



User Guide
Anydate



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About HelpSystems

HelpSystems is a leading provider of systems & network management, business intelligence, and security & compliance software. We help businesses reduce data center costs by improving operational control and delivery of IT services.

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■ What Can AnyDate Do?

AnyDate reconfigures iSeries job streams to simulate any date and time between the years 1928 and 2071. AnyDate lets you run date- or time-sensitive applications without having to reset system values that affect other jobs and other system users. AnyDate is safe to use when other jobs are running on the same machine. When initiated with a job, its date and time overrides are restricted to that job.

With AnyDate, you can:

Jump into the future—You can use AnyDate for any scenario where you need to simulate a future run date within your iSeries applications.

Step into the past—Although you'll probably never use AnyDate to simulate a job run in 1928, it's useful for re-running historical reports that use the system date as a runtime parameter. If last weekend's production jobs failed, you can use AnyDate to restart them with the appropriate date value.

Stop the clock—AnyDate gives you the capability of freezing the date or time within a job stream to facilitate your testing procedures.

Time Zone Adjustment—If your iSeries is networked with terminals in different time zones, use AnyDate to show the correct time and day at each location.

■ AnyDate is Easy to Use

AnyDate installs in minutes and is easy to initiate from both interactive and batch jobs. Several test programs are even included with the AnyDate software to let you see how easy it is to use. You can run AnyDate with two basic commands:

OVRSYSDATE (Override System Date) starts the job with the date and time parameters that you specify.

DLTDATEOVR (Delete Date Override) ends the date simulation and returns the job to normal system values.

Thus, an interactive user can simply key in the OVRSYSDATE command at a command line and run applications with the simulated date. When used with a batch job scheduler, include OVRSYSDATE as the first command in your job definition and DLTDATEOVR as the last. It's as simple as that. Pick a date—AnyDate lets you run iSeries jobs in the past, present or future.

■ Test AnyDate to Override the System Date

AnyDate is installed in a default library named OVRSYSDATE. This library contains some test programs that are useful for verifying that the product is working correctly. You can design your own tests, or modify the tests that are shipped with the product. The source code for many of the programs shown below is in the source file named SOURCE.

Testing the System Date

1. Sign on to the System i and display a command entry line.
2. Enter the following command to add the product library to your library list.

ADDLIBLE OVRSYSDATE

Use the following commands to retrieve date and time values before you apply an override. Each of these requests should return the current system date and time information.

- Enter the following command to call a CL program that retrieves several current system values and then sends a message to your job log indicating the values returned.

CALL RTVSVAL

- The ILEDATE CL program uses the ILE routine to retrieve the current system date and time and then sends a message to your job log indicating the values returned. Use the following command to call the program:

CALL ILEDATE

- Enter the following command to call a CL program that runs two IBM date APIs and returns messages to the job log about the results.

CALL APITEST

- The convert date API (QWCCVTDT) retrieves the current date and return it in YYYYMMDD formats.
- The retrieve system value API (QWCRSVAL) retrieves the system date and time.
- The following programs demonstrate the results of the COBOL ACCEPT statement. The first program uses the original program model (OPM) and the second program uses ILE COBOL. Messages are sent to the job log showing results.

CALL CBLDATE

CALL CBLLEDATE

Overriding the Date System Value

1. To see how AnyDate can override the dates you retrieved, issue the following command to override the system value:

```
OVRSYSDATE YEAR(1999) MONTH(12) DAY(31) TIME(235800)
```

This creates an override for 12/31/1999 11:58:00 PM.

2. Now, repeat the commands you entered previously:

```
CALL RTVSVAL
```

```
CALL ILEDATE
```

```
CALL APITEST
```

```
CALL CBLDATE
```

```
CALL CBLLEDATE
```

The returned dates all should indicate December 31, 1999. Wait about two minutes and repeat the process. The returned dates now should indicate January 1, 2000.

3. To test submitted jobs, issue the following command and verify that it uses the date override.

```
SBMJOB CMD(DSPSYSVAL QDATE OUTPUT(*PRINT))  
LOG(4 00 *SECLVL)
```

When the job completes, enter the WRKSBMJOB command and locate the job. Look at the job's output and job log and verify that the date override is in place.

```
WRKJOB OPTION(*DFNA)
```

Locate the job date information and verify the job date has been changed.

4. Enter the following command to delete the date override.

```
DLTDATEOVR
```

5. Repeat the program calls, submit job, and WRKJOB steps listed above. All date overriding should be eliminated and you should see the "true" system date.

■ Introduction

AnyDate uses two simple commands, OVRSYSDATE and DLTDATEOVR. The Override System Date (OVRSYSDATE) command initiates the simulated date using the date and time parameters you enter. The Delete Date Override (DLTDATEOVR) command ends the simulation.

