| | CMOV* |
|---|---|
| Fetch | icode:ifun = M1[PC]<br>rA:rB = M1[PC+1]<br>valP = PC +2 |
| | |
| Decode | valA = R[rA] |
| | |
| Execute | valE = valA + 0<br>Cnd = Cond(CC, ifun) |
| | |
| Memory | |
| | |
| Writeback | R[rB] = Cnd ? valE : do nothing |
| | |
| PC Update | PC = valP |

| | IRMOVQ |
|---|---|
| Fetch | icode: ifun = M1[PC]<br>rA:rB = M1[PC+1]<br>valP = PC + 10 |
| | |
| Decode | valA= M1[PC+2] |
| | |
| Execute | valE = valA + 0 |
| | |
| Memory | |
| | |
| Writeback | R[rb] = valE |
| | |
| PC Update | PC = valP |

| | MRMOVQ | RMMOVQ |
|---|---|---|
| Fetch | icode:ifun = M1[PC]<br>rA:rB = M1[PC+1]<br>valP = PC +2<br>valC = M8[PC+2] | icode:ifun = M1[PC]<br>rA:rB = M1[PC+1]<br>valP = PC +10<br>valC = M8[PC+2] |
| | | |
| Decode | valB = R[rB] | valA = R[rA]<br>valB = R[rB] |
| | | |
| Execute | valE = valB + valC | valE = valC + valB |
| | | |
| Memory | valM = M8[valE] | M8[valE] = valA |
| | | |
| Writeback | R[rA] = valM | |
| | | |
| PC Update | PC = valP | PC=valP |

| | OPq |
|---|---|
| Fetch | icode:ifun = M1[PC]<br>rA:rB = M1[PC+1]<br>valP = PC + 2 |
| | |
| Decode | valA = R[rA]<br>valB = R[rB] |
| | |
| Execute | valE = valB OP valA<br>set CC |
| | |
| Memory | N/A |
| | |
| Writeback | R[rB] = valE |
| | |
| PC Update | PC = valP |

| | PUSHQ | CALL |
|---|---|---|
| Fetch | icode:ifun = M1[PC]<br>rA:rB = M1[PC+1]<br>valP = PC+2 | icode:ifun = M1[PC]<br>valC = M8[PC+1]<br>valP = PC + 9 |
| | | |
| Decode | valA = R[rA]<br>valB = R[%rsp] | valB = R[%rsp] |
| | | |
| Execute | valE = valB - 8 | valE = valB + (-8) |
| | | |
| Memory | M8[valE] = valA | M8[valE] = valP |
| | | |
| Writeback | R[%rsp]  = valE | R[%rsp] = valE |
| | | |
| PC Update | PC = valP | PC = valC |

| | POPQ | RET |
|---|---|---|
| Fetch | icode:ifun = M1[PC]<br>rA:rB=M1[PC+1]<br>valP=PC+2 | icode:ifun = M1[PC]<br>valP=PC+1 |
| | | |
| Decode | valA=R[rsp]<br>valB=R[rsp] | valA = R[%rsp]<br>valB = R[%rsp] |
| | | |
| Execute | valE=valB+8 | valE = valB + 8 |
| | | |
| Memory | valM=M8[valA] | valM = M8[valA] |
| | | |
| Writeback | R[rsp] = valE<br>R[rA] = valM | r[%rsp] = valE |
| | | |
| PC Update | PC=valP | PC = valM |

| | J* |
|---|---|
| Fetch | icode: ifun = M1[PC]<br>rA:rB = M1[PC+1]<br>valP = PC + 9<br>valC = M1[PC+2] |
| | |
| Decode | |
| | |
| Execute | valE = valC + 0<br>Cnd = Cond(CC, ifun) |
| | |
| Memory | |
| | |
| Writeback | |
| | |
| PC Update | PC = cnd ? valE : valP |