

In this issue:

**April 1985**

**New Product Announcements**

- Toolchest
- UNIX System V, Release 1.2

**Business Issues**

- OEM/VAR Seminar
- Licensing Agreement Changes

**Technical Information**

- UNIX Software Advisor Column
- UNIX System Release Comparison



**\$ echo**

*\$ echo* is published for UNIX System V licensees by  
AT&T Software Sales and Licensing.

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## **\$ echo Newsletter**

*A message from the Editor:*

*\$ echo* is the newsletter published by the AT&T Software Sales and Licensing organization for licensees of UNIX\* System V.

Licensees for UNIX Software products and services are located throughout the world. Having a customer network this large poses a special problem in establishing effective communication lines. This newsletter is designed to make our organization more responsive to our customers' needs through a structured information dissemination medium.

The purpose of *\$ echo* is to reach all UNIX System V licensees through one defined medium. It serves as a consistent channel of communication to our licensees and keeps them abreast of any product announcements, policy changes, company business and pricing structures.

Subscriptions may be purchased through the Software Sales and Licensing organization.

Subscription Rate - \$87 per year

Make checks payable to AT&T and send orders to:

*\$ echo* Subscriptions  
AT&T Software Sales and Licensing  
P.O. Box 25000  
Greensboro, North Carolina 27420

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## NEW PRODUCT ANNOUNCEMENTS

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### UNIX SYSTEM TOOLCHEST OFFERS ELECTRONIC LICENSING

The UNIX<sup>1</sup> System Toolchest is now available from AT&T to UNIX System V source licensees in the continental United States and Canada. It is an electronic catalog of utility programs, editors and other software development tools. There is an EMACS editor, a relational database manager, and a utility package for managing background processes. All are available in source code, run under UNIX System V, and are available electronically.

Each Toolchest program has been carefully selected by AT&T's development community for its functionality, technical merit, and robustness. It is all part of an internal effort to identify and share those packages that contribute to AT&T's own productivity. Now customers can select from among the best of those programs and login to a continuing supply of new tools and utilities.

For the first quarter of 1985, AT&T has test marketed Toolchest among its UNIX System V OEM/VAR licensees. Now it is available to the full complement of all System V source licensees.

#### Unlocking the Toolchest

From anywhere within the continental United States and Canada, at any time, night or day, one can unlock the Toolchest by simply dialing 201-522-6900 and logging in to the AT&T 3B computer that hosts the Toolchest electronic catalog.

The login, **guest**, is the key to unlocking the Toolchest.

Once inside, an easy-to-use menu system guides the browser who is free to look around without cost or obligation.

Browsing through the electronic catalog, the customer will find descriptions of all the Toolchest programs, complete with information on documentation and memory requirements. Prices for many of the toolchest packages are below those for binary software.

Persons with a question about the software, the documentation, or the Toolchest program itself should simply type it in and the Toolchest administrator will get back to them with the answer.

All Toolchest software is distributed electronically, via uucp. All AT&T needs is a customer electronic mail address. All the customer needs is licensing authority and a system equipped with uucp.

Because Toolchest software is used primarily in a development environment, it is licensed "as is," without technical support. The savings in support costs have been passed along to the customer as low prices. Those savings, combined with economical electronic distribution, mean outstanding value for the customer's software dollar.

#### Licensing the Toolchest

Although each of the Toolchest programs is priced individually, all are licensed under a single umbrella agreement. The agreement conveys the software for the customer's own internal use and grants the right to distribute copies internally on as many processors as one wishes. There are no CPU numbers to keep up with and no reporting requirements.

When one is ready to order from the Toolchest, the system will check for licensing authority. The agreement can be requested while on line. AT&T will waive the \$100.00 registration fee for UNIX System V source licensees.

#### Sublicensing Toolchest Software

Toolchest software is also available for sublicensing under a "lump sum" arrangement. One simple fee per package and an acknowledgement of the source in any promotional material and the customer can offer binary copies commercially. There are no royalties and no reporting.

#### Current Contents Available

New tools will continue to be added at regular intervals. The following is a list with brief descriptions of the tools currently available in the AT&T UNIX System Toolchest.

