Compiled by Trevor Eddolls of *i*Tech-Ed

Glossary of Terminology

Definitions of some mainframe-related terms

This glossary is intended as an *aide memoire* for experienced mainframers and a useful reference for those new to the z/OS world. If you would like to suggest any new entries for the next edition, please send them to mainframe@arcati.com (we will even list you as a contributor!).

3270
IBM's family of dumb, block-mode synchronous screen and printer terminals, which became the standard for terminal/mainframe connectivity.

3270 data stream
Format used by 3270 devices for communication, and much used for emulation to make PCs look like dumb terminals.

5250
Terminal standard for the iSeries/400, System/3x etc.

ABARS
Aggregate Backup And Recovery Support. A disaster recovery feature within DFSMShsm for automatically creating files containing back-ups of critical data. The main use of ABARS is to group all the datasets relating to a particular application together.

Abend
ABnormal ENDing. IBMspeak for an unexpected termination to a program run, eg a crash.

Above the line
In z/OS, z/VM, and VSE/ESA, above the line refers to virtual/real memory locations with an address greater than 16MB. The 16MB limit resulted from earlier operating systems supporting 24-bit addressing.

ACB
Access Control Block. The control block used to tie an application program to a VSAM dataset.

Access control
Enforcing rules governing use of computer resources by restricting both the use and type of use to authorized individuals and the computer resources they are responsible for.

Access method
IBM-specific jargon for software that moves data between main storage and I/O devices.

ACF/VTAM
Advanced Communications Function / Virtual Telecommunications Access Method is IBM's proprietary telecommunications software.

ACID
This acronym describes the properties of a transaction. Atomicity refers to a transaction's changes to the state – either it all happens or nothing happens. Consistency refers to the state of a transaction. It must not violate any of the integrity constraints associated with the state. Isolation refers to the transaction not being affected by others. Durability refers to the survival of changes to state after a transaction completes.

ACL (1)
Access Control Lists control which users or groups of users can access which files and programs. They are part of the security system and are checked by RACF.

ACL (2)
Automated Cartridge Library. Synonymous with ATL (Automated Tape Library).

ACO
Automated Console Operations. Automated procedures that replace or reduce the number of actions an operator takes from a console in response to system or network activities.

ADA
Programming language much loved by the military (ADA is a US government standard), which uses it for writing systems for controlling guided missiles and the like. Withdrawn August 1994.

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Address Resolution Protocol
The Internet Protocol (IP) used to dynamically map IP addresses to physical hardware Media Access Control (MAC) addresses.

Address space
The virtual storage allocated to an executing task in a mainframe. Generally used within z/OS to mean the space used by one of batch job, system task, or TSO user.

Agile
A modern alternative to waterfall models of project development in which requirements and solutions emerge through collaborative working between developers and users. It results in rapid changes and innovative solutions to problems.

AIX
Advanced Interactive eXecutive. IBM's version of Unix for mid-range systems (System p). It is one of four commercial operating systems that are certified to The Open Group's UNIX 03 standard. It is currently supported on IBM Power Systems alongside IBM i and Linux.

AJAX
Asynchronous Javascript And XML is a way of creating interactive Web applications using a group of technologies together. These technologies include XHTML (or HTML) and CSS; the Document Object Model; and the XMLHttpRequest object.

AMASPZAP
z/OS batch utility to apply a fix directly to object code *in situ*. Often protected against unauthorized use because of its additional ability to make direct changes to disk.

AMODE
Addressing MODE. Attribute of z/OS programs indicating the length (in bits) of the addresses used in the program. Introduced in MVS/XA to differentiate between the then new 31-bit addressing that expanded the addressable space from 16MB (24 bit) to 2GB. z/OS introduced 64-bit addressing.

AMS
Access Method Services. z/OS and VSE subsystem for performing various data-related actions on VSAM and ICF catalogs, including defining VSAM datasets, and deleting and copying most dataset types. In short, a multi-purpose utility. Also known as IDCAMS because that is the program name.

APAR
Authorized Program Analysis Report. An official report of a software error to IBM. Also used to refer to the patch supplied by IBM to fix the error (PTF is the correct term).

API
Application Program(ming) Interface. Documented programming procedures to access a given piece of software; typically an entry point name and parameter list. The re-use of APIs can speed up application development.

APL
A Programming Language, conceived within IBM by K E Iverson, and popular on the mainframe in the late '70s and early '80s to support end-user activities.

APM
Application Performance Management monitors and manages the performance and availability of software applications in order to meet business needs.

App
This usually refers to a mobile application found on Android and Apple smartphones and tablets.

Applet
A small application program written in the Java that can be retrieved from a Web server and executed in a browser.

APPN
Advanced Peer-to-Peer Networking architecture is an enhancement to SNA architecture. It can handle dynamic multipath routing.

ARM
Automatic Restart Management is a sysplex-wide integrated restart mechanism that can restart MVS subsystems after an abend, restart workloads on another MVS image after an MVS failure, and restart a failed MVS image.

AS/400
Application System/400. IBM's mid-range processor, announced in June 1988. It was replaced by the IBM Power Systems in April 2008.

ASCII
American Standard Code for Information Interchange. A modification of the international code which has become a *de facto* standard (except for IBM which also uses the EBCDIC code) for transmitting data. Uses seven bits plus a parity bit, and includes alphanumeric and control characters. ASCII must be converted to EBCDIC for uploading to IBM mainframes.

