IBM

System i

Systems Management
Advanced job scheduler

Version 5 Release 4

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> **Note**
>
> Before using this information and the product it supports, read the information in "Notices," on page 25.

Contents

Advanced Job Scheduler

The Advanced Job Scheduler licensed program (5722-JS1) is a powerful scheduler that allows unattended job processing 24 hours a day, 7 days a week. This scheduling tool provides more calendar features and offers greater control over scheduled events than the Management Central scheduler. You can also view job completion history and manage notification of a job's status.

If you want to schedule jobs on several systems in your network, the product must be installed on each of you systems. If you want to use the Advanced Job Scheduler in iSeries™ Navigator (and in Management Central), then you must install the client plugin from a system that has the Advanced Job Scheduler installed.

However, it is not necessary to install the Advanced Job Scheduler licensed program on each endpoint system in your Management Central network. When you install the Advanced Job Scheduler on the central system, jobs or tasks that you define on an endpoint system will gather job information that is needed from the central system. You must set up all job definition information on the central system.

If systems in your network have the Advanced Job Scheduler installed locally, you can schedule tasks outside of the Management Central network. Under **My Connections** in iSeries Navigator, you have access to the Advanced Job Scheduler on that local system when you expand **Work Management**.

Note: For ordering information, see the Job Scheduler for i5/OS® 🔹 web site.

Advanced Job Scheduler for Wireless

Advanced Job Scheduler for Wireless is a software application that allows you to access Advanced Job Scheduler on multiple Internet-accessible devices, such as an Internet-ready telephone, PDA Web browser or PC Web browser.

The wireless feature of Advanced Job Scheduler resides on your system, where Advanced Job Scheduler is installed, and allows you to access your jobs and activity, as well as send messages to recipients on your system, and stop and start the Advanced Job Scheduler monitor. Advanced Job Scheduler for Wireless allows each user to customize the settings and preferences of their browsing experience. For instance, a user can show activity, display jobs, and customize the jobs they display.

Advanced Job Scheduler for Wireless allows you to access your jobs when you are normally unable to access a System i™ terminal or emulator. Connect to the Internet with your mobile device and enter the URL for the Advanced Job Scheduler for Wireless servlet. This launches a menu that gives you real-time access to Advanced Job Scheduler.

Advanced Job Scheduler for Wireless works on two types of devices. A Wireless Markup Language (WML) device is an Internet-ready cellular phone. A Hypertext Markup Language (HTML) is a PDA or PC Web browser. Throughout this topic, the different devices are referred to as WML and HTML.

Scheduling jobs with Advanced Job Scheduler

Follow these instructions to manage the Advanced Job Scheduler. You first need to install the licensed program, and then complete the tasks to customize the Advanced Job Scheduler. Finally, the remainder of the tasks allow you to work with and manage this scheduler.

What's new in Advanced Job Scheduler for V5R4

Several enhancements have been made to the Advanced Job Scheduler.

Add multiple commands to a scheduled task

- A command list is a stored set of instructions that Advanced Job Scheduler uses to process Management Central jobs. You can now add a series of commands to the scheduled Management Central task and control the run sequence of these commands. In the past you could only schedule one Management Central task (you could schedule one job to collect inventory, then another job to install fixes, and another one to run commands). Now you can create one Advanced Job Scheduler job that does all those activities.

  When scheduling a task, you have the option to create a new scheduled job, create a new scheduled job based on an existing scheduled job, or add the task to an existing job. CL commands can also be added to Management Central scheduled tasks. For instance, to delay the job between tasks you can use the Delay Job (DLYJOB) command.

  Tasks are processed on the endpoint system that was selected when the task was created. However, all CL commands are processed on the Central system. Each task must complete before the next task or CL command in the list will process.

  After you click the **Schedule** button for a Management Central task, the next window prompts you to specify whether you want to create a new job, create a new job based on another job, or add to an existing job.

  > The **Command** field is located on the **Scheduled Job Properties - General** window. (**My Connections** → **server** → **Work Management** → **Advanced Job Scheduler** → **Scheduled Jobs** → **Right-click a job** → **Properties**)

Notification Banner control

- When you distribute spooled files by using Report Distribution, you can now choose from a list of items and have them print in a large font on the banner page of the new spooled file. The default items are Job name and Spooled file name. You can select up to 2 banner items to print large.

  > The **Available banner items** field is located on the **Notification Properties** window. (**My Connections** → **server** → **Work Management** → **Advanced Job Scheduler** → **Right-click Notification** → **Properties**)

Add send e-mail menu option on system

- This new menu option allows you to use the Advanced Job Scheduler to send an e-mail. When you select this menu item, the New E-Mail Message window appears. This is the same window that appears when you click **My Connections** → **server** → **Work Management** → **Advanced Job Scheduler** → **Notifications** → **Right-click E-mail** → **New E-mail**.

  > **My Connections** → **Right-click a server** → **Send e-mail via AJS**

Distribute reports via the Basic Operations container

- The **Distribute Reports** window provides you with a place to manually distribute spooled files that are generated by a user job that is using a report distribution list. The job can be a job started by Advanced Job Scheduler or manually by a user. You will be prompted for a Report Distribution List. The Report Distribution List is a list of spooled files and the recipients to whom the spooled files will be delivered.

  > **My Connections** → **server** → **Basic Operations** → **Jobs** → **Right-click a job** → **Distribute Reports**

Availability schedule for e-mail recipients

- The availability schedule is the schedule for which the recipient is available to receive notification messages. You can select Always available, blank (never available) or a schedule option that was previously defined in the **Advanced Job Scheduler - Schedules** properties window.

    The **Availability schedule** field is located on the **Recipient Properties - Email** window. (**My Connections → server → Work Management → Advanced Job Scheduler → Notifications → Recipients → Right-click a recipient name → Properties**)

Work Flow Manager

- The Work Flow Manager is a new tool that lets you define units of work that can consist of a combination of automated and manual steps. The units of work can then be scheduled or started manually. With various notification check points, users can be notified when steps have started, completed, did not run by a specific time, and exceeded the run limit. Each step may have predecessor and successor jobs. Predecessor jobs for a step must complete before the step can be automatically or manually completed. After a step has completed, successor jobs are set to run. It is common to specify predecessor jobs that are the same as the successor jobs of the previous step. This causes the step to wait until the jobs complete before notifying of the step's completion.

    A good candidate for using the Advanced Job Scheduler Work Flow Manager is payroll processing. The payroll process consists of manual steps such as inputting time cards, validating reports, and printing and disbursing checks. The automatic steps can clear the batch work files, process time card input, run the payroll updates, and create the reports and checks.

    My Connections → server → Work Management → Advanced Job Scheduler → Work Flow Manager

Integrated file system Object Resource Dependency

- The **Resource Dependencies** window displays information about a specific job's resource dependencies, including a list of dependencies, the requirements needed before continuing to run a job, and the time to wait before resetting a job, as well as allows you to add, remove, or view the properties of a particular resource dependency. New to V5R4 you can indicate if this dependency object is an integrated file system and specify the path.

    My Connections → server → Work Management → Advanced Job Scheduler → Scheduled Jobs → Right Click a job → Resource Dependencies → Create a new dependency type object

Page Selection for notification spool file attachments

- Page Selection allows you to specify selection information based on text and its location within each page of a spooled file. You can specify that the text must exist at a specific location on each page or anywhere on the page. You can also subset the spooled file by selecting a page range.