## TOOLCHEST TOOLS

Name	Description	\$ Source	\$ Sublicensing
Database			
UNITY-TC	Relational db for Simple Files	1,250	10,000
Debugger			
LTRACE	lex and yacc Debugger	75	250
SLOQ	Flexible arc Level Logging Facility	100	450
Driver			
QBUS-TC	lbv 488 Interface Driver	2,000	18,000
Editor			
EMACS-TC	Full Screen Editor, Split Screen	900	10,000
TECO-TC	Popular DEC Editor for the UNIX System	450	3,000
Environment			
4415WDW	Windowing for AT&T-IS 4415 Terminal	95	1,000
VSH-TC	Menu Shell	250	1,500
File Utility			
FASTDD	Faster "dd" Command	200	2,000
FILE-UTIL 1	Extract Lines; Extract ASCII Strings	100	450
MAKE-UTIL	Makefile Generator and Analyzer	95	500
VSORT	Sort for Large and/or Binary Files	450	2,000
Game			
TTTT	3 Dimensional Tic Tac Toe for 2 Players	40	200
Language			
KSH	Korn Shell	2,000	20,000
LISP-TC	Lisp Interpreter	300	2,000
Office Auto.			
DATEBOOK	Maintain Personal Appointment Calendar	450	7,500
FMAIL	Full Screen Interface to std Mail	450	2,500
Program. Aid			
BPTAP	Background Process Term Access Package	250	450
CONV-DT	Date Conversion Package	150	450
INEDIT	Input Line Editor	75	250
NCSL	Count Non-Commentary Source Lines	200	1,000
SH-PGMG1	Set of Useful Shell Prog. Tools	100	450
SH-PGMG2	Set of Useful Shell Prog. Tools	50	250

	Source	Sublicensing
Average	< 450	< 3,700
Median	200	1,000
Range	40 - 2,000	200 - 20,000

## **MAINTENANCE RELEASE UNIX SYSTEM V, RELEASE 1.2 AVAILABLE MAY 1**

AT&T has announced May 1 availability of UNIX System V, Release 1.2, the latest maintenance update for UNIX System V, Release 1.0.

Included in this release are high priority customer maintenance fixes and Disk File Controller (DFC) Generic 3 support software (for the AT&T 3B20 computers).

The product will be supplied at no charge to customers with support contracts as a maintenance update. It is available to unsupported customers who have a UNIX System V license for a fee of \$5,000.00. Non-supported educational licensees will be charged \$800.00.

The product will be furnished on 1600 BPI tape media for DEC VAX<sup>2</sup> computers and AT&T 3B20 computers, and on 800 BPI for PDP 11/70 machines. The documentation set for this release will consist of the complete set of UNIX System V, Release 1.0 documentation. The only new document will be the System Release Description (SRD). This product is available for both domestic and international markets.

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## **AT&T ANNOUNCES ENHANCEMENTS TO UNIX INSTRUCTIONAL WORKBENCH SOFTWARE**

AT&T has announced a number of enhancements to UNIX INSTRUCTIONAL WORKBENCH<sup>3</sup> Software, the interactive computer-based training package.

The enhancements include:

- Performance improvements of approximately 25 percent,
- Improved administrative and course management capabilities to provide more effective reporting on student progress,
- More flexible courseware registration procedures,
- An "unbundling" of the AT&T courseware and delivery system. Potential customers may license just the courseware and delivery system, or if they prefer, they can license the entire package complete with the authoring system.

## **Components of the INSTRUCTIONAL WORKBENCH Software**

The INSTRUCTIONAL WORKBENCH package contains three major components:

- A powerful Authoring System that allows writers, even those with little or no computer experience, to create effective computer-based training material;
- A Delivery System that presents the courseware in a logical and non-threatening manner, evaluates the student's responses, and monitors and tracks the student's progress. The delivery system also includes administrative features that provide on-line student registration, maintain student records and produce a variety of administrative reports; and
- A set of five courses developed by AT&T that offers introductory training for users of UNIX System V. The courses are:
  1. Fundamentals of the UNIX Operating System
  2. Advanced Use of the UNIX System Text Editor (ed)
  3. Memorandum Macros (for use with UNIX DOCUMENTER'S WORKBENCH<sup>3</sup> Software)
  4. Table Processing Using tbl (for use with UNIX DOCUMENTER'S WORKBENCH Software)
  5. Touch Typing

