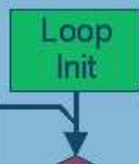
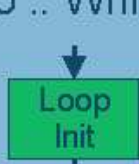


Do .. While

While .. Do



While1 World in SIX parts

Part n.3

BIOS and OS base software
Unix and MS kernels drivers and special software implementation.

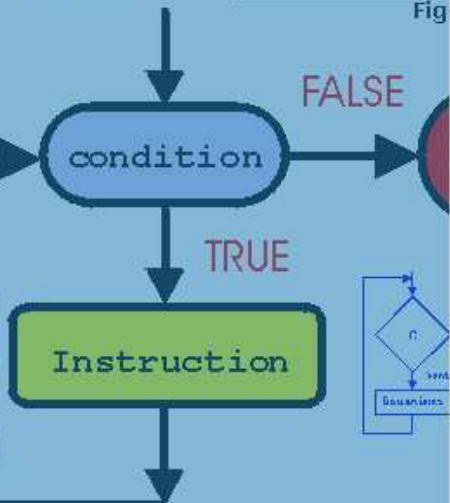
Embedded software
Real time systems projects and products for automotive, aeronautic transportation

Network software
Standard and proprietary protocols design
Special application file transfer and screen scraping software
Host systems interface software

Telecommunication software
Router and Network elements
Provisioning systems
Special appliance applications

Mission critical software
World wide company mission critical applications

Software products



FALSE

TRUE

Instruction



No

Program continues...

Figure

FALSE

TRUE

Instruction



No

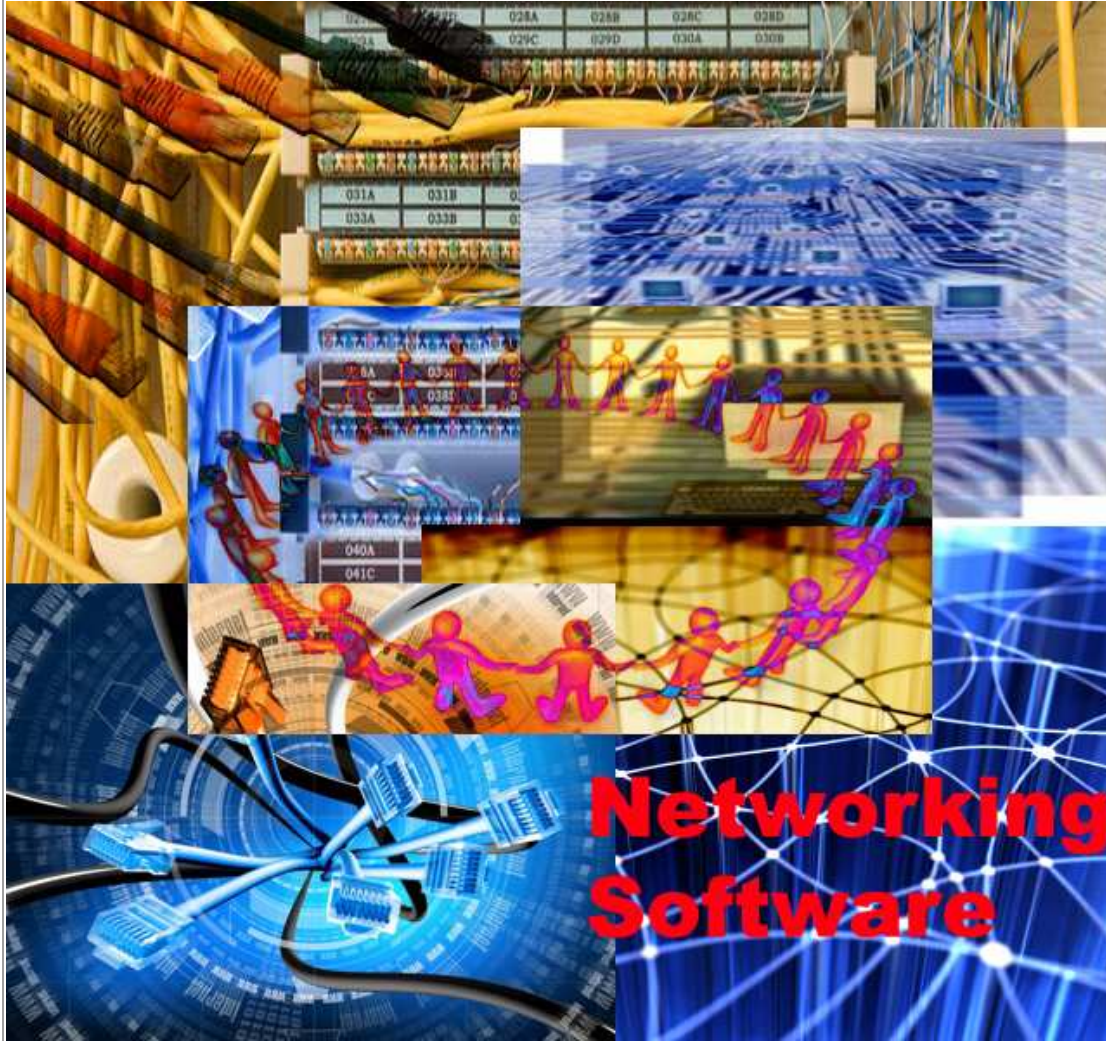
Program continues...

