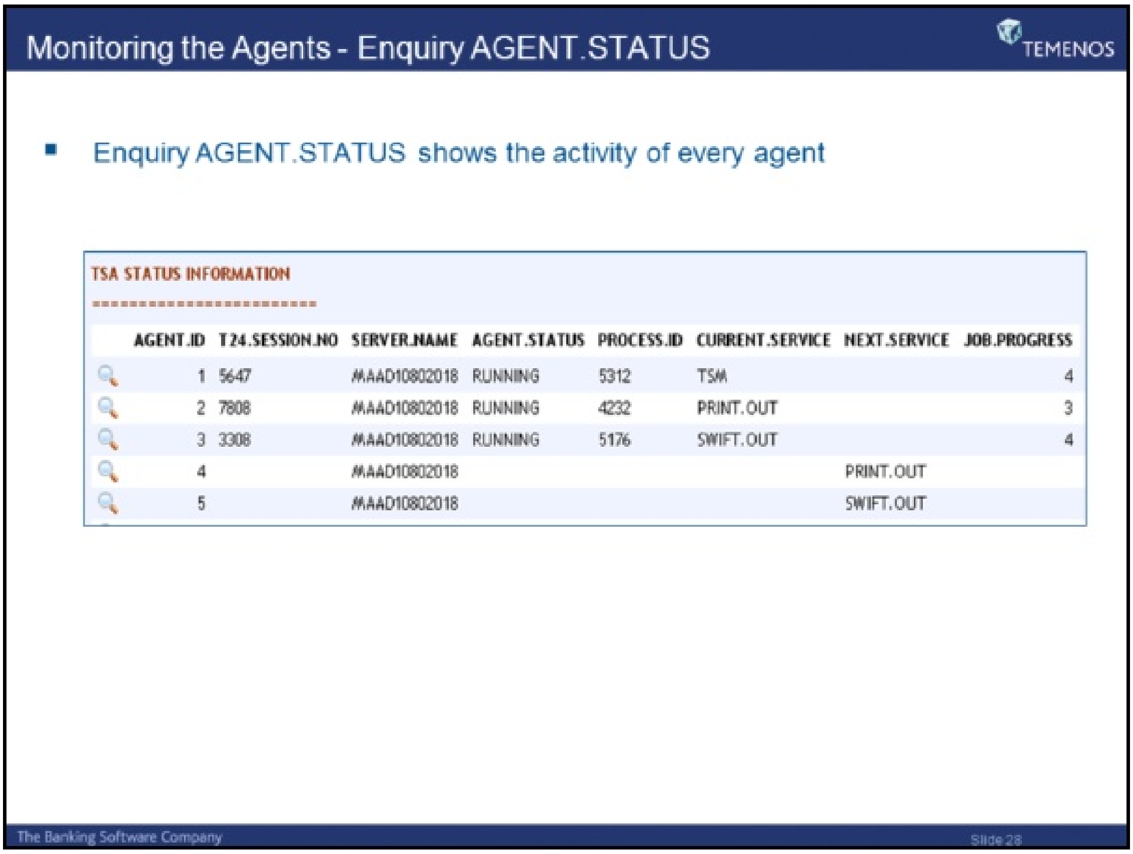
Date is the system date which is entered in T24 date format

Time is entered in the format HH:MM(T24 hour format)

Frequency is entered in the format 1D,2D etc.,

EXAMPLE : 20100215 14:00 1D

TSM would normally build the service profile only for the services which are set to START or AUTO. But when the frequency is specified for the service and SERVICE.CONTROL is set as 'STOP', the TSM would check whether the specified frequency has been reached taking into account the time as well as frequency and would start the service. When the service is stopped, the frequency would be cycled to the next date. This field is not allowed for an AUTO service. The service control cannot be changed if the frequency is present. This is mostly using for archiving.



