Session: 407053

IBM

IBM Advanced Job Scheduler

IBM ⓔserver iSeries 400 and AS/400e

Sue Townsend

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IBM Advanced Job Scheduler for iSeries

A tool to help you automate your operations   IBM ⓔserver iSeries

- Run jobs across your AS/400 and iSeries network
  - Time and date schedules
  - Job, event or object dependencies
  - Business calendars
- Notify operations personnel
  - Normal and/or abnormal job completion
  - Using messages or pagers
- Distribute reports
  - Users and organization units
  - Selection of output
  - Local or remote distribution
- Automate administration
  - Defining on-line run books
  - Application definition and control
  - Scheduler activity logs and job completion information
  - Group processing
- Special features
  - Console monitor for restricted state scheduling
  - Dynamic passing of parameters

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Interfaces

- Traditional 5250 Menus
  - Start with GO JS command
- Graphical Operations Navigator Plug-in
  - Located in Job / Work Management branch of navigation tree
  - Also in Management Central hierarchy
- OS/400 Command Language
  - 25+ Commands
  - User definable parameter
  - Local Data Area support

Interfaces

Traditional 5250 Menus

```
JS                    Job Scheduler for OS/400


Select one of the following:

     1. Work with jobs
     2. Job history information              Work with Jobs
     3. Job reports                                              3/16/00  16:35:20
     4. Job controls Position to . . . . . . _____  Starting characters
     5. System contr
                     Type options, press Enter.
    10. Report distr   1=Add    2=Change    3=Hold    4=Remove     5=Display     6=Release/Reset
                       7=Submit immediately  8=Change command list  9=Change job LDA ...

                          Job         Group      Grp            Schedule  Schedule  Schedule
                      Opt Name        Name       Seq   Status     Date      Time      Code
                      __  _____   _____  ___
                      __  DBBACKUP    *NONE        0   *READY    3/20/00   18:00   *DAILY
                      __  DBRUN1      *NONE        0   *READY    3/20/00   12:00   *DAILY
                      __  DBRUN2      *NONE        0   *READY    3/20/00   13:00   *DAILY
Selection or command  __  FIRSTJOB    JOBLIST      1   *READY    3/30/00   17:00   *DATE
===> _____ __  LASTONE     JOBLIST      3   *READY    *NONE      0:00   *NONE
                      __  MYSAVE      *NONE        0   *READY    3/24/00   18:00   *DAILY
F3=Exit   F4=Prompt   __  PAY01       *NONE        0   *READY    *NONE      0:00   *NONE
                                                                                    More...
                      Parameters for options 2, 5, 7, 11, 12, 18, 19, 20 or command
                      ===> _____
                      F3=Exit      F4=Prompt   F5=Refresh   F11=Job statistics   F12=Cancel
                      F13=Repeat   F15=Sort date    F23=More options     F24=More keys
```

Interfaces

Operations Navigator Tree and Panels

IBM *e* server iSeries

Interfaces

CL Commands

IBM *e* server iSeries

Job commands
  1. Add job using Job Scheduler
  2. Change job using Job Scheduler
  3. Copy job using Job Scheduler
  4. Display job using JS
  5. Hold job using Job Scheduler
  6. Release job using JS
  7. Remove job using Job Scheduler
  8. Rename job using Job Scheduler
  9. Submit job using Job Scheduler
10. Work with jobs using JS

History commands
20. Display history using JS
21. Remove history using JS
22. Work with history using JS

Log commands
30. Display log for Job Scheduler
31. Remove log entries from JS

Other commands
40. Change job authority using JS
41. Change parameter data
42. Change pager command using JS
43. End Job Scheduler
44. Print schedule using JS
45. Submit console command
46. Set dependent job using JS
47. Send reports using JS
48. Start group using JS
49. Start Job Scheduler

Relationship with OS/400 JOBSCDE Commands

IBM *e*server iSeries

- XXXJOBSCDE commands are part of OS/400
- IBM Advanced Job Scheduler is a separately installable product
  - Has more extensive scheduling and automation capabilities
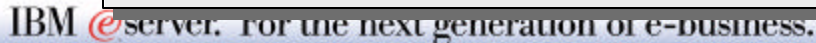 - Can migrate existing JOBSCDE jobs

```
CMDSCDE                Schedule Entry Commands
                              Add Job Schedule Entry (ADDJOBSCDE)
Select one of the fo
                     Type choices, press Enter.
  Commands
     1. Add Job Sche  Job name . . . . . . . . . . . > MYSAVE       Name, *JOBD
     2. Change Activ  Command to run . . . . . . . . > SAVLIB LIB(MYLIB) DEV(TAP01)
     3. Change Expir  Frequency  . . . . . . . . . .   *WEEKLY      *ONCE, *WEEKLY, *MONTHLY
     4. Change Job S  Schedule date, or  . . . . . .   *NONE        Date, *CURRENT, *MONTHSTR...
     5. Change Power  Schedule day . . . . . . . . .   *FRI         *NONE, *ALL, *MON, *TUE...
     6. Hold Job Sch           + for more values
     7. Release Job  Schedule time  . . . . . . . .   1800         Time, *CURRENT
     8. Remove Job S  Save . . . . . . . . . . . . .   *NO          *NO, *YES
     9. Retrieve Pow  Omit date  . . . . . . . . . .   *NONE        Date, *NONE
    10. Work with Jo           + for more values
                     Recovery action  . . . . . . .   *SBMRLS      *SBMRLS, *SBMHLD, *NOSBM
                     Job description  . . . . . . .   *USRPRF      Name, *USRPRF
                      Library  . . . . . . . . . .                 Name, *LIBL, *CURLIB
                     Job queue  . . . . . . . . . .   *JOBD        Name, *JOBD
                      Library  . . . . . . . . . .                 Name, *LIBL, *CURLIB
                     User . . . . . . . . . . . . .   *CURRENT     Name, *JOBD, *CURRENT
                     Message queue  . . . . . . . .   *USRPRF      Name, *USRPRF, *NONE
                      Library  . . . . . . . . . .                 Name, *LIBL, *CURLIB
                     Text 'description' . . . . . .   My weekly backup
```

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The Basics

<div align="center">

What = Jobs

When = Schedules & Dependencies

Where = System

How = Properties

So what = Notification

</div>

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Jobs

What do I schedule?   IBM @server iSeries

- Scheduled Job
  - Any function that can be submitted as an OS/400 job
    - One / multiple CL command
    - Can include defined pre and post command lists
  - Has a unique name
  - Can be passed parameters
  - Supported by commands: create, delete, modify, run, hold, work with, ...
  - Can be run on any AS/400 or iSeries system in the network
  - Default meaning of "Job" in this presentation
- Job Group
  - A series of jobs that run consecutively, each with a sequence number
  - Normal completion is required for each job for sequence to continue
  - First job of a group is scheduled, held, ...

