



# IBM TotalStorage Ultrium Tape Drive 3580 Models H23 and L23 Incorporate New IBM TotalStorage LTO Ultrium 2 Tape Drive Doubling Capacity and Performance

## Overview

The new **IBM TotalStorage™ Ultrium Tape Drive 3580 Models H23 and L23** offer high capacity, performance, and technology designed for the midrange open systems environment. These models incorporate the new Linear Tape-Open (LTO) **IBM TotalStorage Ultrium 2 Tape Drive**, which more than doubles tape drive performance over the generation 1 LTO Ultrium Tape Drive (Ultrium 1), up to 35 MB/sec native data transfer rate (70 MB/sec with 2:1 compression). In addition, with the use of the new IBM TotalStorage LTO Ultrium 200 GB Data Cartridge, the Ultrium 2 Tape Drive doubles the tape cartridge capacity up to 200 GB native capacity (400 GB with 2:1 compression). IBM Ultrium 2 Tape Drives can read and write original LTO Ultrium Data Cartridges at original Ultrium 1 capacities and with improved performance up to 20 MB/sec native data transfer rate (40 MB/sec with 2:1 compression). The Model L23 comes with a SCSI Ultra160 LVD attachment, while the Model H23 comes with a UltraSCSI HVD attachment, for connection to a wide spectrum of open system servers.

Other Ultrium 2 Tape Drive enhancements:

- Digital speed matching — to adjust the drive data rate with the host, which reduces backhitching and improves throughput performance
- Power management — to reduce power consumption
- Channel calibration — to customize each read/write data channel for optimum performance

- Separate writing of multiple filemarks — to improve performance when writing multiple files
- Larger internal buffer — the internal buffer size has been doubled over the Ultrium 1 to 64 MB
- Faster drive speeds — faster data access time, reduced rewind time, reduced cartridge load time, and faster cartridge fill time

The Ultrium Tape Drive 3580 is an external stand-alone or rack-mountable unit, similar to previous models of the 3580, and is the entry point for the family of IBM Ultrium tape products. The 3580 Ultrium Tape Drive provides an excellent migration path from digital linear tape (DLT or SDLT), 1/4-inch, 4mm, or 8mm tape drives.

## Product Preview

IBM intends to further introduce and integrate the IBM TotalStorage Ultrium 2 Tape Drive technology in additional or alternative IBM LTO Ultrium 358x products.

Previews provide insight into IBM plans and direction. Specific availability dates, ordering information, and terms and conditions will be provided when the product is announced.

## Key Prerequisites

Appropriate levels of host software are required to attach the IBM LTO Ultrium 2 Tape Drive 3580 to selected IBM @server iSeries™, AS/400®, IBM @server pSeries™, RS/6000®, IBM @server xSeries™, Netfinity®, HP, Sun, UNIX®, and PC servers. Refer to the **Technical Information** section for details.

## At a Glance

The IBM TotalStorage Ultrium Tape Drive 3580 combines IBM tape reliability and performance at open systems prices. Features of the new Ultrium 2 models include:

- Data transfer rate more than doubled, up to 35 MB/sec native (up to 70 MB/sec with 2:1 compression)
- Tape capacity doubled, up to 200 GB native per cartridge (400 GB with 2:1 compression)
- SCSI Ultra160 LVD and UltraSCSI HVD attachment
- Enhanced features over Linear Tape-Open (LTO) Ultrium 1 in digital speed matching, power management, channel calibration, filemark writing, internal buffer size, and faster drive speeds
- Adheres to LTO specifications

### For ordering, contact:

Your IBM representative, an IBM Business Partner, or the Americas Call Centers at

**800-IBM-CALL**

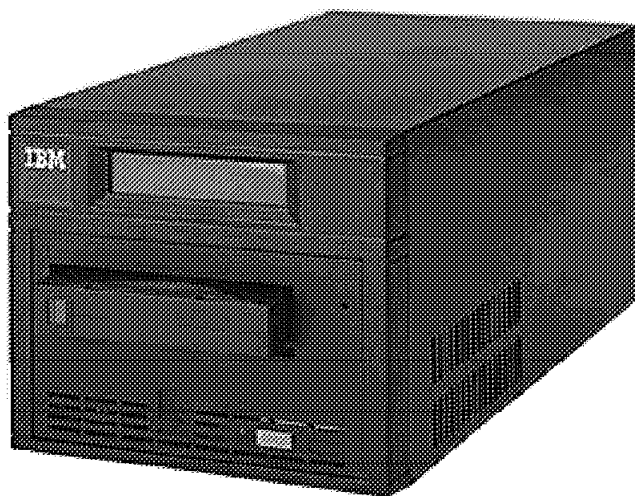
Reference: YE001

## Planned Availability Date

February 14, 2003

*This announcement is provided for your information only. For additional information, contact your IBM representative, call 800-IBM-4YOU, or visit the IBM home page at: <http://www.ibm.com>.*

## Description



The IBM Ultrium Tape Drive 3580 is an external stand-alone rack-mountable unit and contains a Linear Tape-Open (LTO) tape drive designed for the heavy demands of backup tape storage. It is supported for Small Computer Systems Interface (SCSI) attachment to iSeries, AS/400, pSeries, RS/6000, xSeries, Netfinity, HP, Sun, UNIX, and PC servers.

The new Ultrium Tape Drive 3580 Models H23 and L23 incorporate the IBM LTO Ultrium 2 Tape Drive. The IBM LTO Ultrium 2 Tape Drive is the second generation LTO Ultrium Tape Drive in the IBM TotalStorage LTO Ultrium family of products. The Ultrium 2 Tape Drive offers the following significant improvements over the Ultrium 1 Tape Drive:

- Tape drive performance is more than doubled, up to 35 MB/sec native data transfer rate (70 MB/sec with 2:1 compression). IBM Ultrium 2 Tape Drives can read and write original LTO Ultrium Data Cartridges at original Ultrium 1 capacities and with improved performance up to 20 MB/sec native data transfer rate (40 MB/sec with 2:1 compression).

**Note:** Although the Ultrium Tape Drive 3580 provides the capability for high tape performance, other components of the system may limit the actual performance achieved. Also, although the compression technology used in the tape drive can typically double the amount of data that can be stored on the media, the actual degree of compression achieved is highly sensitive to the characteristics of the data being compressed.

- The tape cartridge capacity is doubled over the original Ultrium Data Cartridge, up to 200 GB native capacity (400 GB with 2:1 compression), with the use of the new IBM TotalStorage LTO Ultrium 200 GB Data Cartridge. Both cartridges have been designed to provide several enhancements over previous tape technologies. They are designed to work with tape drives that have increased tape speeds and high-density data recording. The tape itself is an advanced metal particle tape developed for durability and capacity.
- Digital speed matching — The Ultrium 2 Tape Drive will perform dynamic speed matching to adjust the drive's native data rate as closely as possible to the net host data rate (after data compressibility has been factored out). This provides the dual benefit of reducing the

number of backhitch repositions and improving throughput performance.