Monitoring the Agents - Enquiry AGENT.STATUS

- Enquiry AGENT.STATUS shows the activity of every agent

TSA STATUS INFORMATION
========================

	AGENT.ID	T24.SESSION.NO	SERVER.NAME	AGENT.STATUS	PROCESS.ID	CURRENT.SERVICE	NEXT.SERVICE	JOB.PROGRESS
🔍	1	5647	MAAD10802018	RUNNING	5312	TSM		4
🔍	2	7808	MAAD10802018	RUNNING	4232	PRINT.OUT		3
🔍	3	3308	MAAD10802018	RUNNING	5176	SWIFT.OUT		4
🔍	4		MAAD10802018				PRINT.OUT	
🔍	5		MAAD10802018				SWIFT.OUT	

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You know tSM launches and controls the tSAs. How does an end user know what is happening with the tSAs? Use the enquiry AGENT.STATUS

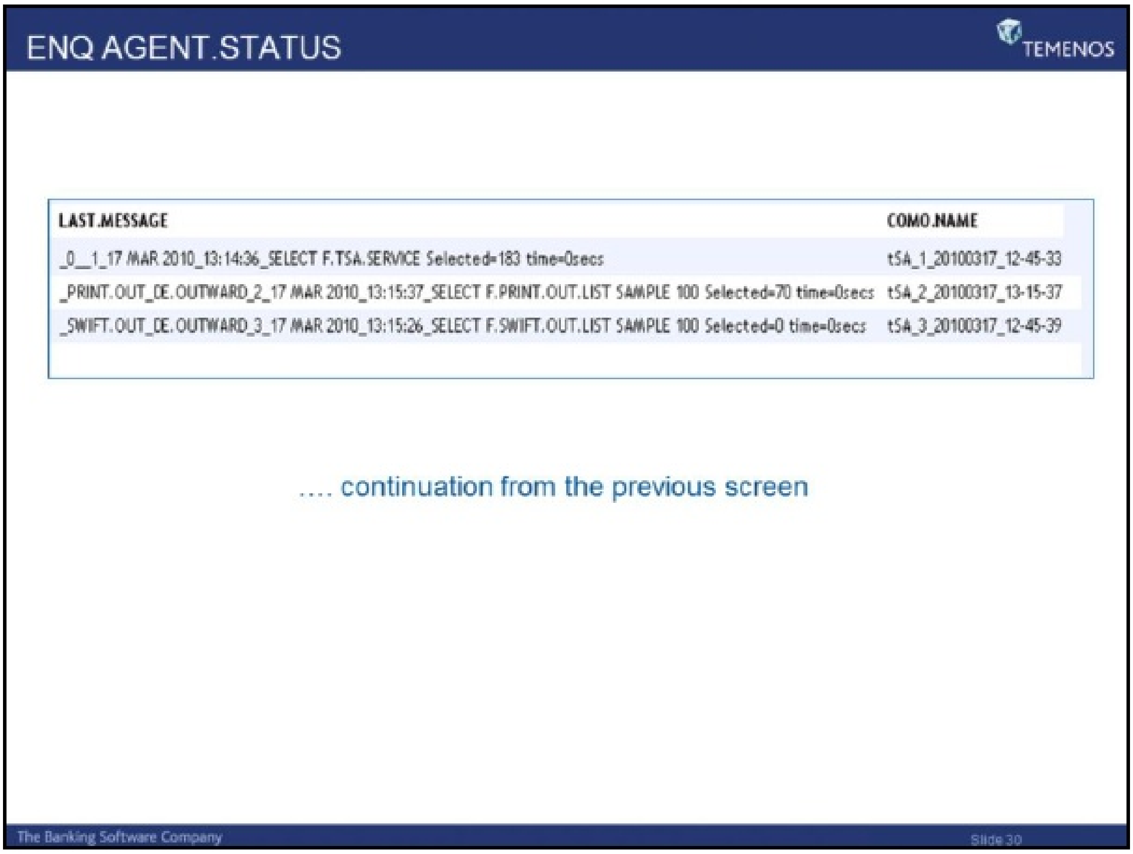
Agent ID is the allocated Agent Number for the service

T24.SESSION.NO is updated with a unique number that identifies every session in T24. A number between 1 -99999 is allocated when a session is started in a port to uniquely identify that particular session in T24(both for online and COB).

Note: This random number is generated using a routine called EB.ALLOCATE.SESSION.NUMBER and is stored in a common variable called C$T24.SESSION.NO. This helps in improving the monitoring capabilities of T24.

A live file called **T24.SESSION** gets updated with record key being the T24.SESSION.NO and contains information regarding the agent to which this session number was assigned. A record in this application gets deleted, when the corresponding process terminates(session expires).