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Creating a New Job

- **Job Name & Description**

- **Type**

- **Commands**

- **Application**

- **Report Info**

Scheduled Job Properties - Distribution

General | Schedule | Batch Information | Notification | Problem Recovery | Communications | Last Run |

Job name: TESTNTWK

Type of job:
- Scheduled
- Non-scheduled
- Alternate

Description: Test remote systems using ping

Commands:
```
ping mainsite msgmode(*QUIET *ESCAPE)
ping distribution msgmode(*QUIET *ESCAPE)
```

[Add]
[Add Based On]
[Remove]
[Properties]
[Move Up]
[Move Down]

Application: SYSADMIN

Report distribution list:

[OK] [Cancel] [Help]

Schedules

What days & times do you want to run that Job?   IBM @server iSeries
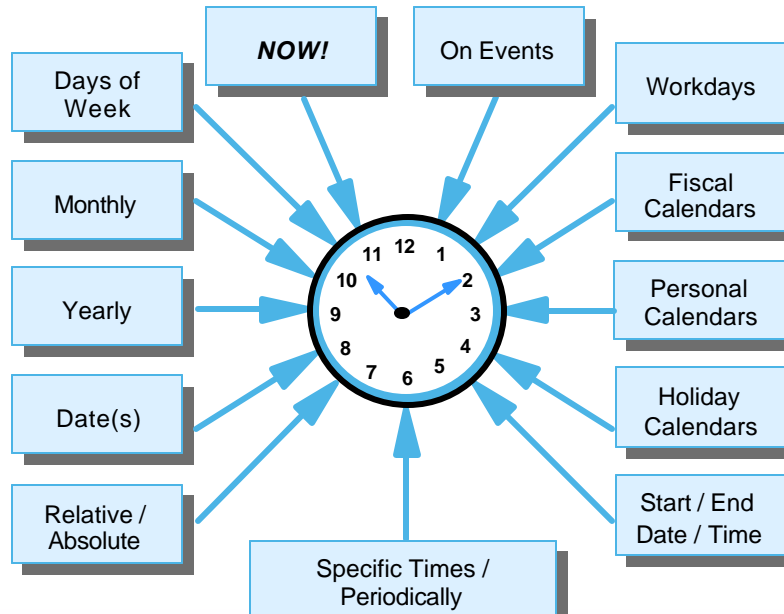
Days of Week

NOW!

On Events

Workdays

Monthly

Fiscal Calendars

Yearly

Personal Calendars

Date(s)

Holiday Calendars

Relative / Absolute

Start / End Date / Time

Specific Times / Periodically

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Time-based Schedules

❑ *Every week*

❑ *Multiple days*

❑ *Periodic time interval*

❑ *Start date*

❑ *Time Range*

New Scheduled Job - Distribution

General | Schedule | Batch Information | Notification | Problem Recovery

April 2000

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	1	2	3	4	5	6

4/15/00 ---

Additional Calendars...

Times to run
○ On specific times:
12:00 PM   Add
              Remove

⦿ Periodically
Frequency: 30   ○ hours
                  ⦿ minutes
Start time: 06:00 PM
End time: 06:00 AM

Dates to run
Frequency:
○ On selected dates
⦿ Weekly
○ Monthly
○ Yearly

□ Select as working days

Details:
□ Sunday
☑ Monday
☑ Tuesday
☑ Wednesday
☑ Thursday
☑ Friday
□ Saturday

OK   Cancel   Help

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Time-based Schedules

❑ *Monthly*

❑ *Last working day*

❑ *Specific time*

Scheduled Job Properties - Distribution

General | Schedule | Batch Information | Notification | Problem Recovery | Last Run

April ▾   2000

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	1	2	3	4	5	6

___ --- ___

Additional Calendars...

Times to run
○ On specific times:
08:00 PM   Add
8:00 PM   Remove

○ Periodically:
Frequency: 1   ○ hours
                     ○ minutes
Start time: 12:00 AM
End time: 11:59 PM

Dates to run
Frequency:
○ On selected dates
○ Weekly
◉ Monthly
○ Yearly

Details:
○ Specified days of each month.
○ Fourth Friday of each month.
○ Last Friday of each month.
◉ Last working day of each month.

☐ Select as working days

OK   Cancel   Help

Event-based Scheduling

Can scheduling depend on more than time?   IBM *e* server iSeries

- Job Groups
  - A sequence of jobs with a single schedule
- Job Dependencies
  - A "directed graph" of predecessors and successors jobs
  - Specify *ANY or *ALL predecessors must be complete
  - Specify if normal completion is required
- Resource Dependencies
  - Existence or other properties of
    - ► System objects
    - ► Configuration status
    - ► Network files
    - ► Subsystems
- Active Dependencies
  - A list of jobs that cannot be active for the selected job to run
- Alternate Jobs
  - Jobs that run due to the abnormal end of a scheduled job
- Operator Action

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Job Groups

How do I run a sequence of Jobs with a single control point?   IBM @server *iSeries*

JOB1

JOB2

JOB3
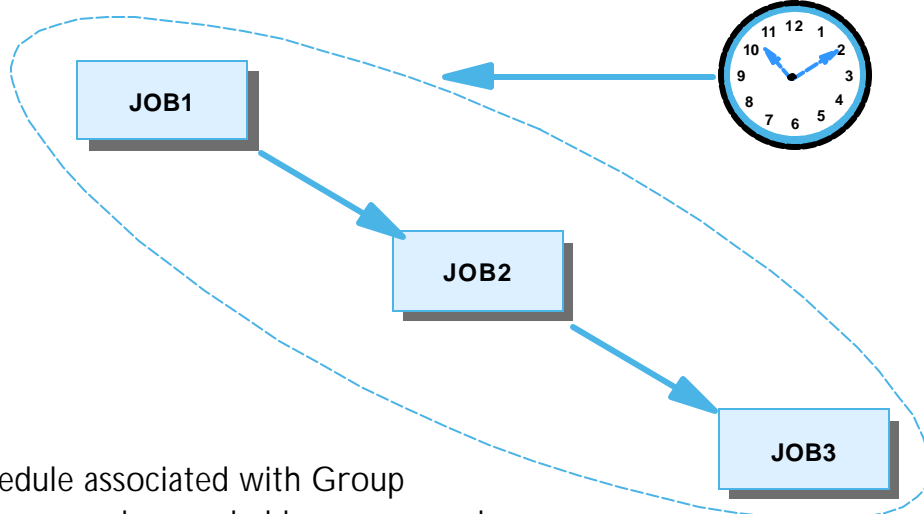
- Schedule associated with Group
- Groups can be run, held, resequenced, ...
- Jobs can run on same or different systems

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Job Groups

IBM @server *iSeries*

AS/400 Operations Navigator

File   Edit   View   Options   Help

4 minutes old

Environment: Production systems   Distribution: Joblist

- Management Central (Backupsite)
- Production systems
  - Backupsite
  - Distribution
    - Basic Operations
    - Job Management
      - Jobs
      - Server Jobs
      - Advanced Job Scheduler
        - Scheduled Jobs
        - Job Groups
          - Joblist
        - Scheduled Job Activity
    - File Systems
  - Mainsite

Sequence	Name	Status	Description
1	FIRSTJOB	Ready to run	First Job in Group
2	SECONDJOB	Ready to run	
3	LASTONE	Ready to run	Third and last job in group

1 - 3 of 3 object(s)

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Group Job Properties

❑ *Group name*

❑ *Sequence*

❑ *Everything else but a schedule*

Scheduled Job Properties - Distribution ? ✕

General | Batch Information | Notification | Problem Recovery | Last Run |

Job name: LASTONE

Group name: JOBLIST

     Sequence in group: 03

Description: Third and last job in group

Commands:

call pgm3

Add
Add Based On
Remove
Properties
Move Up
Move Down

Application:

Report distribution list:

OK   Cancel   Help

JobGroup Properties

❑ *Group name and descripton*

❑ *Schedule*

Job Group Properties - Distribution ? ✕

General | Schedule |

Group name: JOBLIST

Description: Sample Job Group

Type of group:
⊙ Scheduled
○ Non-scheduled

OK   Cancel   Help

Job Dependencies

IBM @server iSeries

- Payroll Processing Example
  - TMCD0n - Time Card Data Gathering for Dept 0n
  - PAY01 - Time Card Verification for all departments
  - PAY02 - Check / EFT generation and printing
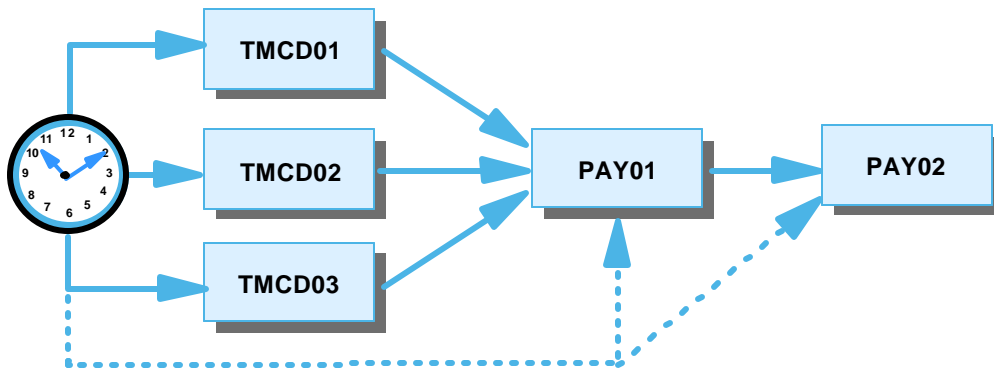
```
         ┌──────────┐
     ┌──►│  TMCD01  │──┐
     │    └──────────┘  │
  ⏰ │   ┌──────────┐   ▼   ┌──────────┐      ┌──────────┐
 clock├──►│  TMCD02  │──►│  PAY01   │─────►│  PAY02   │
     │   └──────────┘   ▲   └──────────┘      └──────────┘
     │   ┌──────────┐   │
     └──►│  TMCD03  │──┘
         └──────────┘
```

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Job Dependencies

```
                    Work with Jobs
                                      3/16/00
16:43:53
 Position t                 Change Job Dependencies
 Type optio
   10=Chang  Job name  . . . . . . . . . . . :   PAY02
 authority    Group name  . . . . . . . . . :     *NONE
   14=Chang    Group se                  Add Dependent Job
            Text  . .
            Condition  Type choices, press Enter.
    Job
 Opt Name   Type optio  Predecessor:
 __  _____   4=Remove    Job name . . . . . . . . . .    PAY02      Name, F4 for list
 __  PAY01    8=Change     Group name . . . . . . . .    *NONE      Name, *NONE
 10  PAY02               Group sequence . . . . . . . ...........................
 __  TMCD01                                   :          Select Job           :
 __  TMCD02  Opt Type  Successor:              :                               :
 __  TMCD03   _  *PRED    Job name . . . . . . . . . :  Type options, press Enter. :
            genera       Group name . . . . . . . . :    1=Select               :
                         Group sequence . . . . . . : Opt  Job       Group    Seq :
 Parameters                                       :  _   LASTONE   JOBLIST    3  :
 ===>  ___   Normal completion required . . :  _   MYSAVE    *NONE        :
 F3=Exit                                      :  1   PAY01     *NONE        :
 F13=Repeat                                   :  _   PAY02     *NONE        :
                                              :  _   SECONDJOB JOBLIST    2  :
            F3=Exit                           :                     More...  :
            F12=Cance                         :                               :
                                              : F12=Cancel                    :
      F6 - Add =>   F3=Exit   F4=Prompt   F12=Cance:...........................:
```

Job Dependencies

```
                        Work with Jobs
                                              3/15/00  16:21:51
Position to . . . . . . _____ Starting characters

Type options,                 Change Job Dependencies
  10=Change
  14=Change    Job name . . . . . . . . . . . . :   TMCD02
                Group name . . . . . . . . . . :     *NONE
      Job       Group sequence . . . . . . . . :      0
Opt Name      Text . . . . . . . . . . . . . :   Time Card Data Gathering for Dept 02
              Conditions to meet . . . . . . . .  *ALL      *ALL, *ANY
___ PAY01
___ PAY02     Type options, press Enter.
___ STSRPT      4=Remove   5=Display   7=Change completion
___ TESTNTWK    8=Change normal completion required
___ TESTNTWK2
___ TMCD01                                        Completion
10  TMCD02    Opt Type      Job       Group   Seq Complete  Required  Description
               _  *PREDJOB  TMCD01    *NONE    0   ****      ****      Time Card Data Gat
Parameters fo  _   *SUCCJOB PAY01     *NONE    0   *NO       *YES      Time Card Verifica
===>           _  *PREDJOB  TMCD02    *NONE    0   ****      ****      Time Card Data Gat
F3=Exit   F    _   *SUCCJOB PAY01     *NONE    0   *NO       *YES      Time Card Verifica
F13=Repeat F   _  *PREDJOB  TMCD03    *NONE    0   ****      ****      Time Card Data Gat
               _   *SUCCJOB PAY01     *NONE    0   *NO       *YES      Time Card Verifica
                                                                                Bottom
              F3=Exit    F5=Refresh    F6=Add    F7=Backward    F8=Forward
              F12=Cancel
```

```
                                             Completion
        Opt Type      Job       Group   Seq Complete  Required  Description
         _  *PREDJOB  PAY01     *NONE    0   ****      ****      Time Card
        Verifica
         _   *SUCCJOB PAY02     *NONE    0   *NO       *YES      Check / EFT
        genera
```

F8 - Fwd =>

```
             *PREDJOB  PAY02     *NONE    0   ****      ****      Check / EFT
        genera
```

Job Dependencies - V5R1

Job Dependencies - V5R1

Edit Job Dependency

Job name: PAY01

Scheduled Jobs:
Job - Group(Sequence)
- DBBACKUP
- DBRUN1
- DBRUN2
- FIRSTJOB - JOBLIST(01)
- LASTONE - JOBLIST(03)
- PAY3ANEW
- PAY3BNEW
- PAY3CNEW
- SECONDJOB - JOBLIST(02)
- STSRPT
- TEST
- TESTNTWK

Add--> / <-- Remove / Properties

Predecessors:
Job - Group(Sequence)	Process	Required
TMCD01		X
TMCD02		X
TMCD03		X

Successors:
Job - Group(Sequence)	Process	Required
PAY02		X

OK   Cancel   Help

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Resource Dependencies

IBM @server iSeries

- Status gathering and redistribution example
  - STATUSn - *NETF STATUSn received
  - STSRTP - Job to receive, collate and distribute composite status
  - Started with a schedule but waits for resources
  - Can specify *ANY or *ALL resources
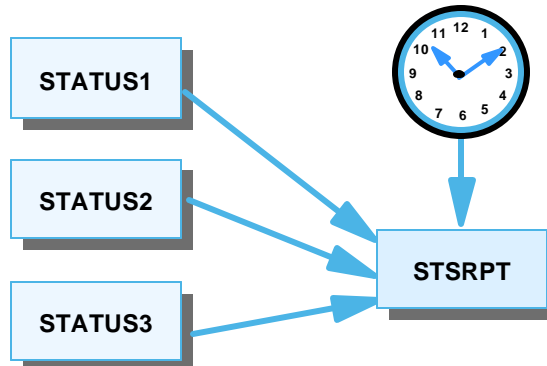
STATUS1, STATUS2, STATUS3 → STSRPT