    The Page Selection function can be found at **My Connections → server → Work Management → Advanced Job Scheduler → Notification → Report Distribution List → Right-click a list → Properties → Click a spooled file → Click Properties**

Add option to not reset held jobs

- Currently there is a possible performance impact when jobs that are scheduled to run periodically are held. Each time the scheduled date and time is reached for a held job, the Advanced Job Scheduler server job determines if the job is still held, and if so, calculates the next date and time the held job should run. New for V5R4, you can suppress this calculation by making sure that the **Reset held jobs** field is unchecked. When the **Reset held jobs** field is unchecked, the next time the date and time is reached for a held job, the scheduled date and time fields are cleared, and no further processing activity is triggered on the held job. When you release the job, the server then calculates the next date and time the job should run. Using the **Reset held jobs** field applies to all jobs defined using the Advanced Job Scheduler.

The **Reset held jobs** field is located on the **Advanced Job Scheduler Properties - General** window. (**My Connections** → **server** → **Work Management** → **Right-click Advanced Job Scheduler** → **Properties**)

Installing the Advanced Job Scheduler

The first time that you connected to your Management Central server, iSeries Navigator asked you if you wanted to install the Advanced Job Scheduler. If you chose no and want to install it now, you can do so by using the Install Plug-Ins feature of iSeries Navigator.

1. From your **iSeries Navigator** window, click **File** from the menu bar.
2. Click **Install Options** → **Install Plug-Ins**.
3. Click the source system where the Advanced Job Scheduler is installed and click **OK**. Check with the system administrator if you are not sure what source system to use.
4. Enter your i5/OS **User ID** and **Password**, and click **OK**.
5. Click **Advanced Job Scheduler** from the Plug-in selection list.
6. Click **Next** and then click **Next** again.
7. Click **Finish** to complete and exit the setup.

You have now installed the Advanced Job Scheduler.

Locate the scheduler
To locate the scheduler, follow these steps:

1. Expand **Management Central**.
2. Click **Scan Now** in response to the message that iSeries Navigator has detected a new component. You might see this message again when you access systems from the **My Connections** container.
3. Expand **My Connections** → of the system that has the Advanced Job Scheduler licensed program installed → **Work Management** → **Advanced Job Scheduler**.

After you have finished this preliminary work with the Advanced Job Scheduler, you are ready to set up the Advanced Job Scheduler.

Setting up the Advanced Job Scheduler

After you have installed the Advanced Job Scheduler, you need to configure it. After you have finished this preliminary work, you are ready to begin scheduling jobs.

Assigning the general properties
You can follow these instructions to assign the general properties used by Advanced Job Scheduler. You can specify how long to retain activity and log entries for the Advanced Job Scheduler, as well as the period that jobs will not be allowed to run.

You can specify the working days that jobs will process, and whether an application is required for each scheduled job. If you have a notification product installed, you can also set up the command that will be used to send a notification when a job completes or fails or you can use the Send Distribution using Job Scheduler (SNDDSTJS) command to notify a recipient

You can specify how long to retain activity records for jobs, as well as the period that jobs will not be allowed to run. You can specify the working days that jobs are allowed to process, and whether an application is required for each submitted job.

You can have a notification product installed which allows you to receive a notification (message) when a job ends. You can define the notification command that will send a notification when a job completes or fails or you can use the Send Distribution using Job Scheduler (SNDDSTJS) command to notify a recipient.

To set up the general properties for the Advanced Job Scheduler, follow these steps:

1. Expand **Work Management** from your iSeries Navigator window.

2. Right-click **Advanced Job Scheduler** and click **Properties**.

3. Specify the **Activity Retention**. The activity retention is how long you want to retain the activity records for jobs. The possible values are 1 to 999 days or occurrences. Click **Days** to specify if you want to keep activity for a certain number of days, or click **Occurrences per job** if you want to keep activity for a certain number of occurrences per job.

4. Specify the **Log retention**. The log retention specifies, in days, how long you want to retain Advanced Job Scheduler log entries.

5. You can specify a **Reserved period**. Jobs will not run during this time.

6. Specify the working days from the list. If a day is selected, it is designated as a working day and can be referenced when scheduling jobs.

7. Click **Application required for scheduled job** to designate whether an application is required for each scheduled job. **Applications** are jobs that have been grouped together for processing. This cannot be selected if existing jobs do not contain an application. If you choose to have an application required for certain jobs, go to working with applications.

8. Click **Calendars** to set up the scheduling, holiday, and fiscal calendars to use, set up holiday calendar, and set up fiscal calendar.

9. Click **Base periodic frequency on start time** to base the next run time on the start time for jobs that are scheduled to run periodically. For instance, a job is to run every 30 minutes, starting at 8:00 am. (For a job to run around the clock, specify 7:59 am as the ending time.) The job runs for a total of 20 minutes. With this field checked, the job runs at 8:00 am, 8:30 am, 9:00 am, and so on. If this field is not checked, the job runs at 8:00 am, 8:50 am, 9:40 am, 10:30 am, and so on.

10. Click **Reset held jobs** to continue to recalculate and display the next date and time a held job runs.

11. Specify a **Start time of day**. This is the time of day that you consider starts a new day. All jobs that are specified to use this time of day will have their job date changed to the previous day if the time the job starts is before the **Start time of day** field.

12. Specify a **Job monitor user**. This field specifies the name of the user profile to use as the owner of the monitor job. All jobs that have **Current user** specified use the user profile of the monitor job. The monitor job's default user profile is QIJS.

13. In the **Notification command** field, you can specify a command. Use the Send Distribution using Job Scheduler Notification (SNDDSTJS) command supplied with the system or a command specified by your notification software. The SNDDSTJS command uses the Advanced Job Scheduler notification function. The designated recipients can receive messages for normal and abnormal completions of job scheduled entries.

Specifying permission levels

This information explains how to specify permission levels for jobs, functions of the product, and provide new job default permissions.

You can specify permission levels for jobs, functions of the product, and provide new job default permissions to be associated with each Job Control/Application. The permissions for a job allow you to grant or deny access to the following actions: submit, manage, permission, display, copy, update, or delete. You can also grant or deny access to individual functions of the product such as Work with Schedule Calendars, Send Reports, and Add Job.

Default permission levels are transferred to new jobs when they are added. In which case, the system will transfer the New Job permissions based on the application specified within the job definition. If no application is used, it will transfer the *SYSTEM New Job permissions.

Specifying permission levels for functions of the product:
To specify permission levels for functions of the product, follow these steps:

1. Expand **Work Management** from your iSeries Navigator window.

2. Right-click **Advanced Job Scheduler** and click **Properties**.

3. Click **Permissions**.

4. Select a function and click **Properties**.

5. On the Function Permissions Properties window, edit the permission level as necessary. You can grant or deny access to the public or specific users.

Specifying permission levels to jobs:
To specify permission levels to jobs, follow these steps:

1. Expand **Work Management** from your iSeries Navigator window.

2. Right-click **Advanced Job Scheduler** and click **Scheduled Jobs** to list jobs.

3. Right-click the scheduled job and click **Permissions**.

4. On the Permissions Properties window, edit the permission level as necessary. You can grant or deny access to the public or specific users. In addition, you can specify submit, manage, permission, display, copy, update, or delete permissions.