Server Name is the name of the server where the agent is running. Note that details of tSAs and tSMs across application servers will be updated here



ENQ AGENT.STATUS

TEMENOS

LAST.MESSAGE	COMO.NAME
_0__1_17 MAR 2010_13:14:36_SELECT F.TSA.SERVICE Selected=183 time=0secs	tSA_1_20100317_12-45-33
_PRINT.OUT_DE.OUTWARD_2_17 MAR 2010_13:15:37_SELECT F.PRINT.OUT.LIST SAMPLE 100 Selected=70 time=0secs	tSA_2_20100317_13-15-37
_SWIFT.OUT_DE.OUTWARD_3_17 MAR 2010_13:15:26_SELECT F.SWIFT.OUT.LIST SAMPLE 100 Selected=0 time=0secs	tSA_3_20100317_12-45-39

.... continuation from the previous screen

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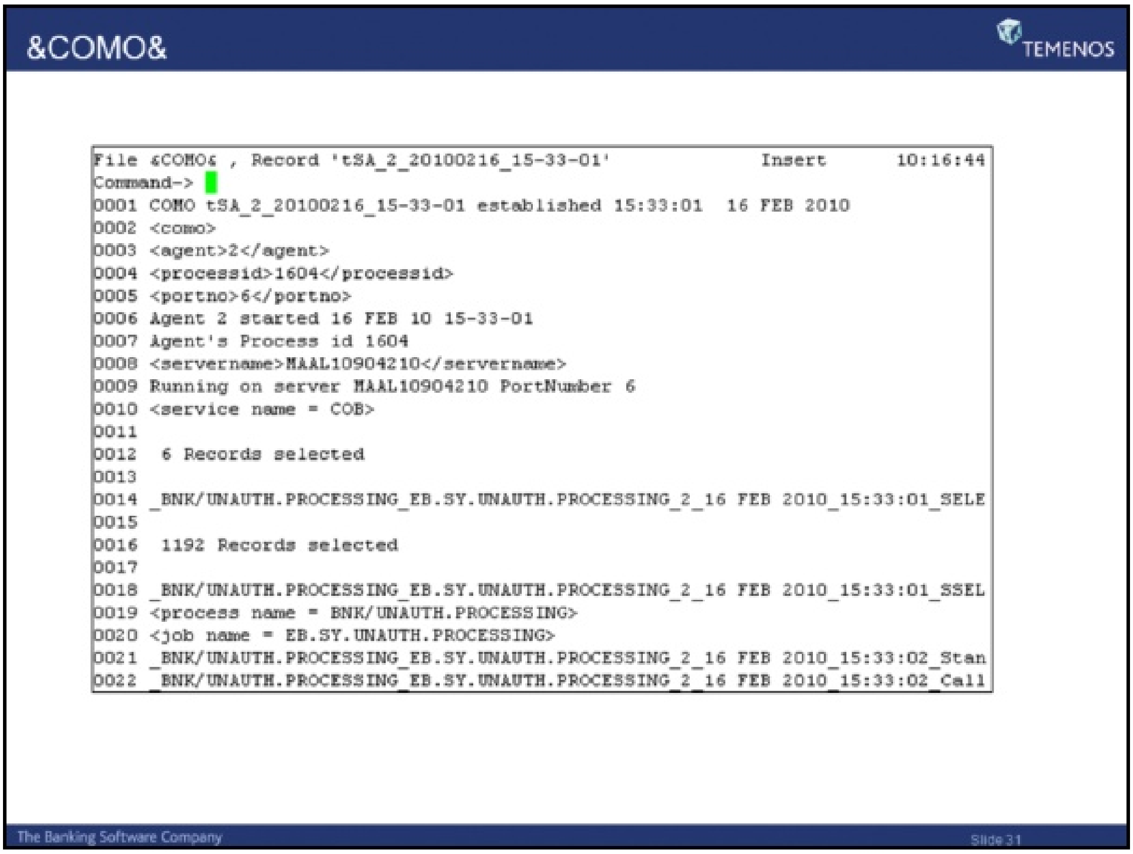
Last Message is the message displayed by the agents as they are performing the jobs. The agent running tSM will not display any message as it is just monitoring agents.

Como Name is the name of the log record ID that holds the log information of the agent. These log records are stored in a directory called &COMO&. The contents of these records cannot be viewed from browser. You will have to open these records at the jBASE prompt. The log file name is in the format 'tSA_<agent number>_<date>_<time>'

LAST.MESSAGE is the message displayed by the agents as they are performing the jobs.