- Power management — The Ultrium 2 Tape Drive power management function controls the drive electronics to be either completely turned off or to be in a low-power mode. These power modes occur only when the circuit functions are not needed for drive operation.
- Channel calibration — The Ultrium 2 Tape Drive channel calibration feature allows for customization of each read/write data channel for optimum performance. The customization enables compensation for variations in the recording channel transfer function, media characteristics, and read/write head characteristics.
- Separate writing of multiple filemarks — Separate writing of multiple filemarks causes any write command of two or more filemarks to cause a separate data set to be written containing all filemarks after the first. This feature has two advantages. First, it improves performance if a subsequent append overwrites somewhere after the first filemark. Second, write of multiple filemarks typically indicates a point where an append operation might occur after the first of these filemarks. This change prevents having to rewrite datasets containing customer data and the first filemark in cases if such an append occurs.
- Ultrium 1 cartridge compatibility — The Ultrium 2 Tape Drive can read and write on Ultrium 1 cartridges with improved transfer rates.
- SCSI Ultra160 LVD and UltraSCSI HVD attachment — The Model L23 comes with a SCSI Ultra160 LVD attachment, while the Model H23 comes with a UltraSCSI HVD attachment, for connection to a wide spectrum of open system servers. They are supported on AIX®, OS/400®, Sun Solaris, HP-UX, Microsoft™ Windows® 2000, Windows NT®, Linux, and other open systems.
- Larger internal data buffer — There is a 64 MB internal data buffer in the Ultrium 2 Tape Drive as compared to a 32 MB internal data buffer in the Ultrium 1 Tape Drive.
- Faster cartridge fill times (for both Ultrium 1 and Ultrium 2 data cartridges) — The Ultrium 2 Tape Drive can fill an Ultrium 2 200 GB data cartridge 12% faster, with a sustained data rate 128% better when compared to the Ultrium 1 Tape Drive filling an Ultrium 1 100 GB data cartridge. The Ultrium 2 Tape Drive can fill an Ultrium 1 100 GB data cartridge 25% faster, with a sustained data rate 33% better, when compared to the Ultrium 1 Tape Drive. The Ultrium 2 Tape Drive can fill an Ultrium 2 200 GB data cartridge in 1 hour 44 minutes with a sustained data rate of 122.8 GB/hr. The Ultrium 2 Tape Drive can fill an Ultrium 1 100 GB data cartridge in 1 hour 29 minutes with a sustained data rate of 71.9 GB/hr. The Ultrium 1 Tape Drive can fill an Ultrium 1 100 GB data cartridge in 2 hours with a sustained data rate of 53.8 GB/hr.
- Faster data access, rewind, and load times — The Ultrium 2 Tape Drive has the following improvements:

|                          | Ultrium 2  | Ultrium 1   |
|--------------------------|------------|-------------|
| Cartridge Load Time      | 10 seconds | 15 seconds  |
| Maximum Rewind Time      | 80 seconds | 110 seconds |
| Average File Access Time | 46 seconds | 73 seconds  |

Proven IBM LTO Ultrium 1 features, enhanced in IBM LTO Ultrium 2 Tape Drive, include:

- Servo and track layout technology — There are 512 data tracks in Ultrium 2 versus 384 data tracks in Ultrium 1.
- Surface Control Guiding Mechanism — IBM's patented Surface Control Guiding Mechanism guides the tape along the tape path in the IBM Ultrium 3580 Tape Drive. This method uses the surface of the tape, rather than the edges, to control tape motion. This results in less tape damage (especially to the edges of the tape) and less tape debris, which comes from the damaged edges and can accumulate in the head area.
- Magneto Resistive (MR) head design — Use of flat lap head technology in MR heads for Ultrium 2 minimize contact and wear on the tape as it moves over the read/write heads.
- LTO Data Compression (LTO-DC) — The Ultrium 2 uses LTO-DC which is an implementation of a Lempel-Ziv class 1 (LZ-1) data compression algorithm. LTO-DC is an extension of Adaptive Lossless Data Compression (ALDC) and an improvement over previous lossless compression algorithms. Users of LTO-DC can expect to achieve better data compression as users of ALDC.
- LTO Cartridge Memory (LTO-CM) — Contained within the LTO Ultrium data cartridge is the LTO-CM, which is a passive, contactless silicon storage device that is physically a part of the cartridge. The LTO-CM is used to hold information about that specific cartridge, the media in the cartridge, and the data on the media. The storage capacity of the LTO-CM is 4,096 bytes. Communication between the drive and the LTO-CM is via a low-level RF field transmitted by the drive to the cartridge.
- Statistical Analysis and Reporting System (SARS) — The Ultrium 2 Tape Drive uses SARS to assist in isolating failures between media and hardware. The SARS use the cartridge performance history saved in the CM module and the drive performance history kept in the drive flash EEPROM to determine the more likely cause of failure. SARS can cause the drive to request a cleaner tape, to mark the media as degraded, and to indicate that the hardware has degraded.

With support for IBM LTO Ultrium-format tape data cartridges, the 3580 Ultrium Tape Drive provides an excellent migration path from digital linear tape (DLT or SDLT), 1/4-inch, 4mm, or 8mm tape drives. They are a cost-effective solution for backup, save-and-restore, and archiving functions as the entry point for the family of IBM Ultrium tape products.

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## Product Preview

IBM intends to further introduce and integrate the IBM TotalStorage Ultrium 2 Tape Drive technology in additional or alternative IBM LTO Ultrium 358x products.

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## Product Positioning

As you compare competitive tape solutions, consider:

- Capacity and performance requirements
- Data integrity, reliability, and availability
- Storage usage and application requirements
- Affordability
- Loyalty to legacy or existing tape formats

The IBM TotalStorage Ultrium Tape Drive 3580 and industry-leading software applications lead in addressing these requirements and constitute a functionally rich tape storage solution incorporating LTO Ultrium 2 Tape Drive technology.

The Ultrium Tape Drive 3580 models are an excellent choice if you use tape drives or require larger-capacity or higher-performance tape backup. The 3580 is the answer to growing storage requirements and shrinking backup windows and is the entry offering to the family of IBM TotalStorage LTO Ultrium Tape products.

The Ultrium Tape Drive 3580 is an excellent tape storage solution if you use digital linear tape drives or require high-performance tape backup. In addition to reading and writing on IBM LTO Ultrium-format tape cartridges, the 3580 tape drives provide an enhanced functional alternative to DLT/SDLT, 1/4-inch, 4mm, 8mm, or IBM Magstar® MP 3570 tape drives.

For capacity requirements greater than 200 GB (native) and incorporating LTO Ultrium technology, the IBM 3581 Ultrium Tape Autoloader, the IBM 3583 Ultrium Scalable Tape Library, and the IBM TotalStorage UltraScalable Tape Library 3584 should be considered.