■ OVRSYSDATE

OVRSYSDATE works by registering a date override program with the operating system. When the OVRSYSDATE command is run, the difference between the “actual” system clock and the target date/time value is calculated. This offset is stored for later use. The job is then “re-configured” so that system calls to the date retrieval and conversion routines are passed to the OVRSYSDATE date override program. This occurs only for the job running the OVRSYSDATE command—other jobs on the system are not affected.

After the override is established, subsequent requests for the system date and time will be made to the OVRSYSDATE programs. These programs get the actual system clock value, add (or subtract) the stored offset, and then use the i5/OS conversion programs to return the “converted” date or time value. As the system clock advances, so does the “override” value.

If the override was created with TYPE(*STATIC) specified, the apparent system date/time value does not advance. Instead, each request for the date or time returns the value you specified on the OVRSYSDATE command.

If you specified MSG(*YES) on the OVRSYSDATE command, a message is written to the job log each time the date value is overridden. The message indicates both the true system clock value and the override value returned to the job.

The job date value is different from the system date. When a job starts, the system queries the clock value and assigns the current date to the job. The value is stored in one of the job’s internal structures and is not changed during the remaining life of the job. Whenever routines want access to the job date, the job definition is queried and the date acquired. If the OVRSYSDATE command specifies OVRJOB(*YES), the job’s date is changed to the date specified on the override command.

■ DLTDATEOVR

When you run the DLTDATEOVR command, the date override program is removed and all dates return to their “normal” values.

■ Security Note

OVRSYSDATE is safe to run at all security levels of the operating system (including security level 40 and 50).

■ Additional Considerations

As described above, AnyDate works by “intercepting” requests to the system date and time routines and returning the simulation value instead of the actual system clock value. Although it is rare, it is possible for programs to access the actual system clock instead of using the standard system routines. When this happens, there is no opportunity for AnyDate to intercept the request and the current clock value will be used by the program.

This type of activity can occur in the following situations:

Any MI program that uses the Materialize Machine Attributes (MATMATR) opcode. Unless you write or use MI programs, you do not need to be concerned about this.

Some i5/OS programs. Messages in the job message queue, journal entries, the WRKACTJOB display, and probably a few other instances will continue to show the current clock value instead of the override value. Remove the reference to the WRKACTJOB.

SQL statements that refer to the current date, current time, or current timestamp special registers.

Dates will not be overridden for query/400 definitions (*QRYDFN).

OVRSYSDATE intercepts SBMJOB requests by registering an override program with the QIBM_QCA_CHG_COMMAND exit point. Use WRKREGINF to determine if there is already a registered program that is not OVRCHGCMD in library OVRSYSDATE (Exit Program Number 33811067); if so, the OVRSBMJOB parameter (below) cannot be processed and submitted jobs will not have an overridden date. To ensure that submitted jobs will always have a date override in place regardless of the state of the exit point, you can use the OVREXEC command to ‘wrap’ an OVRSYSDATE request around the command to be submitted. For example:

```
SBMJOB CMD(OVREXEC CMD(DSPSYSVAL SYSVAL(QTIME))  
TIME(121314))
```

■ Upgrade from AnyDate Version 1 Considerations'

This submits a job to batch that first overrides the TIME to 12:13:14 and then runs the DSPSYSVAL command. The output from the submitted job will always show the overridden time value and is not affected if a different exit point already exists.

Note: AnyDate is unable to intercept the job initiation that occurs during the creation of group jobs. Consequently, group jobs started after OVR-SYSDATE is issued will not have a date override in place. If you want the group jobs to have an override, you must run OVRSYSDATE after the group job is established.

AnyDate version 2 creates required objects in QTEMP that must not be deleted.

OVRSYSDATE (Override System Date) Command

The OVRSYSDATE command establishes a system date override for the current job. You specify an initial override value for the year, month, day, and time of the system clock. Your override value is used as the starting value for all of the job's subsequent references to the system date and time. If the override is TYPE(*STATIC), the date and time returned by the system remains at the value you indicate.

The System i system clock is limited to representing dates in a 143 year range. Consequently, the override value must represent a date between 12:03:07 August 23, 1928 and 11:56:53 May 10, 2071. If the override clock value reaches its limit it remains at the limit, and does not “roll over” to values at the beginning or end of the clock capability.

