

# IBM i System Values Guide



# WORKING WITH SYSTEM VALUES IN I5/OS

## INTRODUCTION

System values are attributes that define critical aspects of the I5/OS environment, enabling us to customize operating system functions. Certain system values control system performance. Others define logging behavior, while yet others provide the defaults to command options that were left unspecified.

Many system values come predefined by the operating system.

All system value names begin with the letter Q. The type for system values is \*SYSVAL.

A user must have proper authority to change a system value.

Be sure you understand the consequences before changing any system value. If you aren't sure about the possible results, check your IBM reference manuals or refer to IBM support.

## BASIC COMMANDS

The same commands work for all system values.

The Work with System Values command, WRKSYSVAL, shows a list of system values. For example, to list all of the system values, enter the command WRKSYSVAL SYSVAL(\*ALL). To view the system control values, enter the command WRKSYSVAL SYSVAL(\*SYSCTL).

```

Work with System Values
System: S065C59R
Position to . . . . . Starting characters of system value
Subset by Type . . . . . *SYSCTL F4 for list

Type options, press Enter.
2=Change 5=Display

Option System
Value Type Description
- QABNORMSW *SYSCTL Previous end of system indicator
- QALWJOBITP *SYSCTL Allow jobs to be interrupted
- QASTLVL *SYSCTL User assistance level
- QATNPGM *SYSCTL Attention program
- QAUTOCFG *SYSCTL Autoconfigure devices
- QAUTORMT *SYSCTL Autoconfigure of remote controllers
- QAUTOSPRPT *SYSCTL Automatic system disabled reporting
- QAUTOVRT *SYSCTL Autoconfigure virtual devices
More...

Command
==>
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F11=Display names only
F12=Cancel

```

We use the Display System Value command, DSPSYSVAL, to display a system value. For example, to display the model number, enter the command DSPSYSVAL SYSVAL(QMODEL). To display the console name, we enter the command DSPSYSVAL SYSVAL(QCONSOLE).

```

Display System Value

System value . . . . . : QCONSOLE
Description . . . . . : Console name

Console name . . . . . : DSP01 Device description

Press Enter to continue.

F3=Exit F12=Cancel

```

To change a system value, we use the CHGSYSVAL command. The CHGSYSVAL command allows us to change the current value of a specific system value by entering the new value in the VALUE parameter. For example, the QMCHPOOL system value controls the size of the machine storage pool, which is used by frequently shared licensed programs. We can change the size to 582688K by entering the command CHGSYSVAL SYSVAL(QMCHPOOL) VALUE(582688).

```
Selection or command
====> CHGSYSVAL SYSVAL(QMCHPOOL) VALUE(582688)

F3=Exit   F4=Prompt   F9=Retrieve   F12=Cancel   F13=Information Assistant
F23=Set initial menu
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```

Note that there are special user privileges necessary for certain administration functions. Some of these special user privileges may be required to alter certain system values. The main special authorities are \*ALLOBJ, which allows unlimited access to everything; \*SECADM, which allows administration of user profiles; \*SAVSYS, which is for saving and restoring system tasks; \*JOBCTL, which allows manipulation of job queues and subsystems; and \*SPLCTL, which allows control of spool functions.

## SECURITY LEVELS

The System Security Level value, QSECURITY, specifies the level of security to be enforced on the system. To display the system's current security level, issue the command DSPSYSVAL SYSVAL(QSECURITY).

```
3. General system tasks
4. Files, libraries, and folders
5. Programming
6. Communications
7. Define or change the system
8. Problem handling
9. Display a menu
10. Information Assistant options
11. IBM i Access tasks

90. Sign off

Selection or command
====> DSPSYSVAL SYSVAL(QSECURITY)

