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## Introduction

Control Language (CL) is a programming language used primarily for control purposes with the IBM i operating system (formerly known as OS/400 and i5/OS). Originating in the early 1980s with the System/38 and continued on the AS/400, eServer iSeries, and System i, CL has undergone a series of improvements (and still does to this day). While CL is not a general-purpose, high-level language (HLL), its flexibility does allow it to be used for much more than simple control operations.

CL is based on commands. All program statements are nothing more than commands. Many of the commands are the same ones you would use manually, from the keyboard, to operate the computer.

### Who Needs CL?

CL is for everyone. Because commands can be included in a CL program, you can automate most IBM i operations by writing a CL program that contains the necessary commands.

All IBM i shops are, by necessity, at least bilingual, because they must support at least two programming languages—and CL is one of them. The other language should be a high-level language such as COBOL or RPG.

### Who Has CL?

Because CL is part of the computer's operating system, every system that runs IBM i has CL. Because every system that runs IBM i has CL, it should be the programming language of choice for any programs that do not require the higher functions provided by high-level languages like RPG. This would allow you to take the same program to another IBM i system with 100 percent certainty that the program will be usable. Such is not the case with other programming languages, such as RPG and COBOL, because most shops install only the compilers they need or wish to use. Yet, CL is absolutely everywhere.

## Capabilities of CL

With CL you can do any of the following:

- Control system power up and power down.
- Change the configuration of the system through changes in system values or line, controller, and device descriptions.
- Manage work on the system by controlling subsystems, job queues, job priorities, memory pools, time slices, and so on.
- Start other jobs by calling programs directly or by submitting jobs to batch processing.
- Control system security by performing security checks or by actually changing user and object authorities.
- Control all forms of communications between your IBM i system and other systems (peers, hosts, PCs, remote controllers).
- Manage objects in libraries. Objects can be created, duplicated, changed, deleted, reorganized, cleared, renamed, and allocated with CL programs.

The preceding list is not all-inclusive. CL contains more than 1,000 commands with diverse functions.

## Limitations of CL

As previously noted, CL is not an HLL. CL cannot accomplish everything a language such as RPG can accomplish.

- Database manipulations are limited to reading files. You cannot use CL commands to directly update or write individual records in database files. CL procedures can call APIs and run SQL commands to interact with databases, but not with the ease that HLLs can.
- CL supports only six data types: character, decimal, logical, signed integer, unsigned integer, and pointer.