COMO.NAME holds the name of the log file that has the log information of the particular agent.

JOB.PROGRESS holds the status of the jobs being performed.



&COMO&

```
File &COMO& , Record 'tSA_2_20100216_15-33-01'           Insert      10:16:44
Command->
0001 COMO tSA_2_20100216_15-33-01 established 15:33:01  16 FEB 2010
0002 <como>
0003 <agent>2</agent>
0004 <processid>1604</processid>
0005 <portno>6</portno>
0006 Agent 2 started 16 FEB 10 15-33-01
0007 Agent's Process id 1604
0008 <servername>MAAL10904210</servername>
0009 Running on server MAAL10904210 PortNumber 6
0010 <service name = COB>
0011
0012  6 Records selected
0013
0014 _BNK/UNAUTH.PROCESSING_EB.SY.UNAUTH.PROCESSING_2_16 FEB 2010_15:33:01_SELE
0015
0016  1192 Records selected
0017
0018 _BNK/UNAUTH.PROCESSING_EB.SY.UNAUTH.PROCESSING_2_16 FEB 2010_15:33:01_SSEL
0019 <process name = BNK/UNAUTH.PROCESSING>
0020 <job name = EB.SY.UNAUTH.PROCESSING>
0021 _BNK/UNAUTH.PROCESSING_EB.SY.UNAUTH.PROCESSING_2_16 FEB 2010_15:33:02_Stan
0022 _BNK/UNAUTH.PROCESSING_EB.SY.UNAUTH.PROCESSING_2_16 FEB 2010_15:33:02_Call
```

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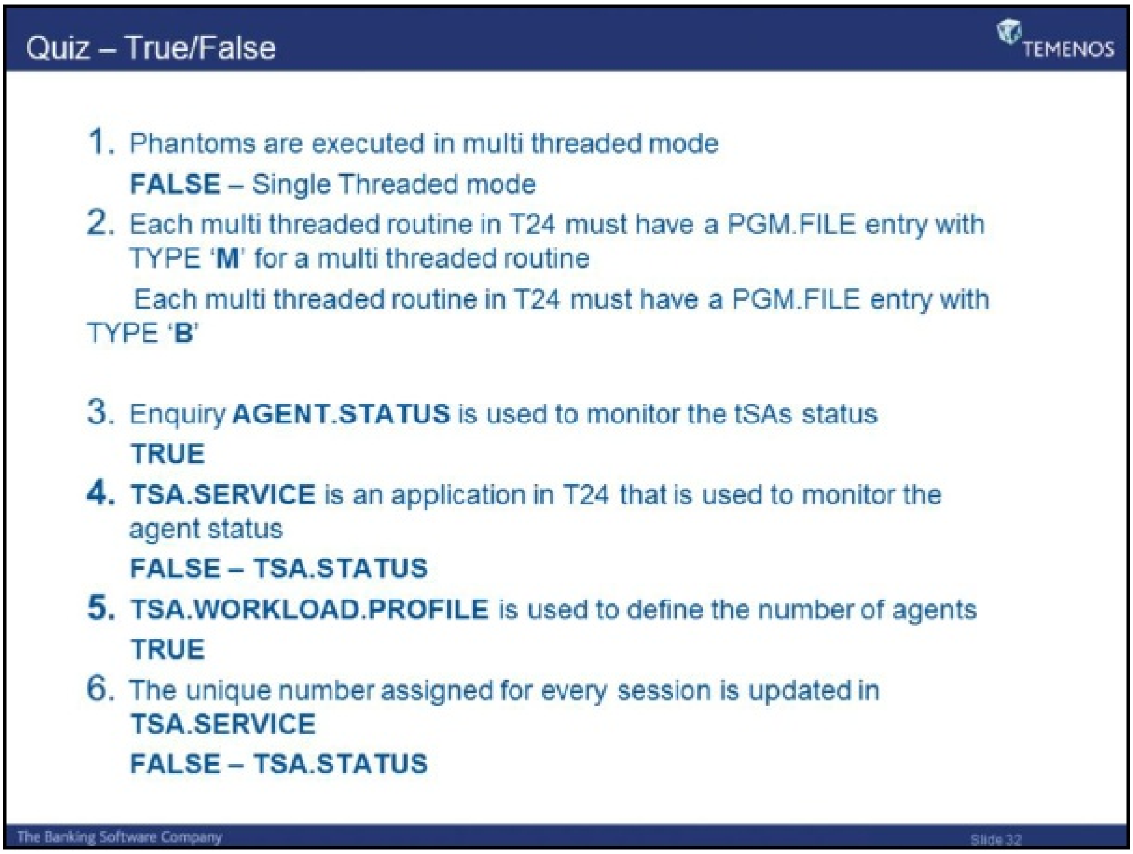
COMO.NAME in **AGENT.STATUS** holds the name of the log file. Log files are stored under a directory &COMO&. To view the log files use the command 'LIST &COMO&'. Use the command 'JED &COMO& <Log file name>' to view the contents of the log file.