F3=Exit   F4=Prompt   F9=Retrieve   F12=Cancel   F13=Information Assistant
F23=Set initial menu
```

The IBM i currently supports four levels of security; in order of increasing security, these levels are 20, 30, 40, and 50. By default, an IBM i has the security level set at 40. The 40 level is arguably the optimum security level, as it is sufficient for most routine uses of the IBM i system.

There are few substantial differences between level 40 and level 50, the highest level of security. Level 50 was originally implemented by IBM to enable the system to comply with the Department of Defense C2 requirements. The chief difference between levels 40 and 50 is that at level 50 the system validates parameters.

Security level 20 is the lowest possible security level we can set on the IBM i. Security level 20 allows us to control who can sign on to the system, and that's about it. By default, resource security is not implemented at level 20. When there is no resource security, any user who can sign onto the system has authority to all objects and therefore modify or delete any object.

Security level 30 implements resource security, which allows objects to be accessed only by users who have authority to them. At level 30 and above, users do not receive \*ALLOBJ authority by default, meaning that when a user requests an object, multiple levels of object authority go into effect. Only a limited number of users should have all object authority to the system. Typically, \*ALLOBJ authority is limited to the system security profile, QSECOFR, and perhaps a few other security profiles.

Security levels 40 and 50 add operating system integrity authority. Security is strengthened at level 40 and above chiefly by preventing restoration of invalid or modified programs, validating job initiation authority, and by providing program states and object domains. At levels 40 and 50 users are prevented from accessing system objects, such as internal programs.

```
Display System Value

System value . . . . . : QSECURITY
Description . . . . . : System security level

System security level . . . : 40    10=Physical security only (no longer
                                   supported)
                                   20=Password security only
                                   30=Password and object security
                                   40=Password, object, and operating
                                   system integrity
                                   50=Password, object, and enhanced
                                   operating system integrity
```

Again, security level 40 is adequate for most purposes. Security level 30 should be considered the bare minimum.

To change the system security level to 30, type in the command `CHGSYSVAL SYSVAL(QSECURITY) VALUE('30')`. Note that the level number is enclosed in single quotes. To alter the QSECURITY system value, we must be logged in as a user who has both \*ALLOBJ and \*SECADM special authority.

Any change to the QSECURITY value will only take effect after performing an IPL of the system. To perform an IPL, issue the command `PWRDWN SYS RESTART(*YES)`. When IPL completes, the system will be running under the new security level.

To display all of system security values, enter the command `WRKSYSVAL SYSVAL(*SEC)`. The \*SEC values are a group of system values used to define global security settings.

As an example of another \*SEC system value, QDSPSGNINP controls the display of user sign on information; this value can be set to either 1 or 0. A value of 1 causes the system to display the Display Sign on Information screen, which includes the number of failed login attempts and the last date and time of a successful login. By default this value is set to 0. To view the current setting for QDSPSGNINP, issue the command `DSPSYSVAL SYSVAL(QDSPSGNINP)`.

## GENERAL SECURITY SYSTEM VALUES

The general security-related system values provide a variety of system-level security functions. We can view all of the security system values by entering the command `WRKSYSVAL SYSVAL(*SEC)`.

```

Work with System Values
System: S065C59R
Position to . . . . . Starting characters of system value
Subset by Type . . . . . *SEC F4 for list

Type options, press Enter.
2=Change 5=Display

System
Option Value Type Description
  QALWOBJRST *SEC Allow object restore option
  QALWUSRDMN *SEC Allow user domain objects in libraries
  QAUDCTL *SEC Auditing control
  QAUDENDACN *SEC Auditing end action
  QAUDFRCLVL *SEC Force auditing data
  QAUDLVL *SEC Security auditing level
  QAUDLVL2 *SEC Security auditing level extension
  QCRTAUT *SEC Create default public authority
More...