## **Authoring Courseware Under UNIX INSTRUCTIONAL WORKBENCH Software**

The UNIX INSTRUCTIONAL WORKBENCH authoring system includes COMPOSE, a powerful courseware development system that allows authors with little or no computer experience to write and display sophisticated computer-based training material. COMPOSE offers a set of standard screen templates for creating text, exercises and a variety of tests (such as multiple-choice and true/false). COMPOSE prompts the author to fill in these templates using a descriptive and conversational set of commands. A 'preview' facility allows the writer to view the course exactly as the student would.

The COMPOSE command set is a natural language extension of the lower-level TOPIC language that forms the foundation of the authoring system. With its greater flexibility and sophistication, the TOPIC language allows more experienced developers to create

their own templates and customize the presentation of the course material.

Ideally suited for any organization developing computer-based training or providing embedded training with their own systems and software, UNIX INSTRUCTIONAL WORKBENCH Software is available in source code for the AT&T 3B20 and 3B5 computers and the DEC VAX computer running

under UNIX System V. The source code is priced at \$12,000.00 for the initial copy of the entire system (\$3,500.00 for qualified educational institutions), or \$3,000.00 for the initial copy (\$1,000.00 educational) for just the delivery system and the AT&T courseware. Sublicensing rights are also available.

Binary systems are also available for the AT&T 3B20, 3B5 and 3B2 computers.

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## BUSINESS ISSUES

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### AT&T SPONSORS UNIX SYSTEM BUSINESS AND TECHNICAL SEMINAR

AT&T sponsored a UNIX System Business and Technical Seminar March 4-5 in New York and March 7-8 in Santa Clara for UNIX System licensees who also have sublicensing rights. The purpose of the seminar was to provide statements of direction in both the technical and business areas, to hear input from licensees, and to share proposals affecting licensing, pricing, and business procedures.

The following is a brief synopsis of the presentations by members of AT&T Bell Laboratories UNIX Software Development organization and the Software Sales and Licensing management.

Dick Shahpazian, Director, Software Sales and Licensing, opened the session with an overview of AT&T's objectives for the UNIX operating system:

- To encourage broad usage
- To establish UNIX System V as a standard
- To provide customers with quality products and service

Bob Mitze made a presentation on directions for the UNIX System. He discussed porting base issues, directions for new development, file system hardening, file and record locking, and System V implementation.

Doug Kevorkian discussed the System V Interface Definition and Verification Service. He outlined the objectives of the Interface Definition as follows:

- To define a common computing environment for applications and users of System V implementations

- To facilitate portability of application code
- To define partitioned sets of services based on functionality

He also explained the two level verification process for software developers and end users and distributors.

Laurance Brown made a presentation on System V networking plans. His topics included philosophy, kernel services, and network service extensions.

Distributed UNIX System was the topic for Dick Hamilton. He discussed transparent remote file system access, comprehensive administration, streams-based networking, and recovery.

Sue Picus discussed AT&T's plans for language products. She described plans for evolution, standardization and enhancements of the C language. She stressed AT&T's commitment to upward compatibility for its language products.

Jeanne Baccash covered user friendly features of UNIX System V. Her points included the on-line help facility, command syntax standards, error handling standards, computer professional interface, and user interface services.

Gary Lindgren discussed internationalizing the UNIX System. AT&T's objectives are to provide a standard UNIX System that supports all domestic and foreign customers; to provide a framework/tool for local character sets, error messages in local languages, and multi-lingual help facility; and to identify enhancements to UNIX System V to support international needs.

Cathi Brooks described the UNIX System Toolchest. Its goal is to encourage UNIX system application development by providing seeder material and tools. It is a new distribution channel for "as is" UNIX system tools and AT&T's first attempt at electronic software distribution. (See article on Toolchest in this issue.)