For mission-critical data protection, optimized for enterprise multi-mode and host attachment, high-cycle and start/stop intensive tape applications, consider the proven IBM TotalStorage Enterprise Tape Drive 3590 or the IBM TotalStorage Enterprise Automated Tape Library 3494.

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## Reference Information

Refer to the following:

- The three-year warranty Models H13 and L13, in Hardware Announcement 102-240, dated September 3, 2002
- The Ultrium Tape Drive 3580 Models H11 and L11, in Hardware Announcement 100-235, dated August 23, 2000

### Trademarks

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# IBM US Announcement Supplemental Information

January 28, 2003

## IBM Delivery Services

**Custom QuickShip (CQS) Availability:** Box orders are applicable for CQS levels when feature number 1748 is added to the order. CQS levels will guaranty a delivery within six working days.

The objective is to make CQS service levels available 30 days after general availability. The exact date will be communicated via:

<http://www-5.ibm.com/shop/europe/quickship/>

and PartnerInfo.

Detailed lists of systems and features, available under the QuickShip program, can also be found on the above mentioned Web site.

Any updates for QuickShip and Custom QuickShip, which should occur after that announcement, will be reflected in the Web site:

<http://www.ibm.com/shop/europe/quickship>

## Publications

The following publications are shipped with the product, as appropriate. Additional copies are available. To order, contact your IBM representative.

| Title  | Order Number |
|--|--------------|
| IBM TotalStorage™ LTO Ultrium 2 Tape Drive 3580 Setup and Operator Guide | GA32-0460    |
| IBM TotalStorage LTO Ultrium 2 Tape Drive 3580 Quick Reference           | GX35-5068    |
| IBM Ultrium Device Driver Installation and User's Guide                  | GA32-0430    |
| Translated Safety Notices for External Storage Devices                   | SA26-7197    |

The publications listed above and the following publications are also available at the following Web site:

<http://www.ibm.com/storage/lt0>

- 3580 Ultrium Tape Drive SCSI Reference (English)
- IBM Ultrium Device Driver Programming Reference (English)

The Publication Notification System (PNS) is available by order number/product number. Customers currently subscribing to PNS will automatically receive notifications by e-mail. Customers who wish to subscribe, can visit the PNS Web site location at:

<http://www.ibm.com/shop/publications/pns/>

The publications listed on the notification can be ordered by calling the Pubs Support Group in Raleigh at 800-879-2755, option 1.

The IBM Publications Center Portal:

<http://www.ibm.com/shop/publications/order>

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided, as well as payment options via credit card. Furthermore, a large number of publications are available online in various file formats, which can currently be downloaded free of charge.

Note that PNS subscribers most often order their publications via the Publication Center.

## Technical Information

### Specified Operating Environment

#### Physical Specifications: 3580 Models H23 and L23

- Width: 17.1 cm (6.74 in)
- Depth: 33.3 cm (13.1 in)
- Height: 14.6 cm (5.75 in)
- Maximum Weight: 6.6 kg (14.3 lbs)

To assure installability and serviceability in non-IBM industry-standard racks, review the installation planning information for any product-specific installation requirements.

#### Operating Environment

##### 3580 Models H23 and L23

- Temperature: 10° to 38°C (50° to 100°F)
- Relative Humidity: 20 to 80 (percent)
- Wet Bulb: 26°C (78.8°F) maximum
- Voltage: 100-240 V ac, 50-60 Hz auto-ranging
- Electrical Power:
  - 1.0 amps at 100 V ac, 0.5 amps at 240 V ac
  - 0.120 KVA
- Maximum Noise Level: 55 dBA
- Heat Output: 94 watts (81 calories/hour)

**Hardware Requirements:** The IBM LTO Ultrium Tape Drive 3580 comes with raven black covers. The Model H23 has an Ultra/Wide SCSI High Voltage Differential (HVD) interface. The Model L23 has an Ultra160 SCSI Low Voltage Differential (LVD) interface. Similar to previous models, the Ultrium Tape Drive 3580 can be attached to the iSeries™, pSeries™, xSeries™, AS/400®, RS/6000®, RS/6000 SP™ systems, Netfinity®, and non-IBM servers, workstations, and personal computers that support those interface specifications. A

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current list of supported open system configurations is available from the following Web site:

<http://www.ibm.com/storage/lto>

Select LTO Support, then the Interoperability Matrix and Software ISVs, and view the Supported Servers and Operating Systems for the product.

A power cord feature number, if applicable, should also be specified.

**Cables:** A SCSI cable is required for each server connection to a SCSI bus. If no cable is available, one should be specified on the initial order for each library. A SCSI differential terminator is included with each cable. An interposer may also be required for attachment to various server adapters.

*Features for specifying SCSI cables available, and their respective lengths*

The following cables are available for Ultra2 SCSI LVD or Ultra SCSI HVD attachment.

Cables with HD68 connectors on both ends:

- 5301 — 0.4 meters (for drive-to-drive connection)
- 5302 — 2.5 meters
- 5305 — 5 meters
- 5310 — 10 meters
- 5318 — 18 meters
- 5325 — 25 meters
- 9702 — 2.5 meters

Cables with a VHDCI connector on one end and an HD68 connector on the other end:

- 5602 — 2.5 meters
- 5604 — 4.5 meters
- 5610 — 10 meters
- 5620 — 20 meters
- 5625 — 25 meters
- 9703 — 2.5 meters

An interposer is required to connect a SCSI cable with HD68 connectors to a VHDCI connector. The following interposer is available:

- 5099 — VHDCI/HD68 Cable/Interposer

An inline terminator is required when attaching to Hewlett-Packard V-Class systems with adapter A4800A. The following inline terminator is available:

- 5098 — Inline HVD SCSI Terminator

Refer to the Special Features section of the Ultrium Tape Drive 3580 Sales Manual for detailed descriptions of these features.

### Software Requirements

The Ultrium 2 Tape Drive 3580 is supported on the following operating systems at the minimum levels indicated:

- OS/400® V5R1, or later
- AIX® V4.3.3, or later
- Sun Solaris 7, 8, 9
- Microsoft™ Windows NT® V4.0 with Service Pack 6
- Microsoft Windows® 2000 (build 2195, or greater)
- HP-UX 11.0 and HP-UX 11i (64-bit)

- Linux distributions: Linux 7.2 32-bit and 64-bit Kernels, Linux Red Hat 7.3, Red Hat Advanced Server 2.1, SuSE Linux Enterprise Server 7 Update

For a current list of host software versions and release levels that support the 3580, refer to the following Web site:

<http://www.ibm.com/storage/lto>

Select LTO Support, then the Interoperability Matrix and Software ISVs, and view the Supported Servers and Operating Systems for the product.