If an agent is restarted, there will be two log files for that agent as the log file ID is based on date and time. Log files do not get cleared automatically from the &COMO&.



Quiz – True/False

TEMENOS

1. Phantoms are executed in multi threaded mode

   FALSE – Single Threaded mode
2. Each multi threaded routine in T24 must have a PGM.FILE entry with TYPE ‘**M**’ for a multi threaded routine

   Each multi threaded routine in T24 must have a PGM.FILE entry with TYPE ‘**B**’
3. Enquiry **AGENT.STATUS** is used to monitor the tSAs status

   TRUE
4. **TSA.SERVICE** is an application in T24 that is used to monitor the agent status

   FALSE – TSA.STATUS
5. **TSA.WORKLOAD.PROFILE** is used to define the number of agents

   TRUE
6. The unique number assigned for every session is updated in **TSA.SERVICE**

   FALSE – TSA.STATUS

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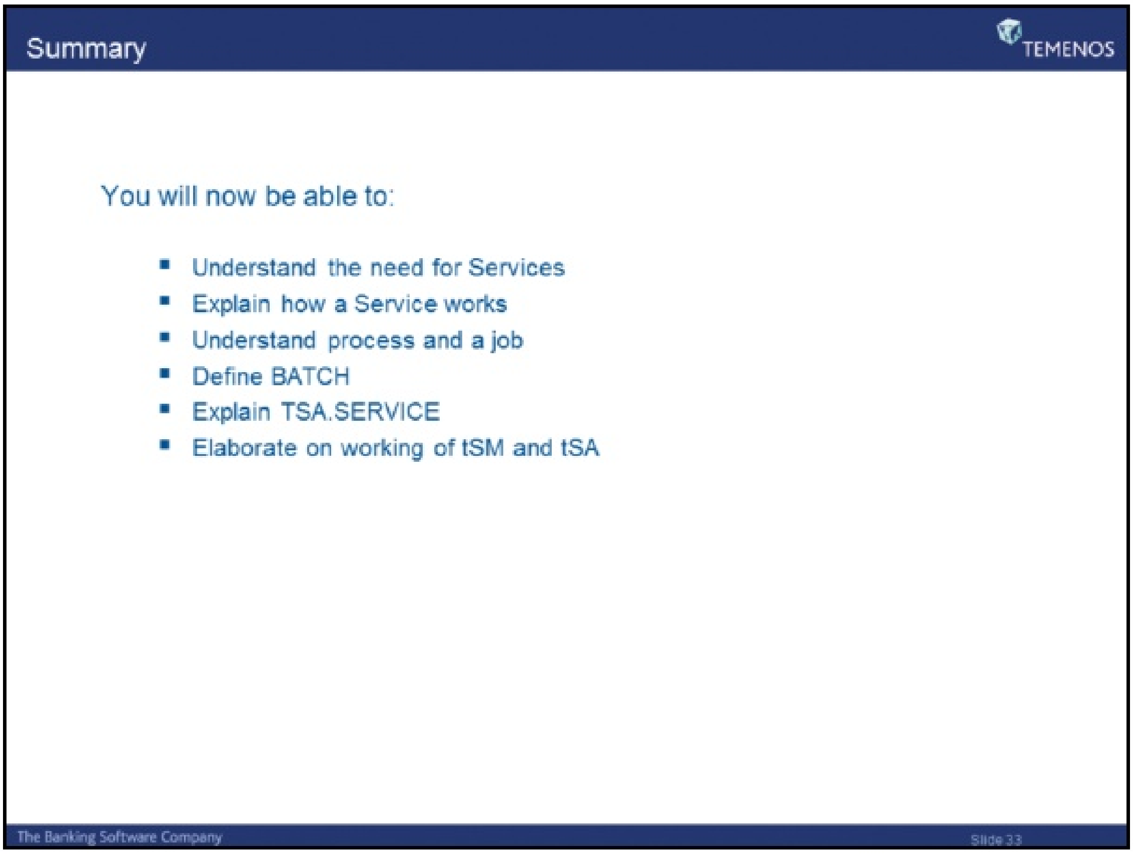
1. FALSE – Single Threaded mode
2. FALSE – Each multi threaded routine in T24 must have a PGM.FILE entry with TYPE ‘B’ for Batch
3. TRUE
4. FALSE – TSA.STATUS
5. TRUE
6. FALSE – TSA.STATUS