Specifying default permission levels:
To specify default permission levels for new jobs associated with a Job Control/Application, follow these steps:

1. Expand **Work Management** from your iSeries Navigator window.

2. Right-click **Advanced Job Scheduler** and click **Properties**.

3. Click **Job Controls/Applications**.

4. Select a job control or application from the list and click **New Job Permissions**.

5. On the Function Permissions Properties window, edit the permission level as necessary. You can grant or deny access to the public or specific users. In addition, you can specify submit, manage, permission, display, copy, update, or delete permissions.

Setting up a scheduling calendar

These instructions show how to set up a calendar of selected days for scheduling a job or job group. This calendar can specify the dates to be used for scheduling a job, or it can be used in conjunction with other schedules.

A **scheduling calendar** is a calendar of selected days that you can use for scheduling a job or job group. You can display scheduling calendars, add a new scheduling calendar, add a new scheduling calendar based on an existing one, or remove an existing calendar, provided it is not in use by a currently scheduled job.

You can select a calendar and display its properties to make changes. When you select a calendar, the details of the calendar are displayed under Details.

To set up a scheduling calendar, follow these steps:

1. Open **Work Management** from your iSeries Navigator window.

2. Right-click **Advanced Job Scheduler** and click **Properties**.

3. On the General page, click **Calendars**.

4. On the Scheduling Calendars page, click **New**.

5. Specify a **Name**.

6. In the **Description** field, specify text that describes the calendar.

7. Choose a **Reference calendar** if applicable. This is a calendar that was previously set up, and its properties will be applied to the new calendar as if you merged the two calendars. You will not have reference calendars if this is your first time using the Advanced Job Scheduler.

8. Select the dates that you want to include on your calendar. You must specify whether each date you have selected is for the current year or for every year in the **Selected date** field, before you can add another date to the calendar. Otherwise, any date you select will be deselected when you click a different date.

9. Specify if you want certain days of the week to be included on the calendar.

Setting up a holiday calendar

These instructions show how to set up a calendar for days that you do not want to allow processing for a scheduled job. Alternate days can be specified for each exception day, or processing can be skipped completely for that day.

A **holiday calendar** is an exception calendar for days that you do not want to process an Advanced Job Scheduler job. Alternate days can be specified for each exception day that you specify in a holiday calendar. You can display holiday calendars, add a new holiday calendar, add a new holiday calendar based on an existing one, or remove an existing calendar, provided it is not in use by a currently scheduled job.

Predefined schedules can be used in holiday calendars. You can create a schedule THIRDFRI that has a frequency of the third Friday of each month. When you use THIRDFRI in a holiday calendar, you cause all jobs that use this holiday calendar to not run on the third Friday of each month. One or more schedules can be used in a holiday calendar. Dates that are generated by the schedule will be shown on the calendar with a black border.

You can select a calendar and display its properties to make changes. When you select a calendar, the details of the calendar are displayed under Details.

Setting up a holiday calendar:
To set up a holiday calendar, follow these steps:
1. Expand **Work Management** from your iSeries Navigator window.
2. Right-click **Advanced Job Scheduler** and select **Properties**.
3. On the General page, click **Calendars**.
4. Click the **Holiday Calendars** tab.
5. Click **New** and type a name for the calendar.
6. In the **Description** field, specify text to describe the calendar.
7. Choose a **Reference calendar** if applicable. This is a calendar that was previously set up, and its properties will be applied to the new calendar as if you merged the two calendars. You will not have reference calendars if this is your first time using the Advanced Job Scheduler.
8. Select the dates that you want to include on your calendar. You must specify whether each date you have selected is for the current year or for every year in the **Selected date** field, before you can add another date to the calendar. Otherwise, any date you select will be deselected when you click a different date.
9. Select an alternate day for the job to run. You can choose the previous working day, next working day, a specific date or not at all. To select a specific date, click **Specific alternate date**, and type the date.
10. Select specific days of the week to be included on the calendar.

Adding a schedule to a holiday calendar:
To add a holiday calendar to a scheduled job, follow these steps:
1. Expand **Work Management** from your iSeries Navigator window.
2. Right-click **Advanced Job Scheduler** and click **Properties**.
3. On the General page, click **Calendars**.
4. On the Holiday calendar page, select the holiday calendar and click **Properties**.

5. From the lower left hand corner of the tab, click **Schedules**.
6. Select the appropriate schedule and click **Add**.
7. To change the **Alternate day**, right-click the schedule from the **Selected Schedules** list and click the correct **Alternate Day**.

Setting up a fiscal calendar

If you want to divide the fiscal year into periods other than months, follow these steps to set up a fiscal calendar of selected days for scheduling a job or job group.

A *fiscal calendar* is a calendar of selected days that you can use for scheduling a job or job group. Use a fiscal calendar to define a fiscal calendar that is unique to your business. You can specify the start and end dates for each period in the fiscal year.

To set up a fiscal calendar, follow these steps:
1. Open **Work Management** from your iSeries Navigator window.
2. Right-click **Advanced Job Scheduler** and click **Properties**.
3. On the General window, click **Calendars**.
4. On the Fiscal Calendars page, click **New**.
5. Specify a **Name**.
6. In the **Description** field, type in text to describe the calendar.
7. Click **New** on the Fiscal Calendar Properties window to create a new entry.
8. Select a period and specify the start and end dates. You can specify up to 13 periods.
9. Click **OK** to save the fiscal calendar entry.
10. Repeat steps 7 through 9 as necessary.

Specifying a mail server to use for notification

A mail server is required if you want to send e-mail notification messages.

To set up the notification properties, follow these steps:
1. Open **Work Management** from your iSeries Navigator window.
2. Expand **Advanced Job Scheduler**.
3. Right-click **Notification** and click **Properties**.
4. Specify how many days to store messages. Specify a number in the **Message retention** field.
5. Specify an **Outgoing mail server (SMTP)**. For example, SMTP.yourserver.com.
6. Specify a **Port**. The default port number is 25.
7. Specify an e-mail address in the **Reply address** field. All reply messages are sent to this address.
8. Select **Yes** or **No** in the **Log send activity** field. Send activity is used for problem determination.
9. Specify the **Number of banner pages** allowed. This is used in Report Distribution.
10. Click **OK** to save the notification properties.

Setting up multiple scheduling environments

You can set up scheduling environments on the same system. By doing this, the original data library can act as the active data library and the copied data library can be used for testing. Thus you have two scheduling environments, one for testing and one that is the actual. In addition, the test data library can serve as a backup if there is a system failure on the original system. This feature gives you added protection if you create an error in the original data library because you have a backup copy of the data library.

There are several reasons why you might want to set up multiple scheduling environments. You might want to have a production version and a test version of the product running at the same time. This type of environment allows you to test various job schedules before actually using them in the data library on

the production system. Or you might have a system that is the backup for one or more other systems in which you can use a data-mirroring product to replicate the Advanced Job Scheduler data library (QUSRIJS) from the source system into a library named differently. In this case, the data library is active until there is a problem with the source system.