Miguel Velez discussed training, documentation and support for the UNIX System. He also described the process of licensing courseware from AT&T.

Dave Frasure made a presentation on licensing UNIX System software and outlined several changes that AT&T is making in the licensing and sublicensing agreements. (See article on licensing in this issue.)

An equally important objective of the conference was to build a stronger business relationship with those vendors who resell AT&T's UNIX Software. "From that perspective, the conference was an enormous success," said Otis Wilson, Manager of Software Sales and Licensing. "More than 80 percent of the respondents to our evaluation questionnaire agreed or strongly agreed that the conference gave them a better insight into AT&T's business and development direction, and an equal percentage felt that the information they received would assist them in their own business and development planning."

"In addition to the information we gave out, we also received some very good input from the customers - ideas, concerns and suggestions that we are now studying," said Wilson.

Among those topics are issues relating to the migration of the porting base to the AT&T 3B2 computer and the impact that action will have on VAR and end-user customers. Discussion on the System V verification service also provided valuable advice on how the service might best be administered and provided. Discussion of the pricing structure for sublicensing suggests a thorough evaluation of alternative pricing models.

"In many respects the conference accomplished all of the objectives we had set out for it," said Wilson. "The success has encouraged us to provide similar forums on a periodic basis."

## **AT&T ANNOUNCES CHANGES/CLARIFICATIONS TO SOFTWARE AND SUBLICENSING AGREEMENTS**

At the Business and Technical Seminars held March 3-4 and March 6-7, Dave Frasure, Sales Manager, Software Sales and Licensing, described several modifications that will be made to AT&T's software contracts.

These changes are in response to direct feedback from AT&T's licensees and are intended to make the contracts more responsive to the needs of the licensees. The following is a summary list of the changes.

### **Changes to the Software Agreement**

#### *Contractor Provisions*

- The language for Contractor Provisions will be incorporated into the standard Software Agreement.
- Software Agreement Supplements will be modified to identify contractor's CPUs.

#### *Supplements*

- The licensee's signature will no longer be required on supplements to add additional CPUs, transfer CPUs, etc.
- Signatures will be required only on the initial supplement for a product.

#### *Paragraph 7.06(B)*

- Paragraph 7.06(B) will be modified to include procedures for verifying and approving the exchange of source code between licensees.

#### *Clarification of Ownership of Derived Works*

- Language changes will be made to clarify ownership of modifications or derivative works prepared by a licensee.

## Changes to the Sublicensing Agreement

### *Use of Reduced Source Code Fees*

- Licensees who do not sublicense binary derivative works either to themselves or in the marketplace and want to take advantage of the reduced source code fees will not be required to execute a sublicensing agreement.
- After the initial CPU fee of \$43,000.00 and an additional CPU fee of \$16,000.00 is paid, the licensee can obtain rights to utilize the reduced source code fee schedule by paying a fee of \$25,000.00. An authorization letter will be issued by AT&T, granting the right to the reduced fees. The licensee may then replicate the UNIX System V source code **for internal use machines** for the following fees:

1-32 User Systems	\$1,000
1-64 User Systems	\$3,500
> 64 User Systems	\$7,000

All CPUs must be licensed as designated CPUs.

- If the licensee wants to distribute binary products internally or in the marketplace, then a sublicensing agreement must be executed. The \$25,000.00 fee previously paid will be credited.

### *Authorization Letters*

- Authorization letters indicating the right to sublicense a product will be prepared by AT&T and mailed to the licensee when the licensee remits the initial sublicensing fee for a product.

### *Clarification of Paragraph 2.05(B)*

## **Reporting royalties when distributing through authorized copiers.**

(The following comments assume that the authorized copier is a licensee of AT&T and has sublicensing rights.)

- If modifications to the product are owned solely by the licensee and distributed by the authorized copier, then the royalty fee may be reported by either the licensee or the authorized copier, as the licensee shall elect. (Note: Discounts will apply only to the company that reports the royalty fee.)

- If the authorized copier retains any ownership interest in the modifications, then royalty fees for copies distributed by the authorized copier must be paid to AT&T via a sublicensing agreement between AT&T and the authorized copier. Royalty fees for copies distributed by the licensee must be paid to AT&T via a sublicensing agreement between AT&T and the licensee.

