

declarations of network buffers, free descriptors, delay list

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netRead_handler: { # entered with interrupts inhibited
    save state of executingP;
    acquire new buffer; prepare network controller for next read;
    unpack first field of input message to determine kind;
    if (kind == CALL)
        handleRPC(caller, address, value arguments);
    else # kind == RETURN
        handleReturn(caller, results);
}

proc rpc(int machine, address; byte args[*]) {
    netWrite(machine, CALL, (executing,address,args));
    insert descriptor of executing on delay list;
    dispatcher();
}

proc handle_rpc(int caller, address; byte args[*]) {
    acquire free process descriptor; save identity of caller in it;
    put address in a register for the process;
    unpack args and push them onto the stack of the process;
    insert process descriptor on ready list;
    dispatcher();
}

proc rpcReturn(byte results[*]) {
    retrieve identity of caller from descriptor of executing;
    netWrite(caller's machine, RETURN, (caller, results));
    put descriptor of executing back on free descriptor list;
    dispatcher();
}

proc handleReturn(int caller; byte results[*]) {
    remove descriptor of caller from delay list;
    put results on caller's stack;
    insert descriptor of caller on ready list;
    dispatcher();
}
```

**Figure 10.9** Kernel routines for implementing RPC.