A scheduling environment is a duplicate of the QUSRIJS library except with different data. For instance you can have another data library named QUSRIJSTST with all the objects as QUSRIJS. Each are considered data libraries.

To set up a multiple scheduling environment, follow these steps:

1. Obtain a data library from a system

   To create a data library, you need to obtain a data library from a system. The following are three ways that you can obtain a data library from the system:

   - Save the data library from a system and restore it onto the production system.
   - Duplicate the data library on the current system using the Copy Library (CPYLIB) command.
   - Mirror a data library on the test system. These systems should be running the same version release level.

   Note: The copied, restored, or mirrored data library uses a different name than the original system.

2. Assign data libraries to users

   After you obtain a test data library, add the data library to the Advanced Job Scheduler's properties and assign users to the data library. Therefore, when a user uses the Advanced Job Scheduler, the changes that the user makes are stored in the data library assigned to the user.

3. Copy jobs from test data library to actual data library (optional)

   If you are using a data library for testing purposes, you might want to copy the jobs from the test data library to the actual data library in use. You only need to do this if you restored or copied a data library in step 1 and you have jobs that you want to move to the actual data library in use. You do not need to do this if you mirrored a data library from the actual system to a test system.

   To copy jobs from one system's data library to another, use the Copy Job using Job Scheduler (CPYJOBJS) command. For more information about the specific parameters for this command, see the online help.

Assigning data libraries to users

The data library stores any changes that the user does using the Advanced Job Scheduler. A data library contains all the objects found in the QUSRIJS library. You can have an unlimited number of data libraries.

To assign data libraries to users, follow these steps:

1. Expand **Work Management** from your iSeries Navigator window.
2. Right-click **Advanced Job Scheduler** and click **Properties**.
3. On the Data Libraries window, click **Add** to specify a data library. The data libraries that are listed are available to all users on the system.
4. On the Users window, click **Add** to add new users.
5. Specify a name.
6. Select a data library.
7. Click **OK** to add the user.
8. Click **Properties** to change the data library assigned to a user.

With data libraries, you can set up multiple scheduling environments.

Managing the Advanced Job Scheduler

This information shows how to schedule jobs using the Advanced Job Scheduler.

Creating and scheduling a job

You can schedule a job and specify the commands that are associated with the job. You can also specify starting and ending commands to run a special version of a scheduled job.

To create and schedule a new scheduled job, follow these steps:

1. Open **Work Management** from your iSeries Navigator window.
2. Right-click **Advanced Job Scheduler**.
3. Right-click **Scheduled Jobs** and click **New Scheduled Job**.

Creating and scheduling a job group

You can set up and schedule a series of jobs that run consecutively in a specified order. Jobs within a job group require completion before the next job is submitted for processing.

Job groups are jobs that are grouped together to run consecutively in the order specified. A normal completion is required for each job in the group before the next job in the group is submitted for processing. If any job in the group does not complete normally, the processing stops for that group.

To create and schedule a new job group, follow these steps:

1. Open **Work Management** from your iSeries Navigator window.
2. Click **Advanced Job Scheduler**.
3. Right-click **Job Groups** and click **New Job Group**.

Refer to the online help for more information as you fill in details for the new job group.

Predefined schedules

You can create schedules that contain information needed to schedule a job or calculate exception dates within a holiday calendar.

For instance, you can create an ENDOFWEEK schedule that contains the day of the week to run, along with any additional calendars. The ENDOFWEEK schedule can then be used by all the jobs that match that scheduling frequency. You can access this feature only through iSeries Navigator.

You can use those same predefined schedules that are used in a job with your holiday calendars. You can create a schedule THIRDFRI that has a frequency of the third Friday of each month. When you use THIRDFRI in a holiday calendar, you cause all jobs that use this holiday calendar to not run on the third Friday of each month. You can use one or more schedules in a holiday calendar. Dates that are generated by the schedule will be shown on the calendar with a black border.

Setting up a predefined schedule:

To set up a predefined schedule, follow these steps.

1. Expand **Work Management** from your iSeries Navigator window.
2. Right-click **Advanced Job Scheduler** and click **Properties**.
3. Click the Schedules tab.
4. Click **New** and type a name for the schedule.
5. Type a description for the schedule.
6. Select the frequency and dates that you want to include in your schedule, as well as any additional calendars.

Refer to the online help for more information as you fill in details for the new schedule.

Adding a schedule to a scheduled job:

To add a schedule to a scheduled job, follow these steps:

1. Open **Work Management** from your iSeries Navigator window.
2. Right-click **Advanced Job Scheduler**.
3. Click **Scheduled Jobs** to list jobs.
4. Right-click the scheduled job and click **Properties**.
5. Click the Schedule tab.
6. From the upper right hand corner of the tab, select the appropriate Schedule option.

Adding a schedule to a holiday calendar:

A holiday calendar is an exception calendar for days that you do not want to process an Advanced Job Scheduler job. Alternate days can be specified for each exception day that you specify in a holiday calendar.

To add a schedule to a holiday calendar, follow these steps:

1. Expand **Work Management** from your iSeries Navigator window.
2. Right-click **Advanced Job Scheduler** and click **Properties**.
3. On the **General** page, click **Holiday Calendars**.
4. On the Holiday Calendars page, select the holiday calendar and click **Properties**.
5. From the lower left hand corner of the tab, click **Schedules**.
6. Select the appropriate schedule and click **Add**.
7. To change the **Alternate day**, right-click the schedule from the **Selected Schedules** list and click the correct **Alternate Day**.

Refer to the online help for more information.

Creating a temporary scheduled job

At times it might be necessary to run a scheduled job now or in the future in addition to its normal schedule. Use the Submit Job using Job Scheduler (SBMJOBJS) command, option 7 from Work with Jobs display, or the **Run** option from iSeries Navigator. It might also be necessary to process only a portion of the commands in the command list when setting up this special run.

The SBMJOBJS command allows you to specify the Starting and Ending command sequences. For instance, JOBA has 5 commands, sequences 10 through 50. You can specify on the SBMJOBJS command to start with sequence 20 and end with sequence 40. This bypasses sequence 10 and 50.

iSeries Navigator allows you to select a starting command within the command list and an ending command.

To run a special version of a scheduled job with iSeries Navigator, follow these steps:

1. Open **Work Management** from your iSeries Navigator window.
2. Right-click **Advanced Job Scheduler**.
3. Click **Scheduled Jobs** to list jobs.
4. Right-click the scheduled job and click **Run**.
5. Specify whether to run the job now or in the future.
6. Select the starting and ending commands.

Refer to the online help for more information as you fill in details for the new job.

Scheduling job dependencies

The Advanced Job Scheduler allows you to set up dependencies that reflect how jobs are processed in your environment. Dependencies determine when a job or group of jobs can run. You can select to have all dependencies met before a job can run, or you can have at least one dependency met before the job can run.

Dependencies include the following:

- **Job dependencies**

  Job dependencies refer to predecessor and successor relationships for jobs. Predecessor jobs are those that must run before the successor job will run. A successor job is a job that runs after all the predecessor jobs have been processed. There can be multiple successor jobs for a single predecessor job as well as multiple predecessor jobs for a single successor job. In addition, you can specify that a dependent job be skipped if its predecessors and successors run on a day that the dependent job is not scheduled to run.