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Resource Dependencies

```
                         Work with Jobs
                                               3/15/00
17:08:59
 Position to
                              Change Resource Dependencies
Type option  Job name . . . . . . . . . . . :    STSRPT
  22=Change    Group name . . . . . . . . . :     *NONE
  24=Work w    Group sequence . . . . . . . :      0
             Text . . . . . . . . . . . . . :    *NONE
     Job     Wait limit . . . . . . . . . .   120        Minutes, 1-9999, *NOMAX
Opt Name     Conditions to meet . . . . . . . .   *ALL       *ALL, *ANY
                                        Add Network File Dependency
 ___ MYSAVE  Type optio
 ___ PAY01    1=Add      Job name . . . . . . . . . . . :    STSRPT
 ___ PAY02                 Group name . . . . . . . . . :     *NONE
 22  STSRPT  Opt Type       Group sequence . . . . . . . :      0
 ___ TESTNTW  1  *NETF  Text . . . . . . . . . . . . . :    *NONE
 ___ TESTNTW     *NETF  Type . . . . . . . . . . . . . :    *NETF
 ___ TMCD01      *NETF
                        Type choices, press Enter.
More...
Parameters                File . . . . . . . . . . . . . .   STATUS3     Name, generic*, *ALL
===>                      Member . . . . . . . . . . . . .   STATUS3     Name, generic*, *ALL
F3=Exit                   Exist . . . . . . . . . . . . .    *YES        *YES, *NO
F13=Repeat Bottom         To user ID . . . . . . . . . . .   *ALL        Name, *ALL
                          From user ID:
           F3=Exit          User ID . . . . . . . . . . . .  *ALL        Name, *ALL
                            Address . . . . . . . . . . . .  *ALL        Name, *ALL
                        Network file type . . . . . . . . . *ALL        *ALL, *DTA, *SRC,
                        *SAVF...



                        F3=Exit    F12=Cancel
```

Resource Dependencies - V5R1

Resource Dependencies - V5R1

```
New Resource Dependency                                      [?][X]

Dependency type:              Network file dependency

   File name:                 STATUS3                    [v]
   Member name:               Any member                 [v]
   User receiving file:       Any user                   [v]

File sent by:

   User:                      Any user                   [v]

   System name:               Any system                 [v]

   File type:                 Any file type              [v]

   ┌─ Requirements to meet: ──────────────────────┐
   │   (•) File does exist                        │
   │   ( ) File does not exist                    │
   └──────────────────────────────────────────────┘


                    [   OK   ]     [  Cancel  ]
```

Active Dependencies

How can I prevent two Jobs from running at the same time?

```
                        Work with Jobs
                                                    3/15/00
17:05:57
 Position to . . . . . . _____     Starting characters

 Type options, press Enter.
   16=Display run calendar  17=Omit next run  18=Rename job
   19=Work with history                Change Active Dependencies
...
     Job         Group    Job name . . . . . . . . . . . . :   DBBACKUP
Opt Name         Name       Group name . . . . . . . . . . :    *NONE
__  _____             Group sequence . . . . . . . . :      0
21  DBBACKUP    *NONE   Text . . . . . . . . . . . . . . :   Data Base Backup
__  DBRUN1      *NONE   Wait limit . . . . . . . . . . .     180        Minutes, 1-9999, *NOMAX
__  DBRUN2      *NONE
__  FIRSTJOB    JOBLI   Type options, press Enter.
__  LASTONE     JOBLI     1=Add    4=Remove
__  MYSAVE      *NONE
__  PAY01       *NONE      Job         Group     Grp
de                     Opt  Name        Name      Seq  Text
                        _   _____   _____  __
More...                 _   DBRUN1      *NONE       0
 Parameters for option  _   DBRUN2      *NONE       0  Data Base Verification Task
===> _____
F3=Exit    F4=Prompt
F13=Repeat F15=Sort

                       Bottom

                        F3=Exit   F5=Refresh   F11=Alternate view   F12=Cancel
```

Active Dependencies - V5R1

Active Dependencies (Distribution)   ? X

Job name: DBBACKUP

Wait before resetting

Dependencies:
- DBRUN1
- DBRUN2

Edit Active Dependencies (Distribution)   ? X

Job name: DBBACKUP

Scheduled jobs:
- FIRSTJOB - JOBLIST(01)
- JOBLIST
  - FIRSTJOB - JOBLIST(01)
  - LASTONE - JOBLIST(03)
  - SECONDJOB - JOBLIST(02)
- LASTONE - JOBLIST(03)
- PAY01
- PAY02
- PAY3ANEW
- PAY3BNEW
- PAY3CNEW
- SECONDJOB - JOBLIST(02)
- STSRPT
- TEST
- TESTNTWK

Add-->
<-- Remove

Dependencies:
- DBRUN1
- DBRUN2

OK   Cancel

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Alternate Job

☐ *Job to run on failure*

☐ *Could perform cleanup, recovery, or special notification*

Scheduled Job Properties - Distribution   ? X

General | Schedule | Batch Information | Notification | Problem Recovery | Last Run

Maximum run time: No maximum

☑ Use an alternate job if job fails

Job name: CLEANUP

Group: [   ]   Browse

Sequence: 0

Action if job cannot start when scheduled: Start and hold in job queue

Reply to inquiry message: Use default reply

Message logging:

Level: Use user's job description

Severity: Use job control value

Text: Use message text and message help

OK   Cancel   Help

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Operator Control of Scheduled Jobs
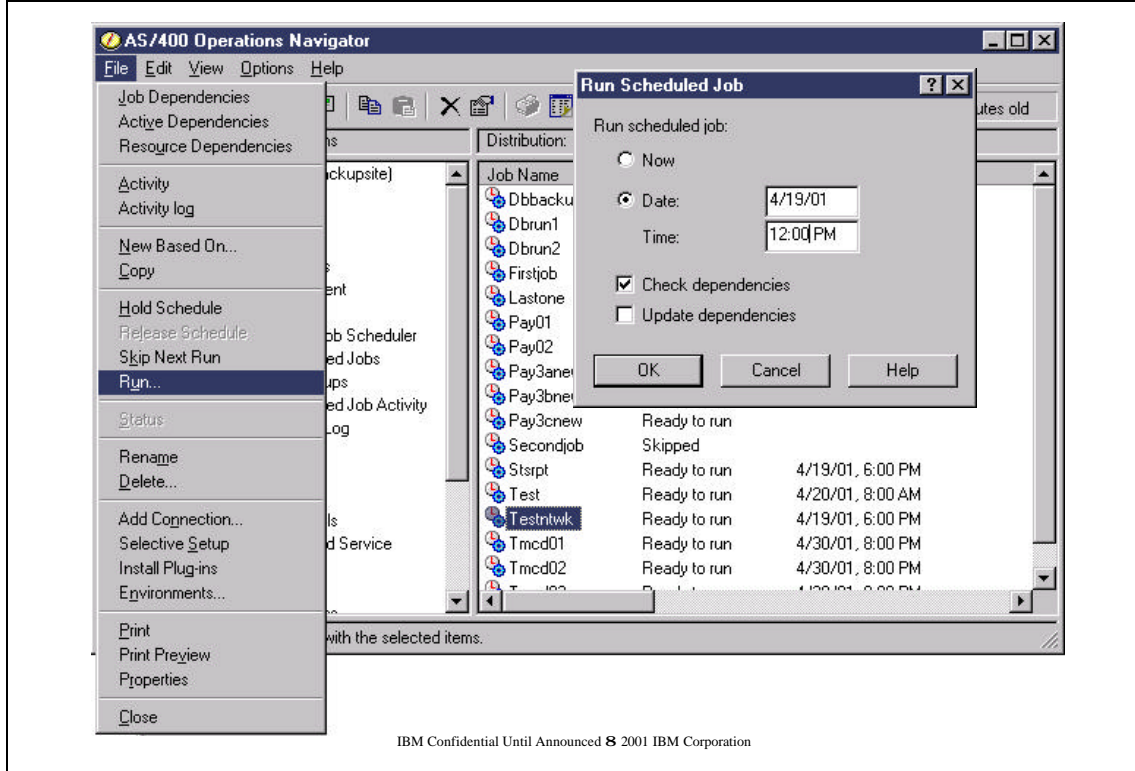
Job Submission Properties