Tivoli® Storage Manager and other industry-leading compatible software offerings provide storage and tape management software for the 3580. Supporting software and applications must be obtained separately from IBM, IBM Business Partners, or independent software vendors (ISV). A list of compatible software is available from your IBM representative or at:

<http://www.ibm.com/storage/lto>

Select LTO Support, then the Interoperability Matrix and Software ISVs, and view the Supported Storage Management Software for the product.

IBM continues to work together with the ISVs to support the Ultrium Tape Drive 3580. Individual application vendors should be contacted for specific information and availability dates.

**Compatibility:** The IBM LTO Ultrium 2 Tape Drives can read and write original IBM LTO Ultrium Data Cartridges. The new LTO Ultrium 200 GB Data Cartridges can only be used on the new IBM LTO Ultrium 2 Tape Drives.

**Limitations:** Total HVD SCSI cable lengths are limited to 25 m (81 ft.) using point-to-point (that is, one host connected to only one tape drive), or multi-drop interconnection (that is, one host connected to more than one tape drive on the same SCSI bus). Stub length at each device must not exceed 0.2 m (0.66 ft).

Total LVD SCSI cable length is limited to 25 m (81 ft) using point-to-point interconnection. Total LVD SCSI cable length is 12 m (39 ft) using a multi-drop interconnection. Stub length at each device must not exceed 0.1 m (0.33 ft).

Installing more than one 3580 drive on a SCSI bus may impact tape drive or system performance. Intermixing of other SCSI devices on the same SCSI bus as the 3580 may impact performance of those devices.

### Planning Information

**Customer Responsibilities:** Physical planning is a customer responsibility. Detailed planning information is in the *IBM TotalStorage LTO Ultrium 2 Tape Drive 3580 Setup and Operator Guide* (GA32-0460). The Ultrium Tape Drive 3580 is designated as a customer setup unit (CSU). It is the customer's responsibility to install the unit. Customers are responsible for obtaining the appropriate SCSI adapters, cables, and interposers (if required) for system attachment. Customers are also responsible for ordering media. For optimum performance, the customer must obtain the latest level of firmware prior to installing the unit. Customers can download the latest level of firmware from the LTO Web site:

<http://www.storage.ibm.com/hardsoft/tape/lto/index.html>

**Cable Orders:** A SCSI cable is required to attach the 3580 to the server SCSI adapter. At least one SCSI cable should be specified on the initial plant order. A SCSI terminator is included with each IBM Ultrium Tape Drive. An interposer or interposers may be required for attachment to various server adapters. Customers are responsible for selecting and ordering the correct cables and interposers to match the IBM LTO Ultrium SCSI interface and the server SCSI interface.

Refer to the **Cables** section at the end of the **Hardware Requirements** for a list of available cables and interposers.

Refer to the Specify or Special Features section of the 3580 Sales Manual for a detailed description of the cables and interposers available.

**Installability:** Installation time for the Ultrium Tape Drive 3580 is approximately 0.5 — 0.7 hours.

### Packaging

| Product | Items Included   | Number of Boxes |
|---------|--|-----------------|
| 3580    | Ultrium 2 Tape Drive 3580<br>Power cord<br>SCSI terminator with each drive ordered<br>SCSI cable (2.5 m as specified or ordered)<br>Drive-to-drive SCSI cable<br>SCSI wrap tool<br>IBM TotalStorage LTO Ultrium 200 GB Data Cartridge<br>IBM TotalStorage LTO Ultrium Cleaning Cartridge (universal)<br>Setup and Operator Guide<br>Service Guide<br>Quick Reference Card, Warranty Card<br>Open Systems device drivers<br>Device Driver Installation and User's Guide | 1               |

### Supplies

#### For End Users

The IBM TotalStorage LTO Ultrium 200 GB Data Cartridges and the IBM TotalStorage LTO Cleaning Cartridge, for use in the Ultrium 2 Tape Drive, can be purchased from IBM using feature numbers with the initial order.

The part numbers for additional supplies are:

| IBM Part Number | Supply Item   |
|-----------------|---|
| 08L9870         | IBM TotalStorage LTO Ultrium 200GB Data Cartridge   |
| 35L2086         | IBM TotalStorage LTO Cleaning Cartridge (universal) |
| 08L9129         | Leader Pin Attachment Kit                           |
| 08L9130         | Manual Rewind Tool                                  |

For information about IBM branded media, such as additional IBM LTO Ultrium data or cleaning cartridges, call 888-IBM-MEDIA (426-6334) in the U.S. or Canada or refer to the following Web site:

<http://www.storage.ibm.com/media>

## Security, Auditability, and Control

This product uses the security and auditability features of the host hardware, software, and application software.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

## Terms and Conditions

This product is available for purchase under the terms of the IBM Customer Agreement.

IBM hardware products are manufactured from new parts, or new and used parts. In some cases, the hardware product may have been previously installed.

Regardless, IBM warranty terms apply.

**IBM Credit Corporation Financing:** Yes

**Warranty Period:** Three years. IBM 3580 media warranted separately.

**Warranty Service: IBM Customer Replaceable Unit (CRU) Service**

Prior to calling IBM Service, the customer is responsible for following IBM's published LTO diagnostic procedures including any needed update to the latest level of firmware. For details, refer to:

<http://ssddom02.storage.ibm.com/techsup/webnav.nsf/support/lto>

The IBM Support Center will assist with problem determination and initiate shipment of a replacement unit, if needed, to the customer's location. Transportation costs, both ways, are paid by IBM. The replacement unit becomes the property of the customer in exchange for the failed unit, which becomes the property of IBM. The customer must transfer the machine type, model, and serial number of the failing unit to the replacement unit. This is done by filling out the repair identification tag that is provided with the replacement unit. A Failure Analysis form is also included. The customer is responsible for packing the failed unit into the shipping carton that contained the replacement unit<sup>1</sup>, and contacting IBM to arrange for its collection<sup>2</sup>. Failure to return the failed unit to IBM within 30 days will result in the customer being billed for a new machine at list price. The customer is responsible for installing and setting up the replacement unit.

<sup>1</sup> Failure to use the carton in which the replacement unit was received, or failure to otherwise properly pack the returned unit, could result in charges being incurred by the customer for damage to the failed unit during shipment. Failure to fill out and affix the identification tag to the replacement unit with the machine type, model, and serial number of the failing unit could result in losing the warranty for the replacement unit.

<sup>2</sup> These terms cover most continental U.S. locations (cities defined by FedEx as H1/H2-designated locations). Call 800-GO-FEDEX (463-3339) for specific delivery schedule information.

**ServiceSuite™ and ServiceElect (formerly ESA) Maintenance:** For ServiceElect (Z125-5510) and ServiceSuite (Z125-5745) Statements of Work

Warranty Service Upgrades:

- IBM On-Site Exchange (IOE), 9 hours per day, Monday through Friday excluding holidays, next business day response
- IOE, 24 hours a day, 7 days a week, same-day response

**Maintenance Services:**

- IOE, 9 hours per day, Monday through Friday excluding holidays, next business day response
- IOE, 24 hours a day, 7 days a week, same-day response

**Maintenance Service:** The preferred go-to-market offerings are ServiceElect and ServiceSuite. However, ICA legacy contracts will still be available for current customers until they are withdrawn.