- **Active dependencies**

  Active dependencies are lists of jobs that cannot be active when the selected job is to be submitted. If any of the jobs are active, the Advanced Job Scheduler will not let the specified job run. The selected job will be delayed until all the jobs in the list are inactive.

- **Resource dependencies**

  Resource dependencies are based on several things. Each type that follows describes the areas that are checked. Following are the types of resource dependencies:

  File   The job is dependent on the existence or non-existence of a file and whether it meets the specified allocation level to be processed. It can also check whether records are present before the job is processed. For instance, JOBA can be set up so that it will only run when file ABC exists, and the file can be allocated exclusively and if records are present in the file.

  Object

      The job is dependent on the existence or non-existence of a QSYS type object and whether it meets the specified allocation level to be processed. For instance, JOBA can be set up so that it will only run when data area XYZ exists. The job can also be dependent on the existence or non-existence of an object found in the integrated file system. If the dependency is based on any object in the path, end the integrated file system path with a forward slash '/'.

  Hardware configuration

      The job is dependent on the existence or non-existence of a hardware configuration and its status to be processed. For instance, JOBA can be set up so that it will only run when device TAP01 exists and has a status of Available.

  Network file

      The job is dependent on the status of a network file in order to be processed.

  Subsystem

      The job is dependent on the status of a subsystem in order to be processed.

To work with job dependencies, follow these steps:

1. Open **Work Management** from your iSeries Navigator window.
2. Expand **Advanced Job Scheduler**.
3. Click **Scheduled Jobs**.
4. Right-click the **Job Name** whose dependencies you want to work with.
5. Select one of the following: **Job Dependencies, Active Dependencies or Resource Dependencies**. Refer to the online help for more information.

The Work Flow Manager

The Work Flow Manager allows you define units of work that consist of automated or manual steps. These units of work can then be scheduled or run interactively. The Work Flow Manager is located in the Advanced Job Scheduler container in the iSeries Navigator interface.

Each step within the work flow can have one or more predecessor Advanced Job Scheduler jobs and one or more successor Advanced Job Scheduler jobs. When a work flow starts, the first step is flagged to run. When it completes, the next step is flagged to run, and so on.

The following are some additional considerations when using the Work Flow Manager:
- You can manually start a work flow at any step. When you do so, you bypass all previous steps in the work flow.
- Automatic steps complete after all prior steps have completed. This includes all predecessor Advanced Job Scheduler jobs.
- After a step completes, the successor Advanced Job Scheduler jobs are flagged to run.
- Manual steps can complete in any sequence as long as the step's predecessor jobs have finished.
- You can mark completed manual steps as not complete and run them again as long as there are no subsequent incomplete automatic steps.
- You can cause a step to wait until the job completes before notifying of the step's completion by specifying predecessor jobs that are the same as the successor jobs of the previous step.
- You can notify other users when a particular step starts, stops, did not start by a specific time, or is taking too long. For example you can notify a user who is responsible for a particular manual step that the previous automated steps have completed.

When you use work flows, the activity log displays when the work flow started, the steps that were run, the status of automated steps (success or fail), when the work flow ended, and the final status of the work flow.

Table 1. Work Flow Example

Work Flow	PAYROLL
Scheduled	Every Friday at 1:00 p.m.
Notification	Clerk - Payroll work flow has started
Step 1	Automatic - Specifies a successor job to initialize payroll files
Step 2	Automatic: • Specifies the successor job from step 1 as a predecessor job for this step • Notifies Clerk that timecards can be entered
Step 3	Manual: • Clerk completes after timecards are entered • Specifies a successor job to process timecard files and print timecard report • Notifies Supervisor if step is not completed within 120 minutes
Step 4	Automatic: • Specifies successor job from previous step as a predecessor job • No Successor jobs • Notifies Clerk to check timecard report
Step 5	Manual: • Clerk will complete after checking reports • Specifies a successor job to process payroll

Table 1. Work Flow Example (continued)

Work Flow	PAYROLL
Step 6	Automatic: • Specifies the successor job from previous step as a predecessor job • No Successor jobs • Notifies Clerk and Supervisor that payroll has completed

In this example the work flow PAYROLL starts every Friday at 1:00 p.m. A notification is sent to the Clerk that the work flow has started.

Because Step 1 is automatic and does not have any predecessor jobs, it flags the successor job that initializes the payroll files to run and then complete. Step 2 has the successor job for Step 1 as its predecessor. Step 2 waits for the job that initializes the payroll files to complete. After it has completed, Step 2 notifies the Clerk that he can enter timecards. There are no successor jobs to flag to run.

The Clerk manually completes Step 3 after all of the timecards are entered. The successor job that processes the timecard file and prints a timecard report is flagged to run. As a precaution, the Supervisor is notified if the step is not completed within 120 minutes. Because the predecessor job for Step 4 is the successor for Step 3, Step 4 waits until the job that processes the timecard file and prints a timecard report has completed.

After the job completes the Clerk is notified that the timecard report can be checked. There are no successor jobs to flag to run. After the timecard report is checked, the Clerk manually completes Step 5. The successor job that processes the payroll and produces the checks is flagged to run.

Because the predecessor job for Step 6 is the successor for Step 5, Step 6 waits until the job that processes the payroll and produces the checks has completed. After the job completes, it notifies the Clerk and Supervisor that Payroll has completed. The checks can now be printed and distributed.

For more detailed information about the Work Flow Manager see the online help.

Creating a new work flow:

When you create a new work flow you will specify how the work flow is started, it's maximum process time, the task steps and their run sequence, scheduling, notification and documentation details.

To create a new work flow, following the following steps:
• In iSeries Navigator, expand **My Connections** → **your system** → **Work Management** → **Advanced Job Scheduler** → **Right-click Work Flow Manager** → **New Work Flow**.
  The New Work Flow window appears.

For more information about how to complete the New Work Flow window see the online help.

Once you have set up your work flow, you can manage the work flow by right-clicking the work flow name and clicking **Work Flow Status**.

Starting a work flow:

When you start a work flow, you can choose whether you want the work flow to start on the first sequence or on a specific sequence.

To start a work flow, follow the following steps:

1. From iSeries Navigator, expand **Work Management** → **Advanced Job Scheduler** → **Work Flow Manager** → **Right-click a work flow** → **Start**. The Start Work Flow window appears.
2. Select if you want the work flow to start on the first sequence or on a specific sequence. If you select to start at a sequence other than the first, all of the prior steps will be marked as completed.

For more information about the Start Work Flow window, see the online help.

Working with work flows:

You can control and monitor the work flow as it runs by using the Work Flow Status window.

You can access the Work Flow Status window by expanding **My Connections** → **server** → **Work Management** → **Advanced Job Scheduler** → **Work Flow Manager** → **Right-click a work flow** → **Status**.
- The General window shows you the current status of the work flow.
- The Steps window provides you with a list of all steps currently defined to the work flow.

  You can see whether a step has been defined to be either automated or manual and when the step has started and ended.
  – To mark a manual step as complete, select the correct step and check the **Complete** box.
  – Manual steps can be marked completed in any order if all of the predecessor Advanced Job Scheduler jobs for the step have completed.
  – Manual steps can be marked as not completed if there are no Automatic steps completed further in the list.
  – A work flow can be started manually at any step. This bypasses all previous steps.

