

Bus Names

Nets are connected to buses based on their names. The program reads the names of nets and buses to determine connectivity. Meaningful bus identifiers make a design easier to understand. For example, you can name buses after the names of the signals they carry.

Bus names contain alphanumeric characters, and the special characters required for specifying them or iterated instances. Bus names are not case sensitive, but you can use any mixture of upper and lowercase characters for readability.

Legal Characters

The following characters can be used in bus names:

- A-Z, a-z, 0-9
- _ (underscore)

Bus Names

You can create a bus name by appending an indices (numerical sequence) to a simple name. The sequence is specified as a starting number and an ending number. The numbers are delimited by a colon (:), and the sequence is enclosed in parentheses. For example, the following standard bus name:

DATA(0:3)

represents:

DATA(0), DATA(1), DATA(2), DATA(3)

Compound Bus Names

You can also use compound names to name buses. A compound name can be a list containing more than one net name, separated by commas. Spaces are not permitted within compound names. For example, the following compound bus name:

READ,WRITE,MYNAME

represents three signals:

READ, WRITE, and MYNAME

A compound name can include other indexed bus names. For example, the following compound bus name:

CLOCK,ADDR(0:3),DATA(0:3)

represents:

CLOCK, ADDR(0), ADDR(1), ADDR(2), ADDR(3), DATA(0), DATA(1), DATA(2), DATA(3)

Note Compound buses are also called "complex buses" or "concatenated buses."

Partial Bus Names

You can also name a bus to represent only a portion of the bus. For example, a portion of the bus **A(0:4)** could be named in any of the following ways:

- **A(0)**, **A(1)**, **A(2)**, **A(3)**, **A(4)**
- **A(0:2)**, **A(3:4)**
- **A(0)**, **A(1:3)**, **A(4)**

Schematic and Symbol Editors

Net Names for Nets Connected to a Bus

When you connect a net to a bus, the following naming rules apply:

- If you are connecting to a bus named using sequential notation (for example, **data(4:0)** or **Q(7:0)**), the name for the net you are connecting must include parentheses. The names **data(3)** or **Q(0)** are valid; **data3** or **Q0** are not.
- You can create a sub-bus by giving the net you are connecting a bus specifier for a name. For example, if you are connecting to a bus named **data(3:0)** you can connect two nets (and create a sub-bus) by naming the net **data(1:0)**.

Naming a Bus

You can rename a bus or rename bus branches and nets as follows.


Note You can change a bus name to a concatenated bus name using the Rename Selected Bus command, but you must use the Rename Selected Net command to alter a concatenated bus name, as described in [Naming a Net](#).

What to Do First

Create a bus in the schematic.



To Name a Bus

1. Select a branch or sub-bus of the bus you want to rename.
2. Select **Edit > Rename > Rename Selected Bus**, or click the Rename Bus toolbar button .
3. In the [Rename Bus dialog box](#), select whether to rename the entire bus or just the branch.

4. Select entries in the Related Buses and Nets box to specify the nets and bus branches to rename.

Selected entries are highlighted. Clicking an entry toggles its selection. When you select an entry, the entry appears in the Highlight box. By expanding and collapsing the hierarchy in the Highlight box and selecting different entries, you can locate the nets and branches to rename.

5. In the New Base Name of Bus field, enter the base name for the selected nets and bus branches. The bus must be named according to the rules described in [Bus Names](#).
6. Click **Apply**.
7. Click **Close**.

Note If you choose to rename only the branch, some choices in the Rename Bus dialog box will become grayed out.