To remove the override, use the DLTDATEOVR command.

```

Override System Date and Time (OVRSYSDATE)

Type choices, press Enter.

Year value . . . . . YEAR          *CURRENT
Month . . . . . MONTH            *CURRENT
Day . . . . . DAY                 *CURRENT
Time (hhmmss or 'hh:m:ss') . . . TIME *CURRENT
Date offset (yyyymmdd) . . . . . DATEOFFSET *NONE
Time offset (hhmmss) . . . . . TIMEOFFSET *NONE
Override type . . . . . TYPE       *ADVANCE
Emit override messages . . . . . MSG   *YES
Override job date also . . . . . OVRJOB *YES
Override submitted jobs . . . . . OVRSBMJOB *YES

Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
    
```

The OVRSYSDATE parameters are as follows:

- YEAR** Specifies the target year. Use a numeric value between 1928 and 2071, or *CURRENT to identify the current year.
- MONTH** Specifies the target month. Use a numeric value between 1 (January) and 12 (December), or *CURRENT to identify the current month.
- DAY** Specifies the target day. Use a numeric value between 1 and 31 or *CURRENT to identify the current day. Days outside the allowed range for the indicated month are treated as though they are part of the following month. (June 31 is treated as July 1)
- TIME** Specifies the target time . Use a numeric value in the format of *hhmmss*, *hh:mm:ss*, or *CURRENT.

DATEOFFSET

Specifies an offset to be applied from the indicated date. Use a positive or negative value in the form *yyymmdd* to indicate a number of years, months, and days. This offset is applied to the date specified by the YEAR, MONTH, and DAY parameters.

TIMEOFFSET

Specifies an offset to be applied from the indicated time. Use a positive or negative value in the form *hhmmss* to indicate a number of hours, minutes, and seconds. This offset is applied to the time specified by the TIME parameter.

TYPE

Indicates whether the override will cause the indicated value always to be returned or if the apparent date/time will advance with the system clock. Valid values are:

*ADVANCE

The apparent date/time will advance as the system clock advances.

*STATIC

All requests for date and time values will return the indicated value. The apparent time and date do not change.

MSG

Indicates whether a low-level message should be sent to the job log each time the system date value is overridden to a replacement value. Use the parameter to help you avoid confusion.

*YES An override message will be sent to the job log.

*NO An override message will not be sent to the job log.

OVRJOB

Indicates whether the job date should be changed to reflect the same system date.

*YES The job date should be changed.

*NO The job date should not be changed.

OVRSBMJOB

Indicates whether jobs submitted by this job should also have a system date override in place. This is accomplished by intercepting the submit job request. An OVRSYSDATE command is added before the request message specified on the SBMJOB command and a DLTDATEOVR command is added following it. Thus, three requests are processed by the batch request handler rather than the one indicated on the submit job command.

*YES Submitted jobs should use the same override value. This value cannot be processed if another program has already been registered for the QIBM_QCA_CHG_COMMAND exit point (see Additional Considerations earlier in this user guide, for details).

*NO Submitted jobs use the actual system clock

OVREXEC (Override Command Execution) Command

Use the OVREXEC command to ‘wrap’ an OVRSYSDATE request around the command to be submitted.

```

Override Command Execution (OVREXEC)

Type choices, press Enter.

Command to run . . . . . _____

Year value . . . . . YEAR          *CURRENT
Month . . . . . MONTH            *CURRENT
Day . . . . . DAY                *CURRENT
Time (hhmmss or 'hh:m:ss') . . . . TIME    *CURRENT
Date offset (yyyymmdd) . . . . . DATEOFFSET *NONE
Time offset (hhmmss) . . . . . TIMEOFFSET  *NONE
Override type . . . . . TYPE        *ADVANCE
Emit override messages . . . . . MSG       *YES
Override job date also . . . . . OVRJOB    *YES
Override submitted jobs . . . . . OVRSBMJOB *YES
Delete override afterward . . . . . DLTDATEOVR *NO
Request data or command . . . . . RQSDTA   *CMD

More...
F3=Exit  F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display  F24=More keys
    
```

The command has the same parameters as OVRSYSDATE, plus three additional parameters:

CMD Enter the command you want to execute. This is similar to using the CMD parameter of the SBMJOB command.

DLTDATEOVR Controls whether the date override is deleted after successful completion of the command.

***YES** The date override is deleted.

***NO** The date override is left in place.

RQSDTA Specifies the request data that is placed as the last entry in this job’s message queue. The request data can be a CL command to be run or a string of characters used by another program.

***CMD** The input from the Command to run (CMD) parameter is placed in this job’s message queue.

***NONE** No request data is placed in the job’s message queue.

character-value Specify the character string that is placed as the last entry in the submitted job’s message queue. A maximum of 3000 characters can be entered, enclosed in apostrophes if necessary.

Note: AnyDate does not support the special value ‘*JOBID’ for the RQSDTA parameter.

Note: Remember, you do not use submit job (SBMJOB) on the OVREXEC CMD parameter. You submit the OVREXEC command like so:

```
SBMJOB CMD(OVREXEC CMD(DSPSYSVAL SYSVAL(QTIME)) TIME(121314))
```

DLTDATEOVR (Delete Date Override) Command

The DLTDATEOVR command removes any system date override established for the current job. The command has no parameters. Future references by the job to the system date and time return the actual values from the system clock.

If OVRJOB(*YES) was specified on the OVRSYSDATE command and the job's date value was changed, the job date returns to the system date value as well. If OVRJOB(*NO) was specified, the job date does not change.

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