

# Register File Unit

The Register File unit (RF) has 4-inputs of which one can be selected for addressing and one as data input. In contrast to other functional units the register file does not have multiple addressable outputs. Instead, the highest output number (by default output 1) can be addressed in two ways:

- Through the instruction, as an immediate.
- Through operand B (from the data network).

The other outputs (0...N-2) are directly connected to the registers corresponding to their output number (e.g r0 -> out0). This allows for reading multiple registers from the register file at once without the cost of requiring extra read ports.

In order to store a value into a register, the data has to be available on operand A. The register where the data has to be written is specified by either an immediate in the instruction or via the data network.

It is possible to perform a read and write on different registers at once (using immediates for both operations).

Note that the outputs of the RF are not registered, therefore the result of a load is available to other units within the same cycle.