Command
====>
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F11=Display names only
F12=Cancel

```

The Allow Restoring of Security-Sensitive Objects security system value, QALWOBJRST, determines whether objects that are security-sensitive are allowed to be restored to the system. Use it to prevent anyone from restoring a system state object or an object that adopts authority. To view this value, enter the command DSPSYSVAL SYSVAL(QALWOBJRST). The default value of \*ALL will let any object, including security-sensitive objects, to be restored by a user with the appropriate authority. Entering the value of of \*NONE will prevent restoration of either system state objects or programs that adopt authority. To allow users to restore system state objects, but not programs that adopt authority, we issue the command CHGSYSVAL SYSVAL(QALWOBJRST) VALUE(\*ALWSYSSTT). To allow restoration of programs that adopt authority, but not system state objects, we run the command CHGSYSVAL SYSVAL(QALWOBJRST) VALUE(\*ALWPGMADP).

The Create Authority system value, QCRTAUT, specifies the default public authority. Any new public object created with the authority set to \*SYSVAL, which is the default, will reference the value set in QCRTAUT. The public authority values consist of \*CHANGE, \*ALL, \*USE, and \*EXCLUDE. The default value for the QCRTAUT system value is \*CHANGE. To view the current value, we issue the command DSPSYSVAL SYSVAL(QCRTAUT). Security auditors may ask for the QCRTAUT value to be set to \*USE, which allows users to view, but not change, newly created objects. Be aware that existing objects are unaffected by a change to the QCRTAUT value. Note that you must have \*ALLOBJ and \*SECADM special privileges to change the QCRTAUT system value.

To view the Create Authority system value, we enter the command `DSPSYSVAL SYSVAL(QCRTAUT)`.

```
Display System Value

System value . . . . . :   QCRTAUT
Description . . . . . :   Create default public authority

Create default public
authority . . . . . :   *CHANGE          *CHANGE
                                     *ALL
                                     *USE
                                     *EXCLUDE
```

The `QALWOBJRST` system value decides if objects that are security-sensitive are allowed to be restored to the system. Setting the `QALWOBJRST` security system value to `*NONE` allows us to have maximum control over the restoration of system state objects and programs that adopt authority. Note, however, that before installing a new licensed product, applying PTFs, or recovering the system, we should change the `QALWOBJRST` system value to `*ALL`. Otherwise, those operations may fail. Setting `QALWOBJRST` to the `*ALWPTF` value would allow restoring security-sensitive objects as part of a PTF, but reports from the field indicate that this does not always work as intended.

```
Display System Value

System value . . . . . :   QALWOBJRST
Description . . . . . :   Allow object restore option

Restore options          Restore
options                  options
*ALL
```

The `QPWDEXPITV` system value defines the number of days for which a password is valid. To view this value, we enter the command `DSPSYSVAL SYSVAL(QPWDEXPITV)`. The value can be between 1 and 366, or else set to `*NOMAX`.

The `QMAXSIGN` system value specifies the number of invalid sign-on attempts that are allowed before the device is varied off. The initial value is set to 15. The `QMAXSGNACN` system value determines what action is performed when the number of unsuccessful attempts at signing onto the system is passed. The `QMAXSGNACN` system value can take one of three values: 1 disables the device only, 2 disables the user profile only, 3 disables both the user profile and the device.



The Remote Sign-on Value, QRMTSIGN, determines how our system handles any automatic passthrough request that it receives. The default value for QRMTSIGN is \*FRCSIGNON, which requires the user to go through the normal signon procedure when accessing the IBM i remotely. To allow the bypass signon feature for IBM's Client Access software, we should set QRMTSIGN to \*VERIFY. If the value is not set to \*VERIFY, we will not be able to bypass the signon display. Note that automatic passthrough requests must contain a valid user profile and the valid password for that profile.

The Limit Device Sessions security system value, QLMTDEVSSN, determines if a user can have more than one workstation occurring at one time. A value of 0 allows a user profile to work at more than one workstation simultaneously. The initial value for QLMTDEVSSN is 0, which allows users to sign on to more than one device. To limit users to only one session, we issue the command CHGSYSVAL SYSVAL(QLMTDEVSSN) VALUE('1').

```
Selection or command
====> CHGSYSVAL SYSVAL(QLMTDEVSSN) VALUE('1')
```

---

```
F3=Exit    F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
```

The Inactive Job Time-out Interval system value, QINACTITV, controls the inactive job time-out interval. The initial value is \*NONE. We can set the value to any length of time between 5 and 300 minutes. Note that FTP jobs are not covered under this system value.