### *Fee Changes*

- Licensees will be given a 90-day notice when fees change for sublicensed products.
- Licensees may continue to use the existing per copy fees until the end of the reporting period in which the new fees are announced.
- If the fees decrease, such fees may begin to be used when they become effective.

### *Paragraph 5.02(a)*

- The language will be changed to require payment of the sublicensing fee prior to furnishing copies of the sublicensed product. This will eliminate the previous requirement for a 30-day notice.

### *Paragraph 3.02*

- Eliminate "or AT&T notifies licensee in writing" so that the paragraph begins as follows:

"Unless licensee notifies AT&T in writing at least thirty (30) days before the expiration date established in Section 3.01 that such party does not wish renewal . . ."

### *Paragraph 2.04*

- Add "and other distributors" so that the paragraphs begins as follows:

"Distributors who are not also authorized copiers may not make copies of sublicensed products, but may furnish to customers and other distributors copies of sublicensed products . . ."

### *1-16 Users Per-Copy Fee Change*

- The per-copy royalty fee for UNIX Operating Systems in the 1-16 user category has been reduced effective April 1, 1985 from \$500.00 to \$250.00.



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## TECHNICAL INFORMATION

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### THE UNIX SOFTWARE ADVISOR

**Question:** How can I get in touch with my Software Sales Account Executive electronically?

Answer: An electronic mail address has been established for cases where this type of communication is deemed beneficial.

A gateway UNIX System computer is being provided for mail forwarding to AT&T at Summit, New Jersey. The "uucp" information for the gateway computer is:

```
attunix Any ACU 1200 1-2015226805
login:-login: attunix
```

**Question:** What is AT&T's policy regarding fees for a customer's binary product which is derived by commingling code from any two System V family members (e.g., VAX and M68000)?

Answer: If the derived product is a single UNIX System product (i.e., a single binary load module), then only one sublicensing fee and one per copy royalty fee is due AT&T although source from multiple source product families may have been used to derive the product.

If the derived product includes multiple UNIX operating systems on a single medium that has been derived from different source products, then multiple sublicensing fees and per copy royalty fees will be due AT&T. An example of this would be someone distributing two products to run on a M68000 based product: one ported from VAX technology and the other based on the M68000 port.

The determining factor is whether the derived product is a single system product or multiple products in a single distribution.

**Question:** What is AT&T's policy regarding sublicensing fees and per copy royalties for a customer's binary product which is derived by combining an add-on product with the operating system (e.g., Documenter's Workbench and System V, Release 2.0)?

Answer: AT&T's policy is that the initial sublicensing fee and the appropriate per copy fee for each of the products included in the software is due AT&T for that customer software.

**Question:** Is AT&T considering expanding the section in the software contract that allows the use of certain run-time libraries or files for use in customer developed application software without payment of a sublicensing fee to AT&T?

Answer: Yes. The software contracts are being modified to read as follows:

Routines from files in /lib whose pathnames end in .o or .a and from files in /usr/lib whose pathnames end in .a may be included in object-code format in customer developed applications software without payment of a sublicensing fee to AT&T.

The files /usr/lib/yaccpar, /usr/lib/lex/ncform, and /usr/lib/lex/nrform may also be included in customer developed applications software without payment of a sublicensing fee to AT&T.

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### UNIX SYSTEM V, RELEASE 2.0 TO SYSTEM V RELEASE 2 VERSION 2 COMPARISON

The following is a basic comparison of UNIX System V, Release 2.0 to UNIX System V, Release 2.0 Version 2 (Paging Release).

A customer upgrading from UNIX System V Release 2.0 to System V Release 2.0 Version 2 will enjoy the following additional features:

- Paging
- F77 Enhancements
- Record and File Locking
- Security Administration Package

Also included in this release are software generation system (SGS) enhancements that provide a.out (object) files in aligned format. This enables the operating system to page directly out of the file system.

This release executes on the Digital Equipment Corporation VAX and VAX 11/780 processors.