**Alternative Service (Warranty Service Upgrades):**

- IOE, 9 hours per day, Monday through Friday excluding holidays, next-business-day response
- IOE, 24 hours a day, 7 days a week, same-day response

**Maintenance Service:**

- IOE, 9 hours per day, Monday through Friday excluding holidays, next business day response

- IOE, 24 hours per day, 7 days a week, same day response

**Usage Plan Machine:** No

**IBM Hourly Service Rate Classification:** One

When a type of service involves the exchange of a machine part, the replacement may not be new, but will be in good working order.

**Rental Offering:** No

**Field-Installable Features:** Yes

**Model Conversions:** No

**Machine Installation:** Customer Setup, customers are responsible for installation according to the instructions IBM provides with the machine.

**Graduated Charges:** No

**Educational Allowance:** A reduced charge is available to qualified education customers. The educational allowance may not be added to any other discount or allowance.

## Prices

| Description                  | Machine Type | Model | Feature Number | Purchase Price | Field Install Only | Plant Install Only |
|------------------------------|--------------|-------|----------------|----------------|--------------------|--------------------|
| Ultrium 2 Tape Drive         | 3580         | H23   |                | \$6,500        |                    |                    |
| Custom QuickShip             |              |       | 1748           | 0              | N                  | Y                  |
| Inline HVD SCSI Terminator   |              |       | 5098           | 113            | N                  | N                  |
| VHDCI/HD68 Cable/ Interposer |              |       | 5099           | 127            | N                  | N                  |
| 0.4 m HD68/HD68 SCSI Cable   |              |       | 5301           | 88             | N                  | N                  |
| 2.5 m HD68/HD68 SCSI Cable   |              |       | 5302           | 106            | N                  | N                  |
| 5 m HD68/HD68 SCSI Cable     |              |       | 5305           | 124            | N                  | N                  |
| 10 m HD68/HD68 SCSI Cable    |              |       | 5310           | 159            | N                  | N                  |
| 18 m HD68/HD68 SCSI Cable    |              |       | 5318           | 212            | N                  | N                  |
| 25 m HD68/HD68 SCSI Cable    |              |       | 5325           | 280            | N                  | N                  |
| 2.5 m VHDCI/HD68 SCSI Cable  |              |       | 5602           | 116            | N                  | N                  |
| 4.5 m VHDCI/HD68 SCSI Cable  |              |       | 5604           | 138            | N                  | N                  |
| 10 m VHDCI/HD68 SCSI Cable   |              |       | 5610           | 176            | N                  | N                  |
| 20 m VHDCI/HD68 SCSI Cable   |              |       | 5620           | 265            | N                  | N                  |
| 25 m VHDCI/HD68 SCSI Cable   |              |       | 5625           | 318            | N                  | N                  |
| 1 Cleaning Cartridge         |              |       | 8002           | 103            | N                  | Y                  |
| 1 Ultrium 2 Data Cartridge   |              |       | 8101           | 138            | N                  | Y                  |
| Rack Mount Kit               |              |       | 8723           | 141            | N                  | N                  |
| Attached to HP-UX System     |              |       | 9210           | 0              | N                  | N                  |

| Description                                 | Machine Type | Model | Feature Number | Purchase Price | Field Install Only | Plant Install Only |
|---|--------------|-------|----------------|----------------|--------------------|--------------------|
| Attached to Sun System                      |              |       | 9211           | \$ 0           | N                  | N                  |
| Attached to Windows System                  |              |       | 9212           | 0              | N                  | N                  |
| Attached to Other Non-IBM System            |              |       | 9213           | 0              | N                  | N                  |
| Attached to Linux System                    |              |       | 9215           | 0              | N                  | N                  |
| Attached to AS/400 System                   |              |       | 9400           | 0              | N                  | N                  |
| Attached to RS/6000 System                  |              |       | 9600           | 0              | N                  | N                  |
| 2.5 m HD68/HD68 SCSI Cable                  |              |       | 9702           | NC             | N                  | Y                  |
| 2.5 m VHDCI/HD68 SCSI Cable                 |              |       | 9703           | NC             | N                  | Y                  |
| 2.7 m Power Cords:                          |              |       |                |                |                    |                    |
| 125 V, 15A, U.S./Canada                     |              |       | 9800           | NC             | N                  | Y                  |
| 250 V, 16A (AC) France, Germany, and others |              |       | 9820           | NC             | N                  | Y                  |
| 250 V, 11A, Denmark                         |              |       | 9821           | NC             | N                  | Y                  |
| 250 V, 13A, UK, China, and others           |              |       | 9825           | NC             | N                  | Y                  |
| 250 V, 6-16A, Israel and others             |              |       | 9827           | NC             | N                  | Y                  |
| 255 V, 10A, Switzerland                     |              |       | 9828           | NC             | N                  | Y                  |
| 250 V, 16A, So. Africa and others           |              |       | 9829           | NC             | N                  | Y                  |
| 250 V, 10A and 16A, Italy                   |              |       | 9830           | NC             | N                  | Y                  |
| 250 V, 10A, Australia                       |              |       | 9831           | NC             | N                  | Y                  |
| 250 V, 15A, U.S./Canada                     |              |       | 9833           | NC             | N                  | Y                  |
| 250 V, 10A, Uruguay and others              |              |       | 9834           | NC             | N                  | Y                  |
| Rack Power Cord — Double                    |              |       | 9861           | NC             | N                  | Y                  |
| Power Cord, 1.8 m, Chicago                  |              |       | 9986           | NC             | N                  | Y                  |
| Ultrium 2 Tape Drive                        | 3580         | L23   |                | 6,200          |                    |                    |
| Custom QuickShip                            |              |       | 1748           | 0              | N                  | Y                  |
| VHDCI/HD68 Cable/ Interposer                |              |       | 5099           | 127            | N                  | N                  |
| 0.4 m HD68/HD68 SCSI Cable                  |              |       | 5301           | 88             | N                  | N                  |
| 2.5 m HD68/HD68 SCSI Cable                  |              |       | 5302           | 106            | N                  | N                  |
| 5 m HD68/HD68 SCSI Cable                    |              |       | 5305           | 124            | N                  | N                  |
| 10 m HD68/HD68 SCSI Cable                   |              |       | 5310           | 159            | N                  | N                  |
| 18 m HD68/HD68 SCSI Cable                   |              |       | 5318           | 212            | N                  | N                  |
| 25 m HD68/HD68 SCSI Cable                   |              |       | 5325           | 280            | N                  | N                  |
| 2.5 m VHDCI/HD68 SCSI Cable                 |              |       | 5602           | 116            | N                  | N                  |
| 4.5 m VHDCI/HD68 SCSI Cable                 |              |       | 5604           | 138            | N                  | N                  |
| 10 m VHDCI/HD68 SCSI Cable                  |              |       | 5610           | 176            | N                  | N                  |
| 20 m VHDCI/HD68 SCSI Cable                  |              |       | 5620           | 265            | N                  | N                  |