```
Display System Value

System value . . . . . : QINACTITV
Description . . . . . : Inactive job time-out

Time-out interval in
minutes . . . . . : *NONE          *NONE, 5-300
```

The Allow User Domain Objects in These Libraries system value, QALWUSRDMN, specifies which libraries allow user domain objects to be located in them. User domain objects include those of type User Index, \*USRIDX, User Queue, \*USRQ, and User Space, \*USRSPC. The default value for QALWUSRDMN is \*ALL; removing \*ALL requires the definition of the libraries that we want to allow user domain objects to be created in, such a list must include QTMP. It might also be a good idea to include library QRPLOBJ.

The Automatic Virtual Device Creation system value, QAUTOVRT, controls the number of virtual devices configured for pass-through in a remote communications environment. A

virtual device is simply a device description that does not have hardware associated with it. To allow the maximum number of virtual devices to be created, we use the special value \*NOMAX and issue the command CHGSYSVAL SYSVAL(QAUTORVT) VALUE(\*NOMAX).

## AUDITING, LOGGING, AND MESSAGING VALUES

The QAUDLVL system value determines what is logged in the audit journal. To turn off the audit function, specify \*NONE. To log authority failure events, specify \*AUTFAIL. Specify \*CREATE to log when objects are created. \*SAVRST tracks restore operations. Specify \*DELETE to log when objects are deleted. \*SECURITY logs security changes and related functions. Specify \*JOBDTA to log job start, stop, and disposition information. Note that \*NONE is the default value.

For example, to audit whenever an object is created or deleted, we would issue the command CHGSYSVAL SYSVAL(QAUDLVL) VALUE(\*CREATE \*DELETE').

```
Selection or command
==> CHGSYSVAL SYSVAL(QAUDLVL) VALUE(*CREATE *DELETE')
F3=Exit   F4=Prompt   F9=Retrieve   F12=Cancel   F13=Information Assistant
F23=Set initial menu
List or expression not valid for parameter VALUE. +
```

The QAUDLVL2 system value is a security auditing level extension. It is used when more than 16 values are needed. Simply specify \*AUDLVL2 as one of the values for the QAUDLVL system value to have the system also look for auditing values in QAUDLVL.

We can view all the message-related system values by entering the command WRKSYSVAL SYSVAL(\*MSG).

```

Work with System Values
System: S065C59R
Position to . . . . . Starting characters of system value
Subset by Type . . . . . *MSG F4 for list

Type options, press Enter.
2=Change 5=Display

Option System Value Type Description
- QACGLVL *MSG Accounting level
- QCFGMSGQ *MSG Configuration message queue
- QHSTLOGSIZ *MSG Maximum history log records
- QLOGOUTPUT *MSG Job log output
- QPRBFTR *MSG Problem log filter
- QPRBHDITV *MSG Problem log hold interval
- QPRTTXT *MSG Print text
- QSFWERLOG *MSG Software error logging

More...

Command
==>
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F11=Display names only
F12=Cancel

```

The QINACTMSGQ value defines a message queue to receive messages about a workstation when the inactive time interval has been reached. A message queue is like a mailbox.

The QJOBMSGMX system value specifies the job message queue maximum size.

The system value QHSTLOGSIZ controls the maximum size limit of a history log file. The history log consists of a message queue and system files that store history messages. The log files belong to library QSYS and begin with the letters QHST.

## DATE AND TIME VALUES

The date and time values, \*DATTIM, lets us view, set, and change the date and time the system stores and makes available to applications and utilities.

We can view all of the date and time system values by entering the command WRKSYSVAL SYSVAL(\*DATTIM).