## Paging

The swapping based memory manager has been replaced by a demand paging memory manager. Paging allows fuller use of the existing hardware by:

1. allowing execution of programs much larger than main memory, and
2. giving a higher degree of multiprogramming.

In short, paging allows more and larger processes to execute simultaneously.

## F77 Enhancements

The F77 enhancements provide the following:

- Passes the ANSI FORTRAN 77 validation tests.
- Properly invokes the processor control interface (PCI) when using the `-O` option
- Contains FORTRAN Military Standard intrinsic functions which are documented in mil(3F) of "The UNIX System V Programmer Reference Manual."
- Incorporates numerous bug fixes.

## Record and File Locking

A synchronization method has been provided to enable multiple users to access files in a way that would prevent other users from either writing or reading a section of a file while a given process has the given section either read (share) locked or write (exclusive) locked, respectively. This feature may be used by database developers to control access to their files.

## Security Administration Package

Because of the U.S. State Department regulations restricting encryption/decryption software to customers

in the U.S.A., a new "selectable" package, the "Security Administration" package, is being provided in this release. This "selectable" package is provided with the release source tape, but must be installed separately.

There are certain changes that both System Administrators and users will encounter. They are summarized below, but the appropriate documentation should be consulted for more detailed information.

1. In creating a system configuration file (the dfile), the tunable parameters tests and swapmap are no longer supported and must be deleted.
2. In the system configuration file, a new parameter, regions, is required and should initially be set to 2.5 times the value of procs.
3. Because the maximum process size has increased from 1MB to 16MB, additional swap space should be allocated on each system. Initially, 10,000 blocks of swap space should be allocated for each 1MB of physical memory. If desired, the `swap(1m)` command can be used to allocate additional space without requiring a rebuild of the kernel and reboot of the system. If such additional space will be allocated on a regular basis, the swap command should be included in `/etc/rc`.

In addition to UNIX System V Release 2.0 documentation, the following updates and new documentation are available:

- UNIX System V Release 2.0 Product Overview VAX 11/750 and 11/780 Processors Version 2
- UNIX System V Release 2.0 Installation Guide and Release Notes VAX 11/750 and 11/780 Processors Version 2
- UNIX System V Release 2.0 VAX 11/750 and 11/780 Processors Version 2 Supplement

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<sup>1</sup> UNIX is a trademark of AT&T Bell Laboratories

<sup>2</sup> DEC and VAX are trademarks of Digital Equipment Corporation

<sup>3</sup> Trademark of AT&T Technologies

# **UNIX\* Software Product Line**

## **UNIX Systems**

UNIX System V, Release 2.0 AT&T 3B20 Version 4  
UNIX System V, Release 2.0 VAX\*\*\* 11/780 Version 2  
UNIX System V/M68000  
UNIX System V, Release 2.0 iAPX286 Version 1  
UNIX System V, Release 2.0 NSC32000 Version 1

## **Workbenches**

UNIX Writer's Workbench\*\* Software  
UNIX Instructional Workbench\*\* Software  
UNIX Documenter's Workbench\*\* Software

## **Networking/Communications Software**

AT&T 3BNET Software  
COMMKIT\*\* Software HYPERchannel# Interface  
COMMKIT\*\* Software Synchronous Terminal Interface  
COMMKIT\*\* Software ETHERNET## Interface  
COMMKIT\*\* Software Basic Networking Utilities

## **Languages and Programming Tools**

BASIC Language For The UNIX System  
COBOL Syntax Checker For The UNIX System  
Motorola 68000 C Compiler System  
Pascal Language For UNIX System V  
UNIX System AT&T 3B2/3B5 C Compilation System

## **Other Software**

5620 DMD Software Core Package  
5620 DMD Software Development Package  
5620 DMD Software Text Package

## **Non-Supported Software**

C/370 C Compilation System  
Device Independent TROFF  
S Statistical Analysis Package  
UNIX System V TEXT MANAGER  
UNIX System Toolchest

## **Machine Readable Documentation**

UNIX System V

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\*\*\* Trademark of Digital Equipment Corporation  
# Trademark of Network Systems Corporation  
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