  To refresh the list, click **Refresh**.
- The Documentation window shows you the documentation text for the work flow.

Monitoring job activity for the Advanced Job Scheduler
You can use the Advanced Job Scheduler to view the history or status of a job or a job group. You can also set up the activity retention, which is how long you want to retain the activity records for a job.

Scheduled job activity:

The scheduled job activity allows you to specify how long the Advanced Job Scheduler activity records are to be retained. The possible values are 1 to 999 days or occurrences. You can specify to keep activity for a certain number of days, or for a certain number of occurrences per job.

The following details about a scheduled job are displayed:
- Name The name of the scheduled job.
- Group The name of the job group for the job.
- Sequence The sequence number of the job within the group, if the job is in a job group.
- Completion Status The status of the job.
- Started When the job started running.
- Ended When the job ended.
- Elapsed Time The amount of time in hours and minutes the job took to process.

Specifying the activity retention:

These steps show how to specify the activity retention.
1. Open **Work Management** from your iSeries Navigator window.
2. Expand **Advanced Job Scheduler**.
3. Right-click **Scheduled Job Activity** and click **Properties**.

Viewing the scheduled job activity details:

These steps show how to view the scheduled job activity details.
1. Open **Work Management** from your iSeries Navigator window.
2. Expand **Advanced Job Scheduler**.
3. Double-click **Scheduled Job Activity**.

Viewing the scheduled job activity for a specific job:

These steps show how to view the scheduled job activity for a specific job.
1. Open **Work Management** from your iSeries Navigator window.
2. Expand **Advanced Job Scheduler**.
3. Click **Scheduled jobs**.
4. Right-click the Job Name whose activity you want to display and click **Activity**.

Viewing the activity log details:

The activity log displays activity within the scheduler such as a job added, changed, or submitted. Security violations, sequences processed by a scheduled job, and any errors received are displayed. The dates and times for the previous activities are also displayed.

To view detailed message information, double-click a date and time. To view the activity log details, follow these steps:
1. Open **Work Management** from your iSeries Navigator window.
2. Expand **Advanced Job Scheduler**.
3. Click **Activity Log**. The current day's entries are shown. To change the selection criteria, select **Include** from the Options menu.

Viewing the activity log for a specific job:

These steps show how to view the activity log for a specific job.
1. Open **Work Management** from your iSeries Navigator window.
2. Expand **Advanced Job Scheduler**.
3. Click **Scheduled jobs**.
4. Right-click the **Job Name** whose activity log you want to display and click **Activity log**.

You can also use the **Last Run** page of a job's properties to view the progress of a job. Specify the Set Step using Job Scheduler (SETSTPJS) command before or after a step in the CL program along with a description that states the progress of the job. When the job reaches the SETSTPJS command in the program, the associated description is displayed in the Last Run page and on your wireless device.

Monitoring for messages with Advanced Job Scheduler

Each command in the command list of a job can have message identifiers that are used for monitoring. When the job runs and an error message is issued that matches one of the messages entered for the selected command, the job logs the error but continues processing with the next command in the list.

If zeros are specified in either two or all four of the rightmost positions, such as ppmm00, a generic message identifier is specified. For example, if CPF0000 is specified, all the CPF messages are monitored.

To add message identifiers to a command, follow these steps:
1. Open **Work Management** from your iSeries Navigator window.
2. Right-click **Advanced Job Scheduler**.

3. Click **Scheduled Jobs** to list jobs.
4. Right-click the scheduled job and click **Properties**.
5. Select the command from the list and click **Properties**.
6. Click **Messages**.
7. Enter the message identifiers to monitor and click **Add**.

Creating and working with local data area

A local data area is a portion of space that is allocated for a job. Not all jobs use their local data area but some do. Each command within a job has access to the job's local data area. You might want to use a local data area if you are scheduling a job that previously required you to manually specify additional parameters. Use the local data area to specify the additional parameters so you do not need to manually specify them each time the job starts.

To specify local data area information for a scheduled job, follow these steps:
1. Open **Work Management** from your iSeries Navigator window.
2. Expand **Advanced Job Scheduler → Scheduled Jobs**.
3. Right-click a job and click **Properties**.
4. Edit the Local Data Area window as necessary.

Refer to the online help for more information as you fill in details for the local data area.

Creating and working with application controls and job controls

Applications are jobs that are grouped for processing. They are broader than job groups and do not necessarily process sequentially. Jobs in applications can process simultaneously and one job does not need to wait for another to process. All jobs within the application can be worked with and can have their own set of job defaults. Job controls are the defaults assigned to a job as you add it to the job scheduler as well as defaults used when the job is submitted.

Applications are jobs that have been grouped together for processing. For example, you might have a series of jobs that you use for payroll that you want to group together for an accounting process.

Job Controls are the defaults assigned to a job as you add it to the job scheduler as well as defaults used when the job is submitted. Job control defaults include such things as calendar, holiday calendar, job queue, job description and so on.

You can display all the existing applications/job controls on your system. You can add a new application/job control, add a new application/job control based on an existing one, or remove an application/job control. You can also select an application/job control and display its properties to make changes.

To create a new application/job control, follow these steps:
1. Expand **Work Management** from your iSeries Navigator window.
2. Right-click **Advanced Job Scheduler** and click **Properties**.
3. Click the **Applications/Job Controls** tab.
4. Click **New** and type a name for the application.
5. Type a description for the application.
6. Choose the contacts for the application. Contacts are the names of users who are contacted if you have a problem with a job within the application. You can specify up to 5 contacts per application. You can also choose to add or remove contacts from the contact list.
7. You can type additional information to help you identify the application. The information is associated with the new application. This information might be useful if any problems occur.

Working with notification

Within notification, you can perform a series of tasks. Notification allows you to specify recipient properties and report distribution list properties. In addition, you can send e-mail messages and set up an escalation list in case a recipient does not respond within a specified amount of time.

Before you can send an e-mail message, you need to specify a mail server to use for notification.

The following are highlights of the notification function of Advanced Job Scheduler:

Recipient
> When scheduling a job, you can specify whether to send notification messages to specified recipients. You can send a notification message if a job fails, completes successfully, or does not start within a specified time limit. For each specified recipient, you need to define the recipient's properties. You can access the recipient's properties by selecting **Advanced Job Scheduler** → **Notification** → **Recipients**, and then select a recipient from the list of recipients.

Report distribution list
> Use a report distribution list to specify a list of spooled files that are eligible for distribution. Each spooled file produced by a job is checked to see if a match exists within the spooled file list. If so, the recipients associated with that spooled file receives a copy of the spooled file via e-mail, a duplicate of the spooled file in their output queue, or both. You can access report distribution lists by selecting **Advanced Job Scheduler** → **Notification** → **Report distribution list**.

E-mail You can send an e-mail message to any recipient that is defined in the list of recipients as well as specific e-mail addresses. The recipient's properties must specify an e-mail address to send the message to. When sending an e-mail message, you can attach a spooled file. The spooled file can be sent in PDF format. In addition, you can specify an escalation list to use if the intended recipient does not respond within a specified period of time.