| Description                                 | Machine Type | Model | Feature Number | Purchase Price | Field Install Only | Plant Install Only |
|---|--------------|-------|----------------|----------------|--------------------|--------------------|
| 25 m VHDCI/HD68 SCSI Cable                  |              |       | 5625           | \$ 318         | N                  | N                  |
| 1 Cleaning Cartridge                        |              |       | 8002           | 103            | N                  | Y                  |
| 1 Ultrium 2 Data Cartridge                  |              |       | 8101           | 138            | N                  | Y                  |
| Rack Mount Kit                              |              |       | 8723           | 141            | N                  | N                  |
| Attached to HP-UX System                    |              |       | 9210           | 0              | N                  | N                  |
| Attached to Sun System                      |              |       | 9211           | 0              | N                  | N                  |
| Attached to Windows System                  |              |       | 9212           | 0              | N                  | N                  |
| Attached to Other Non-IBM System            |              |       | 9213           | 0              | N                  | N                  |
| Attached to Linux System                    |              |       | 9215           | 0              | N                  | N                  |
| Attached to AS/400 System                   |              |       | 9400           | 0              | N                  | N                  |
| Attached to RS/6000 System                  |              |       | 9600           | 0              | N                  | N                  |
| 2.5 m HD68/HD68 SCSI Cable                  |              |       | 9702           | NC             | N                  | Y                  |
| 2.5 m VHDCI/HD68 SCSI Cable                 |              |       | 9703           | NC             | N                  | Y                  |
| 2.7 m Power Cords:                          |              |       |                |                |                    |                    |
| 125 V, 15A, U.S./Canada                     |              |       | 9800           | NC             | N                  | Y                  |
| 250 V, 16A (AC) France, Germany, and others |              |       | 9820           | NC             | N                  | Y                  |
| 250 V, 11A, Denmark                         |              |       | 9821           | NC             | N                  | Y                  |
| 250 V, 13A, UK, China, and others           |              |       | 9825           | NC             | N                  | Y                  |
| 250 V, 6-16A, Israel and others             |              |       | 9827           | NC             | N                  | Y                  |
| 255 V, 10A, Switzerland                     |              |       | 9828           | NC             | N                  | Y                  |
| 250 V, 16A, So. Africa and others           |              |       | 9829           | NC             | N                  | Y                  |
| 250 V, 10A and 16A, Italy                   |              |       | 9830           | NC             | N                  | Y                  |
| 250 V, 10A, Australia                       |              |       | 9831           | NC             | N                  | Y                  |
| 250 V, 15A, U.S./Canada                     |              |       | 9833           | NC             | N                  | Y                  |
| 250 V, 10A, Uruguay and others              |              |       | 9834           | NC             | N                  | Y                  |
| Rack Power Cord — Double                    |              |       | 9861           | NC             | N                  | Y                  |
| Power Cord, 1.8 m, Chicago                  |              |       | 9986           | NC             | N                  | Y                  |

NC = No Charge  
N = No  
Y = Yes

There are no field MES removals for the 3580.

**Note:** The power cord features are used in the country listed and other countries. Refer to the specific listings below for specific country availability or contact your IBM representative.

# Annual Minimum Maintenance Charges

## Warranty Service Upgrade

| Description                                 | Machine Type | Model | Feature Number | IE8 IBM   | IOE IBM    |
|---|--------------|-------|----------------|-----------|------------|
|   |              |       |                | IOE 9 x 5 | IOE 24 x 7 |
| Ultrium 2 Tape Drive                        | 3580         | H23   |                | \$900     | \$1,200    |
| Custom QuickShip                            |              |       | 1748           | NC        | NC         |
| Inline HVD SCSI Terminator                  |              |       | 5098           | NC        | NC         |
| VHDCI/HD68 Cable/Interposer                 |              |       | 5099           | NC        | NC         |
| 0.4 m HD68/HD68 SCSI Cable                  |              |       | 5301           | NC        | NC         |
| 2.5 m HD68/HD68 SCSI Cable                  |              |       | 5302           | NC        | NC         |
| 5 m HD68/HD68 SCSI Cable                    |              |       | 5305           | NC        | NC         |
| 10 m HD68/HD68 SCSI Cable                   |              |       | 5310           | NC        | NC         |
| 18 m HD68/HD68 SCSI Cable                   |              |       | 5318           | NC        | NC         |
| 25 m HD68/HD68 SCSI Cable                   |              |       | 5325           | NC        | NC         |
| 2.5 m VHDCI/HD68 SCSI Cable                 |              |       | 5602           | NC        | NC         |
| 4.5 m VHDCI/HD68 SCSI Cable                 |              |       | 5604           | NC        | NC         |
| 10 m VHDCI/HD68 SCSI Cable                  |              |       | 5610           | NC        | NC         |
| 20 m VHDCI/HD68 SCSI Cable                  |              |       | 5620           | NC        | NC         |
| 25 m VHDCI/HD68 SCSI Cable                  |              |       | 5625           | NC        | NC         |
| 1 Cleaning Cartridge                        |              |       | 8002           | NC        | NC         |
| 1 Ultrium 2 Data Cartridge                  |              |       | 8101           | NC        | NC         |
| Rack Mount Kit                              |              |       | 8723           | NC        | NC         |
| Attached to HP-UX System                    |              |       | 9210           | NC        | NC         |
| Attached to Sun System                      |              |       | 9211           | NC        | NC         |
| Attached to Windows System                  |              |       | 9212           | NC        | NC         |
| Attached to Other Non-IBM System            |              |       | 9213           | NC        | NC         |
| Attached to Linux System                    |              |       | 9215           | NC        | NC         |
| Attached to AS/400 System                   |              |       | 9400           | NC        | NC         |
| Attached to RS/6000 System                  |              |       | 9600           | NC        | NC         |
| 2.5 m HD68/HD68 SCSI Cable                  |              |       | 9702           | NC        | NC         |
| 2.5 m VHDCI/HD68 SCSI Cable                 |              |       | 9703           | NC        | NC         |
| 2.7 m Power Cords:                          |              |       |                |           |            |
| 125 V, 15A, U.S./Canada                     |              |       | 9800           | NC        | NC         |
| 250 V, 16A (AC) France, Germany, and others |              |       | 9820           | NC        | NC         |
| 250 V, 11A, Denmark                         |              |       | 9821           | NC        | NC         |
| 250 V, 13A, UK, China, and others           |              |       | 9825           | NC        | NC         |
| 250 V, 6-16A, Israel and others             |              |       | 9827           | NC        | NC         |
| 255 V, 10A, Switzerland                     |              |       | 9828           | NC        | NC         |
| 250 V, 16A, So. Africa and others           |              |       | 9829           | NC        | NC         |
| 250 V, 10A and 16A, Italy                   |              |       | 9830           | NC        | NC         |
| 250 V, 10A, Australia                       |              |       | 9831           | NC        | NC         |
| 250 V, 15A, U.S./Canada                     |              |       | 9833           | NC        | NC         |
| 250 V, 10A, Uruguay and others              |              |       | 9834           | NC        | NC         |
| Rack Power Cord — Double                    |              |       | 9861           | NC        | NC         |
| Power Cord, 1.8 m, Chicago                  |              |       | 9986           | NC        | NC         |
| Ultrium 2 Tape Drive                        | 3580         | L23   |                | 900       | 1,200      |
| Custom QuickShip                            |              |       | 1748           | NC        | NC         |
| VHDCI/HD68 Cable/Interposer                 |              |       | 5099           | NC        | NC         |
| 0.4 m HD68/HD68 SCSI Cable                  |              |       | 5301           | NC        | NC         |
| 2.5 m HD68/HD68 SCSI Cable                  |              |       | 5302           | NC        | NC         |
| 5 m HD68/HD68 SCSI Cable                    |              |       | 5305           | NC        | NC         |
| 10 m HD68/HD68 SCSI Cable                   |              |       | 5310           | NC        | NC         |
| 18 m HD68/HD68 SCSI Cable                   |              |       | 5318           | NC        | NC         |
| 25 m HD68/HD68 SCSI Cable                   |              |       | 5325           | NC        | NC         |
| 2.5 m VHDCI/HD68 SCSI Cable                 |              |       | 5602           | NC        | NC         |
| 4.5 m VHDCI/HD68 SCSI Cable                 |              |       | 5604           | NC        | NC         |
| 10 m VHDCI/HD68 SCSI Cable                  |              |       | 5610           | NC        | NC         |
| 20 m VHDCI/HD68 SCSI Cable                  |              |       | 5620           | NC        | NC         |
| 25 m VHDCI/HD68 SCSI Cable                  |              |       | 5625           | NC        | NC         |
| 1 Cleaning Cartridge                        |              |       | 8002           | NC        | NC         |
| 1 Ultrium 2 Data Cartridge                  |              |       | 8101           | NC        | NC         |
| Rack Mount Kit                              |              |       | 8723           | NC        | NC         |
| Attached to HP-UX System                    |              |       | 9210           | NC        | NC         |
| Attached to Sun System                      |              |       | 9211           | NC        | NC         |
| Attached to Windows System                  |              |       | 9212           | NC        | NC         |
| Attached to Other Non-IBM System            |              |       | 9213           | NC        | NC         |
| Attached to Linux System                    |              |       | 9215           | NC        | NC         |
| Attached to AS/400 System                   |              |       | 9400           | NC        | NC         |
| Attached to RS/6000 System                  |              |       | 9600           | NC        | NC         |