```

Work with System Values
System: S065C59R
Position to . . . . . Starting characters of system value
Subset by Type . . . . . *DATTIM F4 for list

Type options, press Enter.
2=Change 5=Display

Option System
Value Type Description
| QCENTURY *DATTIM Century
- QDATE *DATTIM System date
- QDATETIME *DATTIM System date and time
- QDAY *DATTIM Day
- QDAYOFWEEK *DATTIM Day of week
- QHOUR *DATTIM Hour of the day
- QLEAPADJ *DATTIM Leap year adjustment
- QMINUTE *DATTIM Minute of the hour
More...

```

The system value that holds the current date for the system is QDATE. The QDATE value includes the day, month, and year. To see the current date on the system, run the command DSPSYSVAL SYSVAL(QDATE). The day, month, and year are set individually by the subvalues QDAY, QMONTH, and QYEAR, respectively. We can also view what current century the IBM i platform thinks it is via the QCENTURY system value.

The current time of day is stored in the QTIME system value. Time can be further divided into QHOUR, QMINUTE, and QSECOND. The current system time as an offset of Coordinated Universal Time (UTC) is set in the system value QUTCOFFSET.

The system date and time are stored in the value QDATETIME. To see both the current date and time, run the command DSPSYSVAL SYSVAL(QDATETIME).

```

Display System Value

System value . . . . . : QDATETIME
Description . . . . . : System date and time

Date . . . . . : 06/21/2017 MM/DD/YYYY
Time . . . . . : 17:41:12 HH:MM:SS

Time zone abbreviated
name . . . . . : CDT Name

```

The day of the week is defined by the system value QDAYOFWEEK; therefore, to see what day of the week it is, we would issue the command DSPSYSVAL.

SYSVAL(QDAYOFWEEK). The days of the week are indicated by the special values \*SUN, \*MON, \*TUE, \*WED, \*THU, \*FRI, and \*SAT.

We can change the date and time system values using the CHGSYSVAL command, for which we need to specify two parameters, the first being the name of the system value we wish to change, and the second being the value we wish to change it to. To change the current year on the system, we would issue the command CHGSYSVAL SYSVAL(QYEAR) followed by the VALUE parameter, and the year we wish to set QYEAR to. For example, we could travel into the future by setting the date to the year 2042 by issuing the command CHGSYSVAL SYSVAL(QYEAR) VALUE('42'). Note that we place the year value in single quotation marks.

We can modify the entire date at once by changing the system value QDATE. However, before changing QDATE using the CHGSYSVAL command, we should check the Date Format system value, QDATFMT. The QDATFMT system value determines the format in which a date can be specified. To view the date format, let's issue the command DSPSYSVAL SYSVAL(QDATFMT).

```
Display System Value
System value . . . . . : QDATFMT
Description . . . . . : Date format

Date format . . . . . : MDY      YMD, MDY, DMY, JUL
```

In the United States and outlying territories, this value will be MDY, indicating that the date format is month, day, and then year. So, to change the date to April 21, 2017, we would issue the command CHGSYSVAL SYSVAL(QDATE) VALUE('042117'). Note again that we place the date value in single quotation marks.

The system time is stored in QTIME and related subvalues. We can change the time to 5 PM, for instance, by issuing the command CHGSYSVAL SYSVAL(QHOUR) VALUE('17'). We should note well that the system value for time is set in 24-hour increments. The QTIME system value is six characters in length, and follows the format hours-minutes-seconds. Therefore, if we wanted to change the time to 5:20 in the morning, we would issue the command CHGSYSVAL SYSVAL(QTIME) VALUE('052000').

## IPL-RELATED SYSTEM VALUES

Starting an IBM i is referred to as an initial program load, abbreviated IPL. There are three types of IPL that can be performed. The first type is an unattended IPL, which does not require an operator or any other user to be present. An unattended IPL uses the default IPL and system options to start the system. We can view the default IPL options using the Display IPL attributes command, DSPIPLA. The second type of IPL is the attended IPL, which requires an operator to be present. During an attended IPL, certain system options can be modified during the IPL process. The third type is an automatic IPL, which is similar to an unattended IPL, but occurs as a result of special circumstances, such as a power failure, or as a remote IPL.

There are several system values that determine the IPL process.

The QIPLSTS system value describes the way the system performed the last IPL. This value cannot be changed; it can only be displayed. To view this value, enter the command DSPSYSVAL SYSVAL(QIPLSTS).

The QIPLTYPE system value defines the type of IPL the system will perform when the partition is powered on manually during a normal IPL. If QIPLTYPE is set to 0, the system will perform an unattended IPL. If QIPLTYPE is set to 1, the system will perform an attended IPL with dedicated service tools. This option is useful when performing an upgrade or maybe when attempting to diagnose a problem. The third option is 2, which is an attended IPL in debug mode. This mode leaves the controller QCTL and device QCONSOLE varied on after an IPL. QIPLTYPE should really be set to 2 only at the direction of an IBM support technician. The default value for QIPLTYPE is 0.

The QABNORMSW system value indicates how the system last ended. This system value can be either a 0, indicating the system ended normally, or 1, indicating that the system ended abnormally. To view how the previous ending was handled, enter the command DSPSYSVAL SYSVAL(QABNORMSW).