Specifying a spooled file to attach to an e-mail:

To specify a spooled file to attach to an e-mail, complete the following:
1. Expand **Basic Operations** from your iSeries Navigator window.
2. Click **Printer Output**.
3. Right-click the spooled file and click **Send via AJS**.
4. Specify a recipient, subject, and message.

Note: This also can be done from **Output Queues**.

Escalation list
> An escalation list specifies a list of recipients in descending order. The recipients are notified in the order that they are listed. If the first recipient does not respond to the message, the message is sent to the next recipient. This process continues until a response is made. To define an escalation list, go to **Advanced Job Scheduler** → **Notification** → **Escalation Lists**.

Stopping a message from escalating:
To stop a message from escalating, complete the following:
1. Expand **Work Management** from your iSeries Navigator window.
2. Click **Advanced Job Scheduler** → **Notification** → **E-mail** → **Sent**.
3. Right-click the escalating message and click **Stop**.

> **Note:** To view only escalating messages, select **View** → **Customize this view** → **Include** from the iSeries Navigator window. Then, in the **Type** field, select **Escalating**.

Working with library lists

Library lists are user-defined lists of libraries that are used by the Advanced Job Scheduler when a job is processing.

A **library list** is a user-defined list of libraries that is used by the Advanced Job Scheduler job to search for information it needs while processing. You can display library lists, add a new library list, add a new library list based on an existing one, or remove a library list, provided that it is not being used by a currently scheduled job.

You can select a list and display its properties to make changes. You can place up to 250 libraries on the library list.

To add a new library list, follow these steps:
1. Open **Work Management** from your iSeries Navigator window.
2. Right-click **Advanced Job Scheduler** and click **Properties**.
3. Click the **Library Lists** tab.
4. Click **New** and type a name for the library list.
5. Type a description for the library list.
6. Click **Browse** to see a list of existing libraries, and click a library.
7. Click **Add** to add the list of selected libraries.

Working with command variables

A command variable (previously known as a parameter) is a variable you can store and use in jobs submitted through the Advanced Job Scheduler. Examples of command variables include the beginning of each month, a division number, a company number, and so on.

Command variables (previously known as parameters) are variables that you store in the Advanced Job Scheduler and use in jobs submitted through the Advanced Job Scheduler. Command variables contain information that will be replaced inside the command string of a scheduled job. Examples of command variables include the beginning of each month, a company division number, a company number and so on. You can display command variables, add a new command variable, add a new command variable based on an existing one, or remove a command variable, provided it is not currently in use by a scheduled job.

You can select an existing command variable and display its properties to make changes.

To add a new command variable, follow these steps:
1. Open **Work Management** from your iSeries Navigator window.
2. Right-click **Advanced Job Scheduler** and click **Properties**.
3. Click the **Command Variables** tab.
4. Click **New** and type a name for the command variable.
5. Type a description for the command variable.
6. Type the length of the command variable. The length can range from 1 to 90.
7. Choose how you want to supply the replacement value:
   a. Specify the data to use for the command variable. You use any character in this field. The number of characters in the data cannot be greater than the length specified in the Length field.
   b. Type a formula to calculate the date. (For examples, see the online Help.)
   c. Type the program name that you use to retrieve the replacement value.
   d. Type the library that you use to retrieve the replacement value.
   e. Choose whether you want the replacement value retrieved from the system operator at run time.

Working with Advanced Job Scheduler for Wireless

Advanced Job Scheduler for Wireless works on two types of devices. A Wireless Markup Language (WML) device is an Internet-ready cellular phone. A Hypertext Markup Language (HTML) is a PDA or PC Web browser. Throughout this topic, the different devices are referred to as WML and HTML.

Hardware and software requirements

Before yon run Advanced Job Scheduler for Wireless, make sure that you have met all the necessary software and hardware requirements.

The following elements are required to run the Advanced Job Scheduler for Wireless:

- Licensed Program 5722-JS1 V5R3: The Advanced Job Scheduler product that includes Advanced Job Scheduler for Wireless.
- A device to run the function
  - An Internet-enabled telephone with a wireless internet service
  - A PDA with a Web browser, a wireless modem, and a wireless internet service
  - A traditional Web browser on a workstation
- A server running i5/OS$^{(R)}$ V5R3 or later in a TCP/IP network.
- A Web application server running on your central system, such as any of the following:
  - ASF Jakarta Tomcat Application server
  - Any other application server that runs on the central system, having the capability to host servlets
- HTTP Server installed on the system
- Identify your HTTP server with the Advanced Job Scheduler wireless feature. To do this, connect to the system that has Advanced Job Scheduler installed by using the character-based interface. Then, specify the following command:

      CALL QIJS/QIJSCINT

Selecting a device

Internet-ready telephones and wireless PDAs are a rapidly changing technology. They differ in screen size, in user interface, and in many other significant characteristics. The information in this topic helps you choose devices that are compatible with Advanced Job Scheduler for Wireless. Other wireless devices are also compatible if they support wireless Internet browsing, but the interaction might be different.

Internet-ready telephones Select an Internet-ready telephone to use with Advanced Job Scheduler for Wireless.

PDAs Select a PDA to use with Advanced Job Scheduler for Wireless.

PCs You can also use a traditional Web browser with Advanced Job Scheduler for Wireless.

Configuring your wireless environment

To ensure that the Advanced Job Scheduler for Wireless run properly, you need to modify your web application server and firewall configuration.

Before you begin using Advanced Job Scheduler for Wireless, ensure that you have properly configured or set up the following items:

1. Configure your Web application server Set up Advanced Job Scheduler for Wireless to run using an ASF Jakarta Tomcat servlet engine. These instructions specify how to create and start your Web application server. In addition, it specifies a program that you need to run before working with the wireless function of Advanced Job Server.

2. Configure your firewall This topic describes how to configure your firewall for iSeries Navigator for Wireless. These configuration steps also apply to Advanced Job Scheduler for Wireless. View this topic to determine if you need to modify your firewall to gain access to systems from a wireless device.

3. Select a language The default language is set to English, but you can configure your device to display your language of choice.

After you have completed these steps, you are ready to connect to your server and begin using Advanced Job Scheduler for Wireless.

Configuring your Web application server:

Before working with Advanced Job Scheduler for Wireless, you must start and configure the Web application server. The following procedures set up an ASF Tomcat servlet engine for HTTP Server (powered by Apache) to run Advanced Job Scheduler for Wireless.

Requirements

Before you begin, you must have QSECOFR authority and the following installed:
- IBM® HTTP Server (5722-DG1)

Note: The following instructions will create a new instance of an HTTP Server; you cannot use the following instructions to set up Advanced Job Scheduler on an existing HTTP Server.

Initializing Advanced Job Scheduler for Wireless on the HTTP Server

Running the following command will add the Advanced Job Scheduler for Wireless servlet to the Apache Software Foundation Jakarta Tomcat servlet engine. It will also set up an IBM HTTP Server (powered by Apache) named Advanced Job SchedulerP that listens for requests on port 8210.

Before working with Advanced Job Scheduler for Wireless, you need to initialize the Advanced Job Scheduler for Wireless on the HTTP server instance on your system. To do this, specify the following command from the character-based interface. This command runs a program that is supplied with your system.

    CALL QIJS/QIJSCINT

After you configure your Web application server and initialize the Advanced Job Scheduler instance on the Web application server, you can continue configuring your Advanced Job Scheduler wireless environment.

