

**TECHNICAL GUIDE TO
MACHINE-READABLE EVIDENCE**

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**PRESENTED IN TWO PARTS:
A. CIVIL (VERSUS CRIMINAL) DISCOVERY
B. EVIDENCE FROM UNIXTM SYSTEMS**

**(THIS IS NOT LEGAL ADVICE, WHICH CAN
ONLY BE PROVIDED BY AN ATTORNEY.)**

I. Overview: Civil versus Criminal

II. What's usually at stake in Civil cases

A. Copyrights

- 1. Computer software**
- 2. Chip designs**

B. Trade secrets

C. Patents

D. Anti-Trust

III. Problem Sources

A. Ex-employees

B. Industrial espionage

C. "Reverse" Engineering

IV. Pros of Civil litigation

A. Injunctions

B. Preponderance of evidence

C. Money damages

D. Sends a message

V. Cons of Civil litigation

A. Cost

1. Attorneys

2. Support staff

B. Management time

C. Duration

D. Backfiring

E. Market impact

VI. Backfiring

A. Inadequate protection of property

B. Inadequate security

C. Internal documents (e.g., e-mail)

D. Unclean hands

VII. The road to discovery

A. Gather evidence – is there a case?

B. File lawsuit (and counter-claims)

C. Pre-trial Court Orders

1. Preservation of evidence

2. Confidentiality (Protective Order)

D. Discovery

VIII. Types of Civil Discovery

A. Interrogatories

B. Requests for Admission

C. Document demands

1. Business records

2. Correspondence

3. E-mail

4. Software source code

IX. The role of “Experts”

A. Declarations

B. Access to Discovery

X. Limits on Civil Discovery

A. Relevance (no “fishing expeditions”)

B. Speed

C. Responsiveness

D. Problem Areas

1. Failure to produce

2. Privilege

E. Special Masters

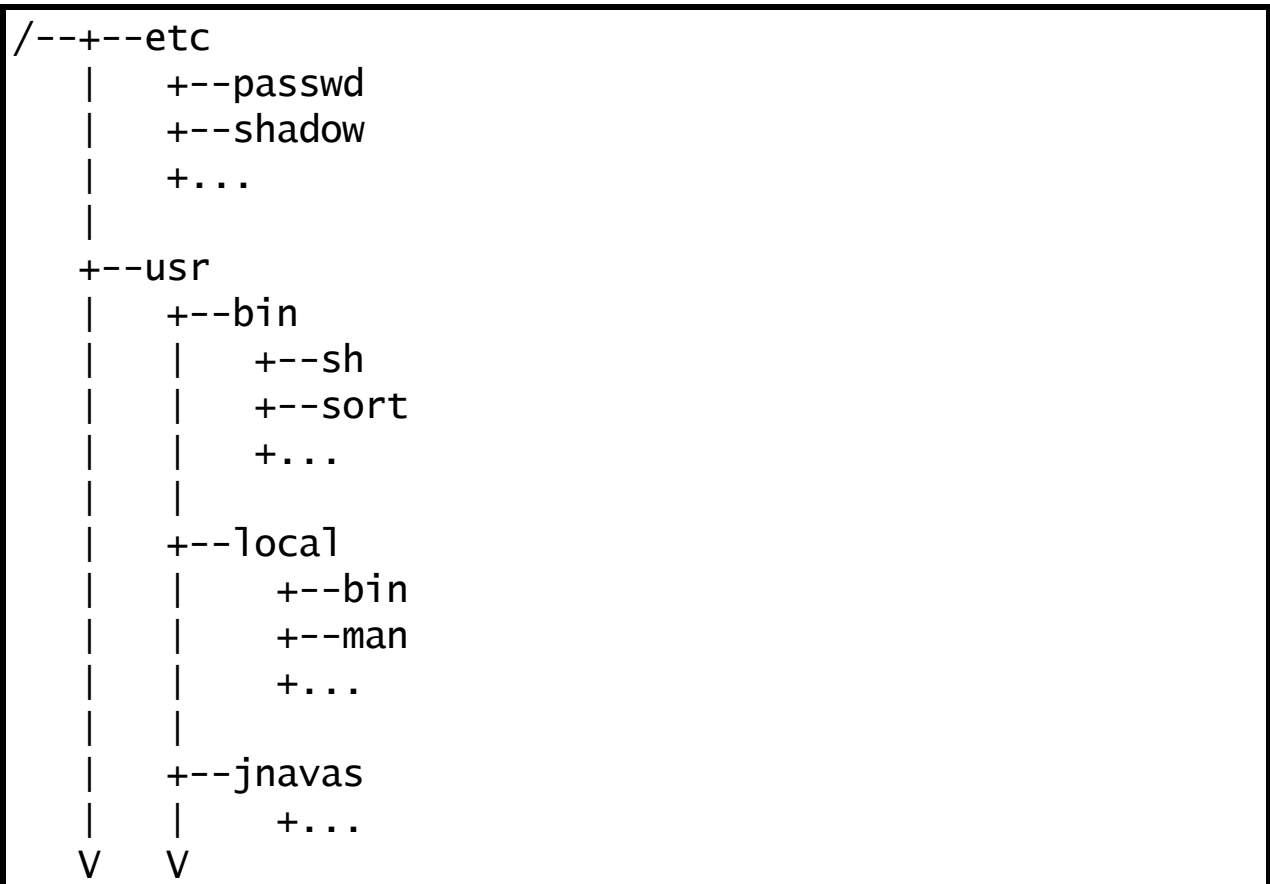
XI. Summary

XII. What is UNIX

A. Brief history

B. How UNIX relates to MS-DOS

C. Typical UNIX environments



XIII. Challenges

A. Amount of material

B. Networking

1. Servers

2. Remote file systems

C. Security

D. Variations

1. UNIX is not UNIX

2. Different command “shells”

E. Hardware interfacing

1. Physical

2. Kernel

XIV. UNIX security overview

A. Permissions

- 1. User**
- 2. Group**
- 3. Other**

B. Passwords

- 1. /etc/passwd**
- 2. "Shadow" passwords
/etc/shadow**
- 3. The "root" password**

C. Set User (su)

XV. Technical issues

**A. Common file extensions
(executables; .c, .o, etc.)**

**B. Archives
(ar, tar, and shar)**

**C. Compressed files
compress (.Z) and gzip (.gz)**