Summary

TEMENOS

You will now be able to:

- Understand the need for Services
- Explain how a Service works
- Understand process and a job
- Define BATCH
- Explain TSA.SERVICE
- Elaborate on working of tSM and tSA

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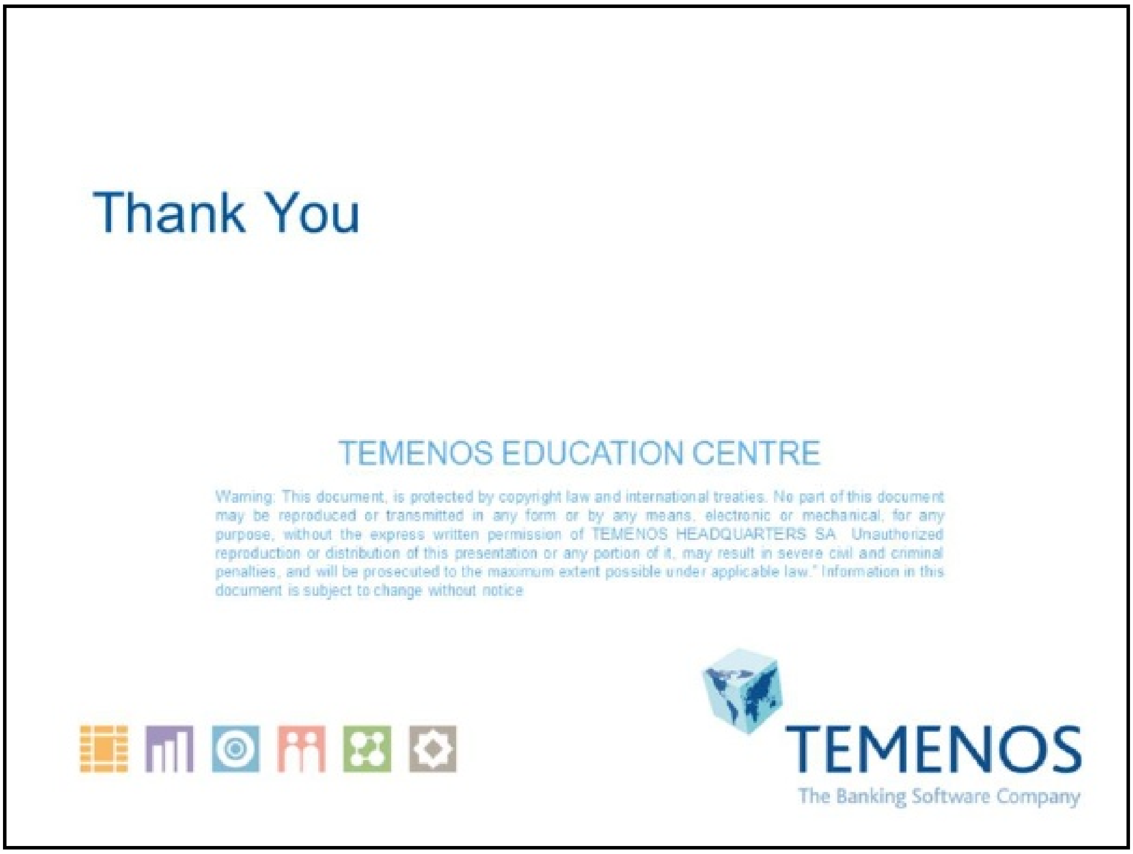

Thank You

TEMENOS EDUCATION CENTRE