Configuring your firewall:

When you use iSeries Navigator for Wireless, you access your system from the Internet. If you have a firewall, you might have to modify your firewall setup to run iSeries Navigator for Wireless.

If you have never accessed your systems from the Internet and do not have a firewall set up, refer to the IBM Redbook *AS/400® Internet Security Scenarios: A Practical Approach* for strategies to set up a firewall. See the chapters about screened host architecture and screened subnet architecture.

Selecting a language:

When you connect to Advanced Job Scheduler for wireless, you can specify which language to use. If you do not want to specify a specific language, you can proceed to connecting to your system.

To specify a language, use the following URL:

host. domain: *port*/servlet/AJSPervasive?lng= *lang*

- *host*: The host name of the system that contains the product.
- *domain*: The domain where the host is located.
- *port*: The port that the instance of the Web server is listening to
- *lang*: The 2-character identifier for the language. The following is a list of available languages and their 2-character identifiers. (ar: Arabic de: German en: English es: Spanish fr: French it: Italian ja: Japanese)

Now you can begin working with Advanced Job Scheduler for Wireless.

Connecting to your i5/OS operating system

You can use your wireless device to connect to the system that contains the Advanced Job Scheduler product.

To begin using Advanced Job Scheduler for Wireless, specify the URL of your system into your wireless device. When pointing your device to the URL on your system, use the following format. Ensure that the end of the URL (/servlet/Advanced Job SchedulerPervasive) is typed exactly as shown:

host. domain: *port*/servlet/Advanced Job SchedulerPervasive

> *host*: The System i host name. *domain*: The domain where the system is located. *port*: The port that the instance of the Web server is listening to. Default is 8210.

To specify a specific language to use, see Select a language.

Internet-ready telephone and PDA browser layout

If you have successfully connected to the Advanced Job Scheduler for Wireless feature on your system, the initial display contains summary information about your Internet-ready telephone or PDA. The summary specifies how current the information is, how many scheduled jobs exist, how many activity entries exist, and options to check the status of the job monitor or send a message to a recipient. In addition, the summary provides an overall status of OK or Attention at the top of the display. If Attention is specified, a job has a message that needs more attention. The job that requires attention contains an exclamation point.

Traditional browser layout

The traditional browser layout is exactly the same as the Internet-ready telephone and PDA display. However, the amount of content is smaller than the size of the display. Therefore, you can reduce the size of the Web browser to allow for more space to work with other applications while keeping the Advanced Job Scheduler for Wireless Web browser open. In addition, if you are using a traditional Internet browser on your PC, you can select to **Show all** from the Advanced Job Scheduler main menu. Then, you can view more content in a single Web page.

After you have successfully connected to your system, you might want to customize your connection.

Customizing your connection

Using your wireless device, you can customize the interface to your specific needs. For example, you might want to view only certain jobs and specify not to view the job's group name. You also might not want to access the list of scheduled activity. The Customize page on your wireless device allows you to filter jobs as well as change display preferences.

There are many ways to customize your connection whether you are using a PC, PDA, or Internet-ready telephone. To take advantage of these features, see the Job Scheduler for i5/OS Web site.

Managing Advanced Job Scheduler for Wireless

You can use your wireless device to work with Advanced Job Scheduler.

The following features are available using a wireless device:

View active, held, and pending jobs
> You can view a list of the regular jobs (Advanced Job Scheduler jobs) or Management Central jobs that have the active, held, or pending state. You can further customize the jobs displayed by sorting by job type, name, or time. In addition, you can specify which data library contains the data for jobs and activities.

View job dependencies
> You can view the predecessor and successor jobs for a particular job. A successor is a job that is dependent on one or more jobs (predecessors) to run. In turn, a successor job can be a predecessor job to other successor jobs.

Display messages
> If a job has a message waiting for it, you can view the message text and reply to the message using your wireless device.

Start jobs
> You can use your wireless device to submit jobs. The options you can specify when submitting a job depend on what wireless device you use.

Work with Advanced Job Scheduler activity
> You can interact with your Advanced Job Scheduler activity from a wireless device. Each activity has different options based on the status of the activity entry.

Internationalization
> Advanced Job Scheduler for Wireless uses the country and language codes associated with your iSeries(TM) Java(TM) Virtual Machine to determine what language and date/time formatting to use on your wireless devices. If the Java™ Virtual Machine defaults are not the codes you want to use, you can easily change it. See the online help for more details.

See the online help for more details on performing specific tasks.

Troubleshooting the Advanced Job Scheduler

When a job does not run at the scheduled time, these troubleshooting methods can help you find out what you can do.

To troubleshoot the Advanced Job Scheduler, first view the Frequently Asked Questions page at Job Scheduler for i5/OS 🔗 Web site. See the commonly asked questions that identify how to do certain functions with Advanced Job Scheduler.

Also, here are a list of items that you can review when a job does not run at the scheduled time:

Current fix level
> The first thing you should verify is that your fixes are current. When you request fixes, be sure to request a list of all fixes. Not all fixes are included in the Cumulative PTF packages.

Check job monitor
> - Job QIJSSCD should be active in the QSYSWRK subsystem. If it is not, process the Start Job Scheduler (STRJS) command.
> - The job monitor can be in a loop if the status of the job is RUN for over ten minutes. If it is in a loop, end the job with *IMMED, and start the job monitor again (STRJS).
> - If there is a message to answer, reply with a C (Cancel). The job monitor will go into a 90-second delay and then start monitoring again. Print the job log for the monitor job. This will contain the error messages.

Check the Advanced Job Scheduler log

Process the Display Log for Job Scheduler (DSPLOGJS) command for the job. Press F18 to go to the end of the list. Entries exist to explain why the job did not run. Examples of the entries include a resource failure, active or job dependency situation, or submission error.

Dependency on another job

If the job is dependent on another job, take option 10 from the Work with Jobs display to display job dependencies. Press F8 to list all predecessor jobs. A dependent job cannot run unless all the predecessor jobs show *YES in the **Complete** column.

Track a job's progress

If a job is not functioning properly, you can use the Set Step using Job Scheduler (SETSTPJS) command before or after a step in your CL program to help determine what the problem is. Specify the command along with description text in your CL program. Use this command as many times as necessary. The text description that is associated with the current command is displayed in the Command step field on the Last Run page of the scheduled job properties. In addition, you can view the Command step field on the Status window of an active job. The Command step field is automatically updated every time the job encounters the SETSTPJS command. Use this command to help determine the progress of a job.

Collecting these data samples will help in your problem analysis:

Error message conditions

Print the job log for the interactive session, monitor job or scheduled job, depending where the error occurred.

Job schedule date is not correct

Process the DSPJOBJS command for the job with OUTPUT(*PRINT). Print a calendar report if a calendar is used within the job. Print a holiday calendar report if a holiday calendar is used within the job. Press the Print key to print the display of each fiscal calendar entry for the fiscal calendar used within the job.

Advanced Job Scheduler log

Always print the Advanced Job Scheduler log for the time period in question.

Files QAIJSMST and QAIJSHST

Files QAIJSMST and QAIJSHST in library QUSRIJS might need to be journaled before trying to reproduce the problem. Also, the QUSRIJS library may be needed by IBM support.

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