| <b>Description</b>                          | <b>Machine Type</b> | <b>Model</b> | <b>Feature Number</b> | <b>IE8 IBM IOE 9 x 5</b> | <b>IOE IBM IOE 24 x 7</b> |
|---|---------------------|--------------|-----------------------|--------------------------|---------------------------|
| 2.5 m HD68/HD68 SCSI Cable                  |                     |              | 9702                  | NC                       | NC                        |
| 2.5 m VHDCI/HD68 SCSI Cable                 |                     |              | 9703                  | NC                       | NC                        |
| 2.7 m Power Cords:                          |                     |              |                       |                          |                           |
| 125 V, 15A, U.S./Canada                     |                     |              | 9800                  | NC                       | NC                        |
| 250 V, 16A (AC) France, Germany, and others |                     |              | 9820                  | NC                       | NC                        |
| 250 V, 11A, Denmark                         |                     |              | 9821                  | NC                       | NC                        |
| 250 V, 13A, UK, China, and others           |                     |              | 9825                  | NC                       | NC                        |
| 250 V, 6-16A, Israel and others             |                     |              | 9827                  | NC                       | NC                        |
| 255 V, 10A, Switzerland                     |                     |              | 9828                  | NC                       | NC                        |
| 250 V, 16A, So. Africa and others           |                     |              | 9829                  | NC                       | NC                        |
| 250 V, 10A and 16A, Italy                   |                     |              | 9830                  | NC                       | NC                        |
| 250 V, 10A, Australia                       |                     |              | 9831                  | NC                       | NC                        |
| 250 V, 15A, U.S./Canada                     |                     |              | 9833                  | NC                       | NC                        |
| 250 V, 10A, Uruguay and others              |                     |              | 9834                  | NC                       | NC                        |
| Rack Power Cord — Double                    |                     |              | 9861                  | NC                       | NC                        |
| Power Cord, 1.8 m, Chicago                  |                     |              | 9986                  | NC                       | NC                        |