Where and how do I run this JOB?　　　　　　　　IBM *e* server iSeries

Basic properties
- System name
  - Defined via DDM
- Output queue
- Job description
- User
- Job queue
- Current library
- Library list

Advanced properties
- Run priority
- Accounting code
- Job priority
- Output priority
- Print text
- Routing data
- Log CL program commands
- Print device
- Hold on job queue
- Post-IPL recovery action

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Basic Run-time Properties

☐ *Local or remote system*

☐ *Run-time environment*

☐ *Button for advanced properties*

Scheduled Job Properties - Distribution

General | Schedule | Batch Information | Notification | Problem Recovery

System to run job:	MAINSITE	Browse
Job description:	QBATCH	Browse
Library:	QGPL	
Job queue:	QPGMR	Browse
Library:	QGPL	
Output queue:	QPRINT	Browse
Library:	QGPL	
User:	QPGMR	Browse
Current library:	Use default (QGPL)	Browse
Library list:	Use user's job description	

Advanced

OK   Cancel   Help

Notification...

What Job information do you need to tell to whom and how?   IBM *e*server iSeries

- Messages
  - Specify a message queue for sending a completion message
  - For either normal or abnormal completion
  - For abnormal completion, the help information for the message provides the possible causes.
- Paging
  - Pass parameters to a previously installed paging product
    - ► Pager name
    - ► Message text
  - Set options for normal and abnormal completion
- Reports
  - Specify a Report Distribution ID for output
    - ► Defines and groups user output
    - ► Maps application output to user

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Notifying Someone ❀

- ❏ *Message Queue*

- ❏ *Pager name*

- ❏ *Pager message*

Scheduled Job Properties - Distribution [?][X]

General | Schedule | Batch Information | Notification | Problem Recovery | Last Run

☐ Send completion message

Message queue: [QSYSOPR ▼] [Browse]

Library: [QSYS ▼]

☐ Notify pager if job completes successfully

Recipient: [▼]

Message: [▼]

☑ Notify pager if job fails

Recipient: [NETADMIN ▼]

Message: [Auto-ping job failed ▼]

[OK] [Cancel] [Help]

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Report Distribution

How can I manage the output from all these jobs?   IBM **ℰ**server iSeries

Recipient
- **Name**
- **Phone Number**
- **Organizational Information**
- **Default Output Queue**
- **Days to receive**

JOB2

JOB1

Report Distribution ID
- **Name**
- **Description**

Recipient
- **Output queue**
- **Copies**
- **Form type**
- **User ID / Address**
- **Hold spooled file**
- **Save spooled file**
- **Print banner**

Report Distribution Entry
- **Spooled file**
- **Program name**
- **User data**
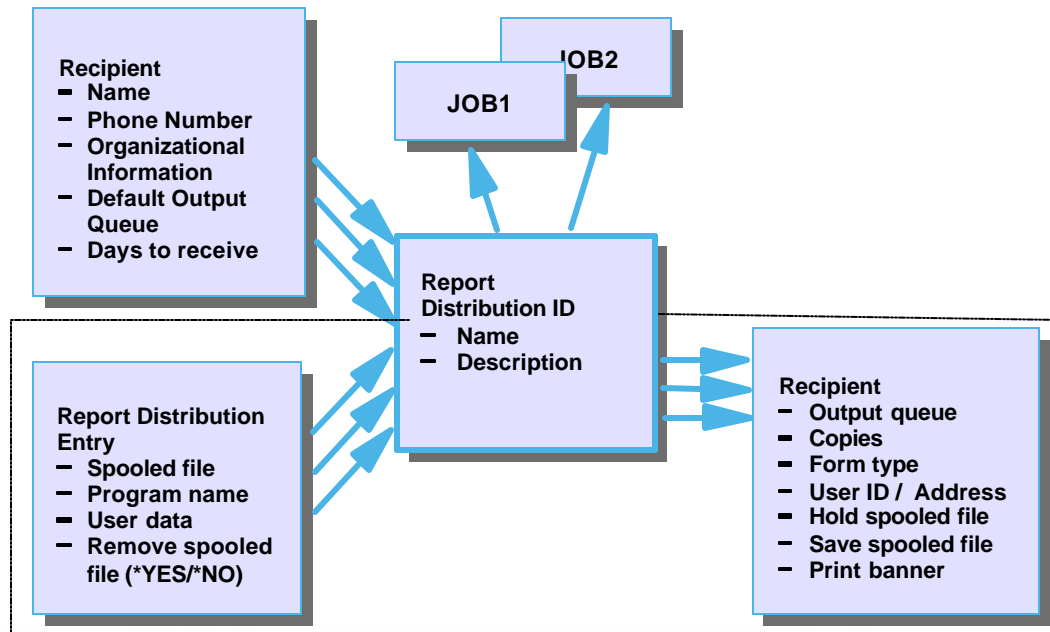- **Remove spooled file (*YES/*NO)**

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Report Distribution

How can I manage the output from all these jobs?

```
                    Work with Report Distribution IDs

Position to . . . . . .  _____      Starting characters

Type options, press Enter.
  1=Add               Work with Report Distribution Entries
  5=Display
          Report distribution ID . . . . . :   TIMECARD
Opt   Di report   Text . . . . . . . . . . . . . .   Distribution list for timekeeping
 _    _____              Work with Report Distribution Recipients
 _    PAY
 2    TIM Type option  Report distribution ID . . . . . :   TIMECARD
            1=Add  2=  Spooled file . . . . . . . . . :   TIMECARD
            5=Display  Program name . . . . . . . . . :   *ALL
                       User data . . . . . . . . . . :   *ALL
                       Remove spooled file . . . . . . . .   *NO        *NO, *YES
          Spooled   Text . . . . . . . . . . . . . .   Management report
Opt  File
                                              Position to  . . . . .  _____
          _____
       2  TIMECAR Type options, press Enter.
       _  TIMECAR   1=Add  2=Change  3=Copy  4=Remove  5=Display  7=Change special instructions

                              Output
                   Opt Recipient   Queue     Library    Copies  Formtype    User
Bottom             Address
                    _  _____
F3=Exit             _  JOEWRKR     *RCP                 *SPLF   *SPLF      *NONE   *LCL
                    _  MARYMGR     *USER                  1     MGRFRM     MARYMGR DETTRM
          Bottom

          F3=Exit



                   Bottom
                   F3=Exit    F5=Refresh   F12=Cancel
```

CL Summary of Basics

What, When, and So What as a useful little Scheduled Job   IBM @ server iSeries

- Add a new Scheduled Job call TESTNTWK
  - Associated with SYSADMIN applications
  - Ping commands to two systems
    - Every 30 minutes
    - Weekdays
    - From 6:00 p.m. to 6:00 a.m.
  - Pages NETADMIN if job fails

```
 ADDJOBJS JOB(TESTNTWK)
          CMD(ping mainsite msgmode(*QUIET *ESCAPE))
          ADLCMD('ping distribution msgmode(*QUIET *ESCAPE)')
          APP(SYSADMIN)
          SCDCDE(*MINUTES)
          ITVMIN(0030)
          DAY(*MON *TUE *WED *THU *FRI)
          RANGE((1800) (0600))
          PGRRCPABN(NETADMIN 'Auto-ping job failed')
 Command equivalent from charts marked with ✿
```

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More Valuable Functions

Workdays / Calendars

Pager programs

Applications

Histories and Logs

Parameters / Local Data Areas

Schedule Codes

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Job Scheduler Properties and Controls