Figure

FALSE

TRUE

Instruction



Some of the developed projects
for Big Companies
on network software



While1

(www.while1.com)

**While1 main
customers for
network
software:**



olivetti



Telecom Italia



SNMP Poller

SNMP poller named **SCUBE** (**SNMP Shot Sentinel** => **S3** => Scube). The module is a distributed application able to collect all information coming from systems and devices which exports them via SNMP protocol. The project was ordered to replace the poller provided by **HP** inside **HP Open View** since it is too slow to collect the required data. The development led to an object that can work on **Unix** and **Microsoft** operating systems. It has remarkable characteristics in terms of high performance, scalability, portability, SNMP compatibility, low use of system resources, distributed application and a simple tuning for each context.

Telecom Field Access System

TELECOM FIELD ACCESS SYSTEM. We built a network of PDA (Personal Digital Assistant), distributed to business customer support staff in order to grant remote access to TELECOM services through mobile telephony (ETACS e GSM).

Broadcom



Miniport device driver

Research to realize a **Miniport device driver** able to implement a **ISCSI** protocol on **Windows NT/2K** systems. The **miniport-driver** has to come between **SCSI** subsystem and the level of interface to **TDI** network protocols; it has to convert SCSI commands to network messages to be sent to **remote-storage** systems working with **ISCSI** protocol.



Motorola SCA

Serial device driver

Development of a **device driver** for **serial lines** derived from "serial.sys" module, working on **Windows 2000** systems. It was able to emulate a **loopback** virtual connection condition between two **virtual COMs**. Virtual connection between two COMs allows an application working on serial line to be interfaced from a module operating on corresponding serial in loopback. This chance allows both to get automatically applications (using serial bus) tests and to interface applications able to convert exchange mode on serial in another interface mode (Lan, Wan etc.). The project was developed in **Motorola Labs in Stamford – Connecticut (USA)**.

Olivetti



Drivers developments

- Development and maintenance of **MAC driver NDIS** for network **Ethernet** and **Token-Ring** boards (Olivetti, 3com) in **Microsoft NT** environment.
- **MAC DLPI / LLI** driver development and maintenance for (Olivetti NCU9141, NCU9180, NCU9172) **Ethernet** and **Token-Ring** network adapters in **Unix SVR4.0** and **Unix SCO rel.3.2.** environment.
- **MAC NDIS device driver** for **Ethernet board Olivetti NPU-9145** able to interface to **LAN MANAGER** operating both on **TCP/IP** and **OSI stack** protocols.
- **MAC** driver development, maintenance and certification for Digital PDQ (EISA)

FDDI network adapter in **UNIX SVR4.0** environment.

- Consulting activity at **Olivetti's**, in order to develop **porting** for **NETWARE FOR UNIX** (NOVELL) product on UNIX SV 4.0 LSX 5000 OLIVETTI systems.
- Development of a special **Mac device driver** for Ethernet board **3COM PCI 3c509** in **VMEXEC Motorola** on **PCI** bus with **Power-PC** processor. It manages connection with ESIC device (projectors of vector images) with interface with applications developed for driving simulation.
- Execution of porting of **Netware for Unix** on Unix SV 4.0 based systems and official certification at **NOVELL** branch in SALT LAKE CITY (USA).
- Development of a **Unix SCO** device driver to manage a smart board handling serial lines for network connection on **WAN Multiprotocol**. The driver has been developed to handle more boards at the same time on multiprocessor systems.
- **NETBIOS protocol**, which is **TCP/IP** based and complies with the **RFC1001/RFC1002** standard on OLIVETTI UNIX X/OS MULTIPROCESSOR. This activities involved developing NETBIOS **streams** level, implementing a **TPI** standard interface TCP/IP of X/OS (from BSD 4.3) and porting on the same system as the **standard TLI library**.
- **Independent Hardware Vendor DLL** for Microsoft SNA Server. It enables SNA Server to use Olivetti hardware when communicating with a host.
- **Remote Procedure Call** system which lets you use services **remotely** across a PC network (MS-DOS/OS2) (Project PLREM). Implementation of OLIVETTI **LSI** library on OS/2 server, which can interface with **RUI IBM** environment (host-connectivity).
- Realization of all the functions belonging to **NAMED-PIPE (Microsoft LAN MANAGER)** interface. The development was based on **Unix TLI** interface. The module on Unix OS operates as **call converter** for **lan-connectivity** from Named Pipe semantics/syntax to TLI ones.
- Subsystem providing a **connectivity method** on Unix 4.0 servers between clients connected over LAN and a **TUXEDO** application residing on a server.
- Development of an application based on **OS/2** operating systems to manage **Setup** (bios) PC information stored in **CMOS** area. The project has been accomplished developing an application and related video manager to simulate all classical **BIOS** masks at init time. Moreover to access to registers belonging to CMOS area it was developed a dedicated **device driver** for OS/2
- Realization of all **NETBIOS protocol** modules based on **TCP/IP** complying to **RFC1001/RFC1002** standard for Olivetti Unix **X/OS Multiprocessor**. The activity included the realization of **STREAMS** Netbios, the implementation of an interface **TPI** standard on monolithic TCP/IP available on X/OS (derived BSD 4.3) and porting of the same system of **standard TLI library (Xpg4)**.