```
Display System Value
System value . . . . . : QABNORMSW
Description . . . . . : Previous end of system indicator

Previous end . . . . . : 0          0=Normal
                          1=Abnormal
```

The QRMTIPL system value determines whether a remote system can start the IBM i. Enter DSPSYSVAL SYSVAL(QRMTIPL) to display the value set for this system value. A

value of 0 indicates that a remote system cannot start the IBM i, and a value of 1 indicates that a remote system can start the IBM i. Note that even if QRMTIPL is set to 1, a remote system can only restart the IBM i if it is powered down.

The QPWRRSTIPL system value determines if the system will automatically restart itself after a power failure. If QPWRRSTIPL is set to 1, then the system will restart itself; if it is set to 0, then the system will not restart itself.

```
Display System Value

System value . . . . . : QPWRRSTIPL
Description . . . . . : Automatic IPL after power restored

Auto-IPL after power
restored . . . . . : 1          0=Not allowed
                                   1=Allowed
```

The QPWRDWNLMT system value controls how long the system waits for jobs to finish when executing the PWRDWN SYSVAL(QPWRDWNLMT) command. We can check this value by issuing the command DSPSYSVAL SYSVAL(QPWRDWNLMT). The default for this system value is 600 seconds, which is 10 minutes. Note that if jobs are still executing when this time interval expires, the system will perform an abnormal system termination, and set QABNORMSW to 1.

The QUPSDLYTIM system value controls the length of time the system will wait before saving main storage and powering down the system in the event of a power failure. The default value is \*CALC, which means that the wait time is calculated based on the system configuration. Note that leaving QUPSDLYTIM set to \*CALC may defeat the purpose of having a UPS, as the system will essentially begin a controlled shutdown after a short fixed interval delay, typically 200 seconds.

```
Display System Value

System value . . . . . : QUPSDLYTIM
Description . . . . . : Uninterruptible power supply delay time

Delay time . . . . . : *CALC          *CALC, *BASIC, *NOMAX, 0-99999
Delay value in seconds : 200
```

We can change the powerdown wait time to 10 minutes by entering the command CHGSYSVAL SYSVAL(QUPSDLYTIM) VALUE('600').

```
Selection or command
====> CHGSYSVAL SYSVAL(QUPSDLYTIM) VALUE('600')
-----
F3=Exit   F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
VALUE parameter not correct for system value QUPSDLYTIM.
```

The QIPLDATTIM system value determines the date and time when the system will IPL itself automatically. To display when, if ever, the system is scheduled for an automatic IPL, enter the command DSPSYSVAL SYSVAL(QIPLDATTIM). The default value for QIPLDATTIM is \*NONE. The QIPLDATTIM system value will have the system perform an IPL if it is in a shutdown state. We can IPL the system automatically at a specified date and time by setting the system value QIPLDATTIM to a specific date and time.

Generally speaking, it's better to use the submenus found under Power On and Off Tasks menu to define the QIPLDATTIM system value. To access the Power On and Off Tasks menu, issue the GO POWER command.

The controlling subsystem stays active even when all other subsystems are shut down for backups. The only time the controlling subsystem is shut down is when a PWRDWN SYS command has been successfully completed. QCTLSBSD contains the qualified name of the controlling subsystem description.

The initial value for QCTLSBSD is QBASE, which is more than adequate for smaller, less complex systems. With this setup, practically all work, including interactive and batch jobs, is performed by the QBASE subsystem.

## SYSTEM CONTROL VALUES

System control values let us define or acquire certain controlling values of the OS. The operator console name, QCONSOLE, contains the name of the console. The QASTLVL system value shows the level of assistance. We can use the Assistance level value, QASTLVL, to specify the level of assistance given to the system users by tailoring the level of displays shown to them. The three levels are \*BASIC, \*INTERMED, and \*ADVANCED.