How do I define my workdays, pager software, ...   IBM @server iSeries

- From the Operations Navigator Interface
  - Click the "Advanced Job Scheduler" entry in the navigation pane with your alternate mouse button
  - Click on "Properties" on the pop up menu
  - Select the appropriate properties tab
- From the 5250 Interface
  - Type in the GO JS command
  - Select option 4 to work with
    - Job defaults
    - Calendars
    - Library lists
    - Applications
    - Parameters
  - Select option 5 to work with
    - Pager setup
    - System controls
      - Working days
      - Activity retention
      - Reserve period

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General properties

Retention, reserved period, working days, & pager software

Advanced Job Scheduler Properties - Distribution

General | Applications | Scheduling Calendars | Holiday Calendars | Library Lists | Command Variables

Advanced Job Scheduler for AS/400
Version 4 Release 4 Modification level 0

Activity retention:
5 ● Days
○ Occurrences per job

Reserved period:
☐ Specify a reserved period
Start date:
Time:
End date:
Time:

Working days:
☐ Sunday
☑ Monday
☑ Tuesday
☑ Wednesday
☑ Thursday
☑ Friday
☐ Saturday

☐ Application required for scheduled job

Paging command: CALL PAGEMSTR PARM(&RCP '&MSGTXT')

OK | Cancel | Help

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General properties - V5R1

...added Base Periodic checkbox and Job Controls Tab

Advanced Job Scheduler Properties - Distribution

General | Job Controls | Applications | Scheduling Calendars | Holiday Calendars | Library Lists | Command Variables

Advanced Job Scheduler for AS/400
Version 5 Release 1 Modification level 0

Activity retention:
180 ○ Days
● Occurrences per job

Log retention:
180 Days

Reserved period:
☐ Specify a reserved period
Start date:
Time:
End date:
Time:

Working days:
☐ Sunday
☑ Monday
☑ Tuesday
☑ Wednesday
☑ Thursday
☑ Friday
☐ Saturday

☐ Application required for scheduled job
☑ Base periodic frequency on start time

Paging command: CALL PAGEMSTR PARM(&RCP '&MSGTXT')

OK | Cancel | Help

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Calendars

How can I handle holidays, financial periods, odd schedules ...   IBM *e* server iSeries

- Calendar
  - User-defined set of dates of one year or all years
  - Can be used alone to specify run dates
  - Can be added to most schedules to specify additional run dates
- Holiday Calendar
  - Defines action for dates when you do not want jobs to run
    - Skip this run
    - Run on previous working day
    - Run on next working day
    - Run on a specific date
  - Additional dates and actions can be added using a "Reference Calendar"
- Fiscal Calendar
  - User-defined starting and ending dates for fiscal period entries
    - Also bimonthly, quarterly, semiannual, ...
  - Often used in accounting applications
  - When a fiscal calendar is used, all schedule codes base their scheduling on the starting and ending dates within the calendar
  - Only available via 5250 interface

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Defining Job Options for Holidays

How to skip or reschedule jobs

Holiday Calendar Properties

Name: HOLIDAYS

Description: Base Holiday Calendar

Reference calendar:

December 2000

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27	28	29	30	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6

Details:
01/01 every year.
07/04 every year.
12/25 every year.

Holiday dates: Alternate day to run:
☐ 12/25/00   Do not run
  ☐ Specific alternate date: 12/25/00
☑ 12/25 every year.   Do not run
     Do not run
     Run on next working day
     Run on previous working day

Holiday days:
☐ Sunday   Do not run
☐ Monday   Do not run
☐ Tuesday   Do not run
☐ Wednesday   Do not run
☐ Thursday   Do not run
☐ Friday   Do not run
☐ Saturday   Do not run

OK   Cancel   Help

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Fiscal Calendars

How do I define financial time periods?

```
                    Work with Fiscal Calendars

Position to . . . . . .  _____      Starting characters

Type options, press Enter
  1=Add                 Work with Fiscal Calendar Entries
  5=Display
                Fiscal calendar . . . . . . . . . :   QUARTERS
Opt   Cal       Text . . . . . . . . . . . . . .    Fiscal Quarters
 _                           Display Fiscal Calendar Entry
 _    FOUR
 2    QUA    Type optio  Fiscal calendar . . . . . . . . . . :   QUARTERS
             1=Add  2    Entry name  . . . . . . . . . . . :   Q2000

        Entry           Period 01 Start:End . . . . . . . :    1/01/00 :  3/31/00
Opt   Name              Period 02 Start:End . . . . . . . :    4/01/00 :  6/30/00
                        Period 03 Start:End . . . . . . . :    7/01/00 :  9/30/00
 5    Q2000             Period 04 Start:End . . . . . . . :   10/01/00 : 12/31/00
 _    Q2001             Period 05 Start:End . . . . . . . :           :
                        Period 06 Start:End . . . . . . . :           :
                        Period 07 Start:End . . . . . . . :           :
                        Period 08 Start:End . . . . . . . :           :
                        Period 09 Start:End . . . . . . . :           :
                        Period 10 Start:End . . . . . . . :           :
                        Period 11 Start:End . . . . . . . :           :
                        Period 12 Start:End . . . . . . . :           :
Bottom                  Period 13 Start:End . . . . . . . :           :

F3=Exit                 Press Enter to continue.

                        F3=Exit   F12=Cancel
```
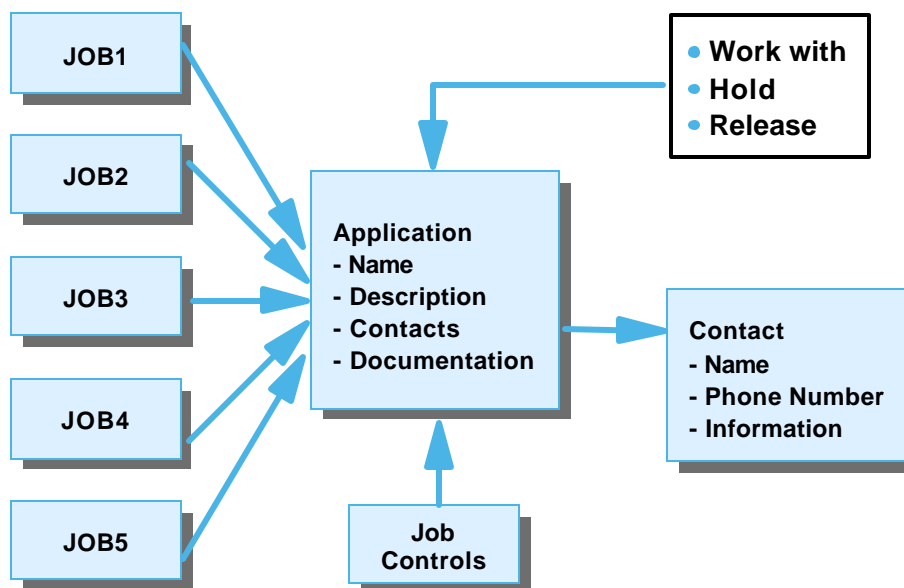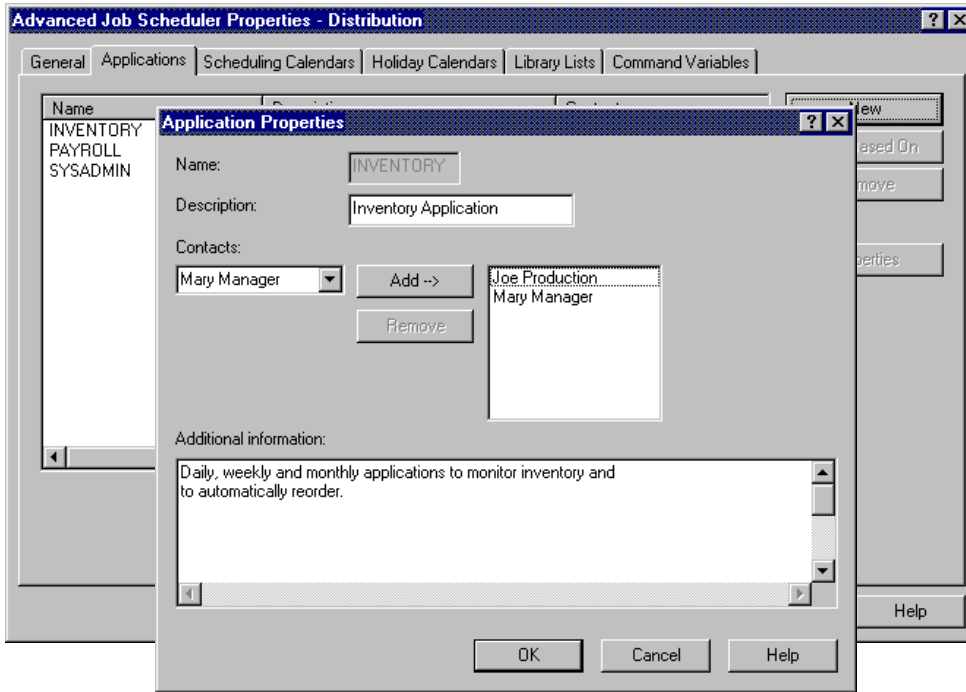
Applications