SEPA



Dedicated device driver

Mac device driver for Ethernet **3COM PCI 3c509** boards in MOTOROLA **VME** environment on PCI and with POWER-PC processor. This device driver can manage link with ESIC devices (video projectors for vector images) and can interface with programs that were designed for a project about driving emulation.

PRAIM



IBM3270 emulator

Development of the “client” part of an **IBM3270 emulator** able to operate on three different operating systems: so, it was designed to be portable on **Windows CE**, **Windows NT** and **Linux**. Code development was focused to be highly portable with a graphical manager that operates with the same interface on all the defined targets.



Fiat Group Automobiles

Information system

New management system for information systems to be used by **FIAT AUTO dealers**. This implied defining **client/server** connectivity architecture, choosing **operating systems**, **LAN** and **WAN** systems (interfaces, protocols, etc.) and developing all the components, both on client and on server, for data transport.

Fiat Avio



Proprietary protocol

Development of a proprietary protocol named **WISP**, usable to solve all **Multi Point** connections issues for systems connected via a Serial line **Rs485** multidrop (and Rs232 for point-to-point version). The protocol has been designed for the complete management of the modes "**Master/Slave**" and "**Multi Point Balanced**". In first case the system rises to Master level and works as general *dispatcher*. In second case, systems are all connected to the same cable (tx/rx) without the need of a defined Master. To rule transmissions and receptions, the protocol handles via software a **collision control** system, providing the complete communication media control. Provided interface for protocol and services usage is similar to the one provided by network based on Ethernet connection on TCP/IP protocol (Socket).

PLLB



Proprietary system Maintenance and development

Maintenance and development of **TLM** system for basic software UNIX kernel (PNIX), **ISO/OSI** and **X25** protocols, routing between systems connected over a WAN, libraries supporting programs, tuning and system configuration. The job included Y2K compliance of the whole os.

Study of all the modifications to insert to Unix kernel and related smart controllers to include **TCP/IP** protocol and related user interface.

Transport system on **switched line** and **LAN**, for data exchange between client/server applications running on PNIX PLLB systems, used in TELECOM Italia signal control centres.

Varian



Virtual Device Driver

Realization of a **Virtual Device Driver** for **Windows 98** to interface hardware (**PIO**) to manage **parallel port**, to allow the system to emulate a **printer behaviour**. With the device driver, we developed an application that captures data coming from parallel port and emitted to another pc, after having stored on local files.

Configuration auditing

Auditing of the whole configuration of PCs running **Windows 3.1** to manage in the same time **LanManager** net (file server/printer server) and **IBM ANYNET** essential for tools provided by IBM to connect **AS400** systems (e.g. PC Connect).

Virtual Network USA

TDI protocol

Realization of a **TDI protocol** for **Windows 98** operating system able to emulate **IP** protocol (**Raw socket**) to handle a **IP-Aliasing** service related to frames issued by "ping" command. The object interfaces to **NDIS** drivers (via Wrapper), captures ping IP frames, examines the address and answers emulating the presence of a system on network working with that address.

Netframe System Inc. USA

Diagnostic programs

Realization of a diagnostic program for "**Cluster System 9000 – Raptor**" system by **NETFRAME** able to test all the functionalities of **WIRE-Service** system. This system handles all the running system parameters (e.g. temperature, fans speed, input voltage, broken boards and so on) using seven processors located in different system positions and connected via a I2C serial bus. Final project test has been performed in **NETFRAME System Incorporated** in **Milpitas – CA (USA)**.

Universal Network Machine USA



Smart PCI board

Analysis to realize three system components handling a smart PCI board working on Microsoft Windows NT/2k/XP hosting some connection protocols and a file system. Designed components are:

- **NDIS-NIC driver:** it is a classical NDIS driver able to provide, in addition to standard interface, a group of special functions to communicate with **Tcp Offload Engine** present on board
- **TCP Offload Engine Driver:** it is a **TDI driver** providing the chance to have a new network protocol. In this case, protocol (TCP/IP) is on board and the module has to work as a tunnel to address system requests towards the on-board engine.
- **File System Driver :** since the board can connect peripherals as disks as well, this element provides the opportunity to interface a file system on UNM board.

The components are designed to operate together to allow functions integration of all the subsystems on board (Lan and File System).



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Italy Headquartier : Corso Turati, 70 - 10134 Torino

Italy office : Environment Park Via Livorno, 60 - 10144 Torino Tel./Fax. +39 (011) 2257721

Italy office : ICO Centrale, Via Jervis, 9 - 10015 Ivrea (To) Tel./Fax +39 (0125) 641607

USA office: 405 El Camino Real #219 - Menlo Park CA 94025 Tel. +1 (650)317.19.74