#### Maintenance Service

| <b>Description</b>                          | <b>Machine Type</b> | <b>Model</b> | <b>Feature Number</b> | <b>IE8 IBM IOE 9 x 5</b> | <b>IOE IBM IOE 24 x 7</b> |
|---|---------------------|--------------|-----------------------|--------------------------|---------------------------|
| Ultrium 2 Tape Drive                        | 3580                | H23          |                       | \$900                    | \$1,260                   |
| Custom QuickShip                            |                     |              | 1748                  | NC                       | NC                        |
| Inline HVD SCSI Terminator                  |                     |              | 5098                  | NC                       | NC                        |
| VHDCI/HD68 Cable/Interposer                 |                     |              | 5099                  | NC                       | NC                        |
| 0.4 m HD68/HD68 SCSI Cable                  |                     |              | 5301                  | NC                       | NC                        |
| 2.5 m HD68/HD68 SCSI Cable                  |                     |              | 5302                  | NC                       | NC                        |
| 5 m HD68/HD68 SCSI Cable                    |                     |              | 5305                  | NC                       | NC                        |
| 10 m HD68/HD68 SCSI Cable                   |                     |              | 5310                  | NC                       | NC                        |
| 18 m HD68/HD68 SCSI Cable                   |                     |              | 5318                  | NC                       | NC                        |
| 25 m HD68/HD68 SCSI Cable                   |                     |              | 5325                  | NC                       | NC                        |
| 2.5 m VHDCI/HD68 SCSI Cable                 |                     |              | 5602                  | NC                       | NC                        |
| 4.5 m VHDCI/HD68 SCSI Cable                 |                     |              | 5604                  | NC                       | NC                        |
| 10 m VHDCI/HD68 SCSI Cable                  |                     |              | 5610                  | NC                       | NC                        |
| 20 m VHDCI/HD68 SCSI Cable                  |                     |              | 5620                  | NC                       | NC                        |
| 25 m VHDCI/HD68 SCSI Cable                  |                     |              | 5625                  | NC                       | NC                        |
| 1 Cleaning Cartridge                        |                     |              | 8002                  | NC                       | NC                        |
| 1 Ultrium 2 Data Cartridge                  |                     |              | 8101                  | NC                       | NC                        |
| Rack Mount Kit                              |                     |              | 8723                  | NC                       | NC                        |
| Attached to HP-UX System                    |                     |              | 9210                  | NC                       | NC                        |
| Attached to Sun System                      |                     |              | 9211                  | NC                       | NC                        |
| Attached to Windows System                  |                     |              | 9212                  | NC                       | NC                        |
| Attached to Other Non-IBM System            |                     |              | 9213                  | NC                       | NC                        |
| Attached to Linux System                    |                     |              | 9215                  | NC                       | NC                        |
| Attached to AS/400 System                   |                     |              | 9400                  | NC                       | NC                        |
| Attached to RS/6000 System                  |                     |              | 9600                  | NC                       | NC                        |
| 2.5 m HD68/HD68 SCSI Cable                  |                     |              | 9702                  | NC                       | NC                        |
| 2.5 m VHDCI/HD68 SCSI Cable                 |                     |              | 9703                  | NC                       | NC                        |
| 2.7 m Power Cords:                          |                     |              |                       |                          |                           |
| 125 V, 15A, U.S./Canada                     |                     |              | 9800                  | NC                       | NC                        |
| 250 V, 16A (AC) France, Germany, and others |                     |              | 9820                  | NC                       | NC                        |
| 250 V, 11A, Denmark                         |                     |              | 9821                  | NC                       | NC                        |
| 250 V, 13A, UK, China, and others           |                     |              | 9825                  | NC                       | NC                        |
| 250 V, 6-16A, Israel and others             |                     |              | 9827                  | NC                       | NC                        |
| 255 V, 10A, Switzerland                     |                     |              | 9828                  | NC                       | NC                        |
| 250 V, 16A, So. Africa and others           |                     |              | 9829                  | NC                       | NC                        |
| 250 V, 10A and 16A, Italy                   |                     |              | 9830                  | NC                       | NC                        |
| 250 V, 10A, Australia                       |                     |              | 9831                  | NC                       | NC                        |
| 250 V, 15A, U.S./Canada                     |                     |              | 9833                  | NC                       | NC                        |
| 250 V, 10A, Uruguay and others              |                     |              | 9834                  | NC                       | NC                        |
| Rack Power Cord — Double                    |                     |              | 9861                  | NC                       | NC                        |
| Power Cord, 1.8 m, Chicago                  |                     |              | 9986                  | NC                       | NC                        |
| Ultrium 2 Tape Drive                        | 3580                | L23          |                       | 900                      | 1,260                     |
| Custom QuickShip                            |                     |              | 1748                  | NC                       | NC                        |
| VHDCI/HD68 Cable/Interposer                 |                     |              | 5099                  | NC                       | NC                        |
| 0.4 m HD68/HD68 SCSI Cable                  |                     |              | 5301                  | NC                       | NC                        |

| Description                                    | Machine<br>Type | Model | Feature<br>Number | IE8 IBM<br>IOE<br>9 x 5 | IOE IBM<br>IOE<br>24 x 7 |
|--|-----------------|-------|-------------------|-------------------------|--------------------------|
| 2.5 m HD68/HD68 SCSI Cable                     |                 |       | 5302              | NC                      | NC                       |
| 5 m HD68/HD68 SCSI Cable                       |                 |       | 5305              | NC                      | NC                       |
| 10 m HD68/HD68 SCSI Cable                      |                 |       | 5310              | NC                      | NC                       |
| 18 m HD68/HD68 SCSI Cable                      |                 |       | 5318              | NC                      | NC                       |
| 25 m HD68/HD68 SCSI Cable                      |                 |       | 5325              | NC                      | NC                       |
| 2.5 m VHDCI/HD68 SCSI Cable                    |                 |       | 5602              | NC                      | NC                       |
| 4.5 m VHDCI/HD68 SCSI Cable                    |                 |       | 5604              | NC                      | NC                       |
| 10 m VHDCI/HD68 SCSI Cable                     |                 |       | 5610              | NC                      | NC                       |
| 20 m VHDCI/HD68 SCSI Cable                     |                 |       | 5620              | NC                      | NC                       |
| 25 m VHDCI/HD68 SCSI Cable                     |                 |       | 5625              | NC                      | NC                       |
| 1 Cleaning Cartridge                           |                 |       | 8002              | NC                      | NC                       |
| 1 Ultrium 2 Data Cartridge                     |                 |       | 8101              | NC                      | NC                       |
| Rack Mount Kit                                 |                 |       | 8723              | NC                      | NC                       |
| Attached to HP-UX System                       |                 |       | 9210              | NC                      | NC                       |
| Attached to Sun System                         |                 |       | 9211              | NC                      | NC                       |
| Attached to Windows System                     |                 |       | 9212              | NC                      | NC                       |
| Attached to Other Non-IBM System               |                 |       | 9213              | NC                      | NC                       |
| Attached to Linux System                       |                 |       | 9215              | NC                      | NC                       |
| Attached to AS/400 System                      |                 |       | 9400              | NC                      | NC                       |
| Attached to RS/6000 System                     |                 |       | 9600              | NC                      | NC                       |
| 2.5 m HD68/HD68 SCSI Cable                     |                 |       | 9702              | NC                      | NC                       |
| 2.5 m VHDCI/HD68 SCSI Cable                    |                 |       | 9703              | NC                      | NC                       |
| 2.7 m Power Cords:                             |                 |       |                   |                         |                          |
| 125 V, 15A, U.S./Canada                        |                 |       | 9800              | NC                      | NC                       |
| 250 V, 16A (AC) France, Germany,<br>and others |                 |       | 9820              | NC                      | NC                       |
| 250 V, 11A, Denmark                            |                 |       | 9821              | NC                      | NC                       |
| 250 V, 13A, UK, China, and others              |                 |       | 9825              | NC                      | NC                       |
| 250 V, 6-16A, Israel and others                |                 |       | 9827              | NC                      | NC                       |
| 255 V, 10A, Switzerland                        |                 |       | 9828              | NC                      | NC                       |
| 250 V, 16A, So. Africa and others              |                 |       | 9829              | NC                      | NC                       |
| 250 V, 10A and 16A, Italy                      |                 |       | 9830              | NC                      | NC                       |
| 250 V, 10A, Australia                          |                 |       | 9831              | NC                      | NC                       |
| 250 V, 15A, U.S./Canada                        |                 |       | 9833              | NC                      | NC                       |
| 250 V, 10A, Uruguay and others                 |                 |       | 9834              | NC                      | NC                       |
| Rack Power Cord — Double                       |                 |       | 9861              | NC                      | NC                       |
| Power Cord, 1.8 m, Chicago                     |                 |       | 9986              | NC                      | NC                       |

NC = No Charge

IOE = On-Site Exchange

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