How can I manage related Jobs?   IBM @server iSeries

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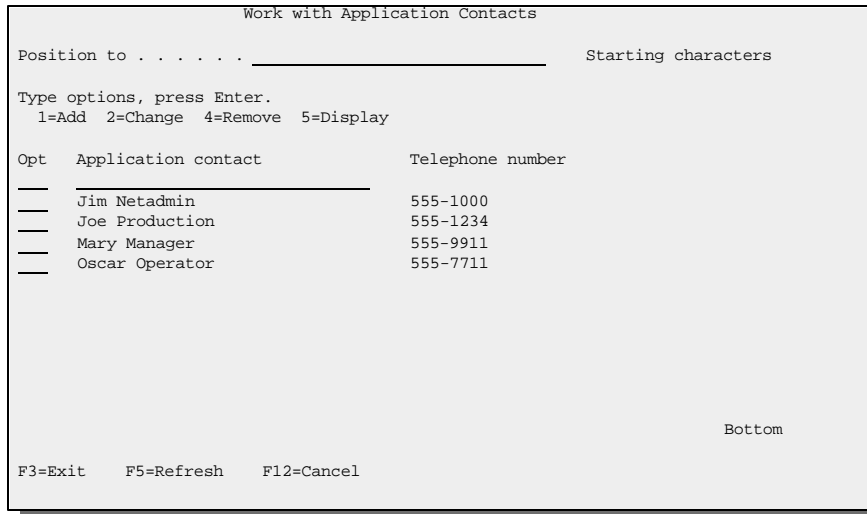IBM Confidential Until Announced 8 2001 IBM Corporation

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Applications...

```
Advanced Job Scheduler Properties - Distribution                    ? X

General | Applications | Scheduling Calendars | Holiday Calendars | Library Lists | Command Variables |

  Name                    Description              Contact              View
  INVENTORY
  PAYROLL       Application Properties                        ? X      ased On
  SYSADMIN
              Name:           INVENTORY                               move

              Description:    Inventory Application

              Contacts:                                               erties
              Mary Manager    ▼    Add -->    Joe Production
                                             Mary Manager
                                   Remove


              Additional information:

              Daily, weekly and monthly applications to monitor inventory and  ▲
              to automatically reorder.




                                             ▼
              ◄                              ►            Help

                              OK      Cancel      Help
```

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Applications...

```
                    Work with Application Contacts

Position to . . . . . . _____    Starting characters

Type options, press Enter.
  1=Add  2=Change  4=Remove  5=Display

Opt   Application contact          Telephone number

____   Jim Netadmin                555-1000
____   Joe Production              555-1234
____   Mary Manager                555-9911
____   Oscar Operator              555-7711




                                                          Bottom

  F3=Exit    F5=Refresh    F12=Cancel
```

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Histories and Logs

What has been happening due to the Scheduler?

IBM @server iSeries

- Job Completion History
  - A display of all jobs processed by the Advanced Job Scheduler
    - ▸ Job name
    - ▸ Last run date
    - ▸ Start and end time
    - ▸ Elapsed time
    - ▸ Completion status
  - Called "Scheduled Job Activity" in Operations Navigator
  - Provides a quick path to Joblog or Job output
- Scheduler Activity Log
  - A display by date and time of Scheduler messages
    - ▸ Job submissions / starts / steps / completions
    - ▸ Administrative / maintenance tasks
  - Selectable by type / job / time / severity
  - Display or print
    - ▸ Second level message information available

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Job History and Job Scheduler Log

What has happened to my Jobs and the Scheduler?

IBM @server iSeries

```
                    Work with History
                                              3/23/00
13:45:08
 Position to Date . . . . .   _____

 Type options, press Enter.
   4=Remove   5=Display   7=Display job log   8=Work with job(WRKJOB)

     Job          Group    3/23/00          Display Log for Job Scheduler
Opt Name          Name    13:50:07                        Position to . . . .
    DBRUN1        *NONE   3/23/00
    DBRUN2        *NONE
    DBBACKUP      *NONE   -------------------------------- 3/23/00
    DBRUN1        *NONE   --------------------------------
    DBRUN2        *NONE   0 records were removed from the Job Scheduler history file.
  8 TESTNTWK      *NONE   0 entries were removed from the Job Scheduler log.
                         **Warning** holiday calendar HOL2000 has no active entries.
                          Job 002042/QIJS/DBRUN1 submitted for job DBRUN1 group *NONE sequence *N.
                          Job 002042/QIJS/DBRUN1 started for job DBRUN1 group *NONE sequence *N.
                          Job DBRUN1 for group *NONE sequence *N had no commands to execute.
                          Job 002042/QIJS/DBRUN1 completed normally for job DBRUN1 group *NONE
                          sequence
Bottom                    Job 002043/QIJS/DBRUN2 started for job DBRUN2 group *NONE sequence *N.
                          Job 002043/QIJS/DBRUN2 submitted for job DBRUN2 group *NONE sequence *N.
 F3=Exit   F5=Refresh     Job DBRUN2 for group *NONE sequence *N had no commands to execute.
                          Job 002043/QIJS/DBRUN2 completed normally for job DBRUN2 group *NONE
                          sequence
                          Job FINANCIL added.
                          Job FINANCIL reset.
                          Job FINANCIL changed.

                          More...
                          Press Enter to continue.

                          F3=Exit    F5=Refresh    F12=Cancel    F17=Top    F18=Bottom
```

Parameters / Local Data Area

How do I pass information to Scheduled Jobs?   IBM @ server *iSeries*

- Parameters
  - Variables such as the beginning of each month, a division number, ...
  - Can be passed to Job Scheduler from system, e.g. when user schedules jobs from a menu
  - Used in commands that are associated with jobs
  - Preceded by an ampersand (&) or pound (#) when specified in a command
  - Defined in a table with default values
- Parameter Data
  - Any character is valid for entry into the Parameter data
  - Special values can be used in the Parameter data field
    - Date calculations - *QMDY(M+1,D=1) would
      - Start with the current system date
      - Add 1 to the month and set the day as the first of the month
      - Return the date in month, day, year format
    - Operator input - *RQS will take the value returned from any inquiry message
    - Parameter Program - will call a program to calculate and return the parameter value
- Local Data Area
  - 1024 bytes of information shared among all programs in a Job
  - Can be set before Job is started
  - Better performance than user managed data areas

