Chapter 3
The User Constraints (UCF) File

The UCF file is an ASCII file specifying constraints on the logical design. You create this file and enter your constraints in the file with a text editor. These constraints affect how the logical design is implemented in the target device. The file can also be used to override constraints specified during design entry, earlier in the design flow.
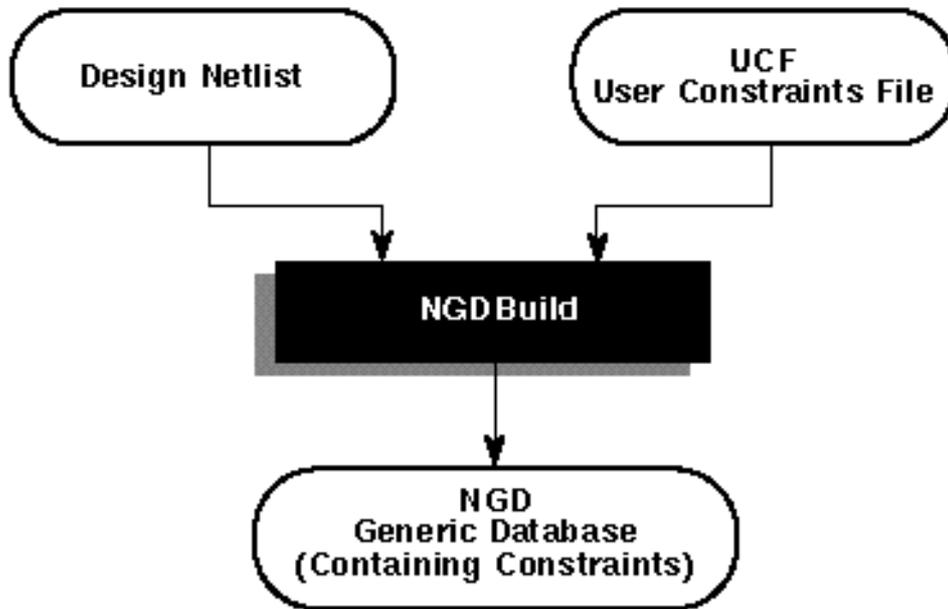
There are several types of logical constraints in the UCF file.

- Placement

- Mapping

- Timing

- BitGen

These constraints and the syntax for entering them in the UCF are described in the **"Attributes, Constraints, and Carry Logic" chapter** of the *Libraries Guide*. A more detailed description of timing constraints can be found in the **"Using Timing Constraints" chapter** of this manual.

The UCF file is an input to NGDBuild (see the **"UCF File Flow" figure**). The constraints in the UCF file become part of the information in the NGD file produced by NGDBuild. Some of these constraints are used when the design is mapped by MAP and some of the constraints are written into the PCF (Physical Constraints File) produced by MAP. The constraints in the PCF file are used by the each of the physical design tools (for example, PAR and the timing analysis tools), which are run after your design is mapped.

Figure 3-1UCF File Flow

Design Netlist

UCF
User Constraints File

NGD Build

NGD
Generic Database
(Containing Constraints)

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