```
Display System Value

System value . . . . . : QASTLVL
Description . . . . . : User assistance level

Assistance level . . . : *INTERMED      *BASIC
                        *INTERMED
                        *ADVANCED
```

The \*BASIC level is for more inexperienced users. The basic assistance level supports common user and operator tasks via the Operational Assistant menu and keeps technical jargon to a minimum. The \*BASIC level does not, however, allow for full access to system functions.

The \*INTERMED level supports all system tasks and uses terminology that should be familiar to anyone with a general IT background. The \*ADVANCED level is for the most part the same as the \*INTERMED level, but it displays as much information as possible and omits the allowed function keys and options.

The QMODEL system value holds the system model number and cannot be modified. The QSRLNBR system value holds the pre-loaded serial number. We can view the QMODEL value by issuing the command DSPSYSVAL SYSVAL(QMODEL).

The QRMTSIGN system value specifies whether a remote sign-on is allowed. The QRMTSIGN system value also tells the IBM i what to do when a client wants to log on remotely. We can view the QRMTSIGN system value by issuing the command DSPSYSVAL SYSVAL(QMODEL); by default, QRMTSIGN is set to Forced Signon, \*FRSIGNON, which requires all remote signons to go through the normal signon procedure. The \*SAMEPRF value makes the sign on display able to be bypassed, if requested, when the source and target user profile number are the same. The \*VERIFY value for QRMTSIGNON allows the sign-on display to be bypassed if valid security information is sent with the automatic sign-on request.

The QTOTJOB system value indicates the total number of jobs that can be started; this affects performance.

```
Display System Value

System value . . . . . : QTOTJOB
Description . . . . . : Initial total number of jobs

Initial jobs . . . . . : 500          1-32767
```

We can view all the system control values by entering the command WRKSYSVAL SYSVAL(\*SYSCTL).

## SUMMARY

System values, \*SYSVAL, allow each installation to customize the system to the organization's own needs and specifications.

Only users such as QSYSOPR with all object authority, \*ALLOBJ, can modify system values. In addition, certain system values require security administration authority, \*SECADM.

The Work with System Values command, WRKSYSVAL, lists system values.

QSECURITY is an important system value because it contains the global security level.

At security level 50, the IBM i system prevents passing invalid parameter values to system programs.

To change the QSECURITY system value, we use the CHGSYSVAL command, and then IPL the system.

The system date is contained in the value QDATE. The QYEAR system value holds only the year value. The QDATFMT system value defines how the machine will use the date value. The QTIME value represents the system time of day. It comprises three other system values, QHOUR, QMINUTE, and QSECOND.

An abnormal system termination is recorded in the system value QABNORMSW.

By default, the QCTLSBSD system value has the value QBASE.

The QSTRUPPGM system value contains the name of the program to start when IPL is complete and before system control is passed over to the users.

Using QCTL as the controlling subsystem sets up separate subsystems for batch, interactive, and communications jobs.

The security system values control certain aspects of security on the IBM i, such as the maximum number of invalid sign-on attempts allowed.

The QLMTDEVSSN security system value limits the number of concurrent device sessions.

This guide is presented as a public service by LaserVault, the creators of UBD, the Universal Backup Device for IBM Power Systems (iSeries, AS/400, System i, AIX), Windows, and Linux. UBD is a virtual tape system that gives you automated unattended backup and remote replication with emailed progress notifications.

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