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Schedule Codes

How do I set up Schedules with a 5250 Menu?   IBM @ server *iSeries*

- *NONE	- *FIRST
- *CALENDAR	- *SECOND
- *DAILY	- *THIRD
- *DAY	- *FOURTH
- *DATE	- *FIFTH
- *NUMDAY	- *LAST
- *MINUTES	- *LASTWRK
- *ONCE	- *FIRSTWRK
- *MONTHEND	- *ALTERNATE

See the manual or on-line help for details

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Schedule Codes

Can I change the Schedule code on an existing Job?

```
                          Change Job
                                                3/17/00
17:03:39
  Job name . . . . . . . . . . :   TESTNTWK
    Group name . . . . . . . . :     *NONE
    Group sequence . . . . . . :      0

 Type changes, press Enter.

  Application  . . . .                          Change Job
  Schedule code  . . .                                            3/17/00
  Interval . . . . . . 17:03:39
                        Job name . . . . . . . . . . :   TESTNTWK
  Calendar . . . . . .     Group name . . . . . . . . :     *NONE
  Holiday calendar . .     Group sequence . . . . . . :      0
  Fiscal calendar  . .
  Days . . . . . . . . Type changes, press Enter.
  Text . . . . . . . .
                         Application  . . . . . . . . .   SYSADMIN    Name, *NONE, F4 for list
                         Schedule code  . . . . . . . .   *DAILY      Name, *DAILY, F4 for list
                         Scheduled times  . . . . . . .   0:00   0:00   0:00   0:00   0:00
                                                          0:00   0:00   0:00   0:00   0:00
                         Calendar . . . . . . . . . . .   *NONE       Name, *NONE, F4 for list
More...                   Holiday calendar . . . . . . .   *NONE       Name, *NONE, F4 for list
F3=Exit    F4=Prompt      Fiscal calendar  . . . . . . .   *NONE       Name, *NONE, F4 for list
                         Days . . . . . . . . . . . . .   *MON  *TUE  *WED  *THU  *FRI  ____  ____
                         Text . . . . . . . . . . . . .   Test via ping


                        More...
                        F3=Exit    F4=Prompt    F12=Cancel    F16=Display calendar
                        Start time cannot be used.
```

Getting Started

Installation

Migration

Information

IBM **e**server. For the next generation of e-business.

Installation

How do I get started?   IBM *e* server *iSeries*

- The Advanced Job Scheduler product (57xx-JS1) is shipped on the iSeries stamped media set
- System code is Installed using GO LICPGM Option 11
- After installation of host code, GUI Plug-in can be installed using Client Access Selective Setup
  - Specify the source directory as **\\SYSTEM\qibm**, where **SYSTEM** is the NetServer name of the system where 57xx-JS1 product is install
  - Check the **Advanced Job Scheduler** box under the **Operations Navigator** component

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Installation

Installing the Operations Navigator Graphical Plug-in...
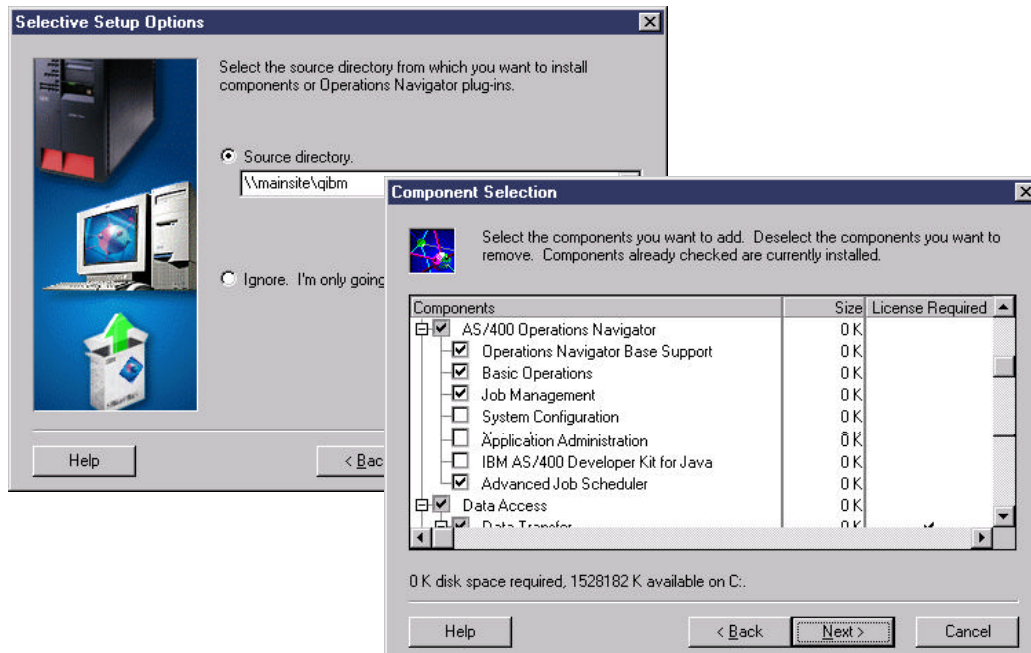
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Migrating JOBSCDE Jobs

How easy is it to move my current OS/400 automation?

```
 JSSYSCTL                    System Controls

Select one of the following:

     1. Start monitor
     2. End monitor
     3. Change system controls
     4. Work with function authorities
     5. Change job authority
     6. Change pager command
     7. Work with OS/              Work with OS/400 Job Schedule Entries
     8. Reset jobs    19:27:38                                       3/17/00
     9. Start console

                      Type options, press Enter.
                        2=Change   3=Hold   4=Remove   5=Work with   6=Release
                        8=Add to Job Scheduler
                                                                      Next
 Selection or command                 -----Schedule------      Recovery  Submit
 ===> 7               Opt  Job      Status  Date     Time     Frequency  Action   Date
                           CHGSYSSEC  SCD  *MONTHSTR  5:00:00  *MONTHLY  *SBMRLS  4/01/00
                           LIBCHECK   SCD  *USRDFN    8:00:00  *WEEKLY   *SBMRLS  3/13/00
                        8  MYSAVE     HLD  *USRDFN   18:00:00  *WEEKLY   *SBMRLS  3/10/00




                      Bottom

                      F3=Exit   F5=Refresh   F6=Add   F12=Cancel
```

Information Sources

Where can I find more details?   IBM **e** server *iSeries*

- Product page on iSeries website
  http://www-1.ibm.com/servers/eserver/iseries/jscheduler/
  - Product Information
  - Technical Information and PTFs
  - Job Scheduler Education
  - Contact Us
  - Support Line
- On-line manuals
  http://publib.boulder.ibm.com/pubs/html/as400/onlinelib.htm
  - Select Language, click "GO!"
  - Click "V4R4" or "V4R5", then "Category Bookshelves", then "Day to day operations"
  - HTML and PDF versions of "Job Scheduler for OS/400: SC41-5324" can be found under the "System View" (V4R4) or "Systems Management" (V4R5) heading
- Technical Studio
  http://publib.boulder.ibm.com/html/as400/infocenter.html
  - Select V4R4 or V4R5 as release, select Language, click "GO!"
  - Click Search on next panel (V4R4 only)
  - Put "Advanced Job Scheduler" in the Search box and click "Search" or "GO"

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