**D. Encryption
(DES and PGP)**

E. Network File System (NFS)

F. Directories

G. Symbolic links

XVI. Searching

A. grep

B. find

C. perl

XVII. Types of backup storage

A. Magnetic tape

- 1. QIC**
- 2. 8mm**
- 3. DAT**

B. Hard disk

C. Cartridge disks

- 1. Iomega**
- 2. SyQuest**

D. CD-ROM recorders

E. Optical drives

F. Floppy diskettes

XVIII.Strategies

- A. “Drain the pond”**
- B. Take the source**
- C. Searching**
- D. Select “subtrees”**

XIX. What can go wrong

A. Shutting down the system

B. File system corruption

C. Wiping out

1. Files

2. Directories

3. File systems

XX. Summary

THE NAVAS GROUP

The Navas Group provides management and support services to a variety of domestic and international clients, with emphasis on high-technology marketing and product development. Expert witness services are also available. Inquiries are welcomed; extensive references are available on request.

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JOHN NAVAS

Principal of The Navas Group, Mr. Navas is a senior manager and expert with over 30 years of experience in general management, marketing and engineering. Industries in which he has been involved include aerospace, computers, distribution, education, food products, hotel and motel, mail order, pharmaceuticals, and telecommunications. Areas of special expertise include business planning, computer software engineering, international operations, quality improvement, and restructuring.

Over the years Mr. Navas has been qualified as an expert in marketing and engineering in several high-technology lawsuits, has advised the European Community on computer competition, and has testified extensively. Mr. Navas has been a frequent participant in computer industry groups, and has authored a number of articles and papers.

High technology lawsuits in which Mr. Navas has testified include:

United States vs. IBM
Memorex vs. IBM
Cherkas et al vs. Storage Technology Corporation et al
Olinger's Auto Parts vs. Ozie Hamerman
System Enhancement Associates vs. PKware
Ample Data vs. 3M
LaPine vs. Kyocera
Tom H. Connolly v. Hambrecht & Quist Group, et al
Treva Communications Inc. vs. The Renaissance Group, Inc.
Johnson Controls vs. State of California
Quarterdeck vs. Wollongong
Cadence Design Systems vs. Avant!