ASM
Auxiliary Storage Manager. The part of z/OS that looks after the I/O operations relating to paging – specifically the pages and page slots on external storage (typically DASD).

Assembler
Programming language that allows the user to get close to the hardware on IBM mainframes. Assembler statements correspond one-to-one with mainframe, machine-level instructions.

ATL
Automated Tape Library (also known as Automated Cartridge System – ACS, tape silo, or silo). Type of mass storage system (MSS) in which industry standard tapes are loaded by a robotic arm.

Augmented reality
Using a device, such as a smartphone or tablet, to view an object, such as server, and see on that device additional information about the object – such as performance information.

Auxiliary storage
All storage needing a channel I/O to access it (basically cache, SSD, disk, tape, mass storage).

AWLC
Advanced Workload License Charges is a new monthly licence pricing metric from IBM and applies to z196s.

Backout
A process that removes all database updates performed by an application that has abended (qv).

BAL
Basic Assembler Language. The machine language on the original S/360 from which the modern Assembler languages are derived.

Bandwidth
A measure of how fast a network can transfer information, originally measured in Hertz (Hz), but now used for any measure of network throughput. The more precise definition: frequency range within a radiation band required to transmit a particular signal. Measures the difference between the highest and lowest signal frequencies in millions of cycles per second.

BASIC
Beginners All-purpose Symbolic Instruction Code. Universal interactive programming language.

Batch
An accumulation of data brought together for processing or transmission, usually unattended. Less formally, the processing of such data, as opposed to online processing where a user is present to respond interactively.

BCD
Binary-Coded Decimal. A binary-coded notation in which each of the decimal digits is represented by a binary numeral. This differs from the pure binary notation, where the entire number is represented as a single binary numeral.

BCS
The Basic Catalog Structure and the VVDS are the two parts of the ICF catalog. The BCS contains dataset and alias names and volume serial numbers.

BCU
A Balanced Configuration Unit comprises processor memory, I/O, storage, and DB2 resources. It is the smallest combination of these that work together efficiently. As more work is added to the system, so more BCUs can be added. This avoids any one component being too big in terms of the others.

BDAM
Basic Direct Access Method allows programmers to access specific blocks of data on DASD.

Benchmark
An agreed workload used as a standard against which to compare the performance of different hardware/software. For a benchmark to be useful it needs to be a public standard.

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Big Data
The SNA/APPN command used to activate an LU-LU session following the successful completion of the SNA/APPN session initiation processing.

Big SQL
This allows users to access Hadoop-based data using familiar SQL statements. It utilizes InfoSphere BigInsights.

Bimodal IT
Gartner's management of IT model where one strand is very conservative and unwilling to change and the other strand embraces rapid application development and is tightly linked to business needs.

BIND
The SNA/APPN command used to activate an LU-LU session following the successful completion of the SNA/APPN session initiation processing.

BIOS
Basic Input/Output System. The I/O component of a simple operating system defining the interface between the operating system and the outside world.

Bitcoins
Bitcoins originated in a 2008 concept paper by Satoshi Nakamoto. Bitcoins are a virtual currency that are 'mined' by solving complex algorithms and are usually stored in a digital wallet. Bitcoin exchanges are completely private, which makes them popular with criminals! Many legitimate companies offer products for sale using bitcoins.

BLOB
Binary Large OBject. A generic term for a file containing some kind of binary data (text, image, document, sound, etc). Typically BLOBs can be transferred and manipulated across a wide range of platforms.

Block
A string of data elements, such as characters, words, or physical records, that are recorded or transmitted as a unit.

Bluemix
Bluemix is an open-standards, cloud-based platform for building, managing, and running all types of apps, for Web, mobile, big data, and smart devices. It includes Java, mobile back-end development, and application monitoring, all provided as-a-service in the cloud.

BMS
Basic Mapping Support. An interface between CICS and an application to control the movement and presentation of datastreams to and from a dumb terminal. BMS allows data to be displayed without allowing for display-dependent formatting characters.

Boolean
An operation that follows the rules of Boolean algebra.

Boot
To prepare a computer system for operation by loading an operating system.

BPAM
Basic Partitioned Access Method is a low-level access method used to access Partitioned DataSets (PDSs).

BSAM
Basic Sequential Access Method, along with QSAM, is an access method used to access sequential datasets.

Bus
Generic term in data communications to describe a wiring topology (such as that used in Ethernet) in which devices are connected along a single linear medium.

BYOD
Bring your own device is the policy many companies are adopting to allow employees to bring their own mobile devices (laptops, tablets, and smartphones) to their workplace, and to use those devices to access privileged company information and applications.

BYOI
Bring Your Own Identity is the growing practice of taking a validated identity with you and so not needing to remember different user-ids and passwords for different environments. There are security issues.

Byte
A string of 8 bits that represents one EBCDIC character. The IBM mainframe architecture is organized around the concept of the byte.

C
A programming language developed at Bell Labs in 1972, so named because its predecessor was named B. Unix was written in C.

C/C++
An optional, separately priced feature of z/OS, available with or without Debug Tool. The C/C++ IBM Open Class Library is included with z/OS, but is only enabled when C/C++ is licensed.

Cache
High-speed buffer between a fast device and a slow device. In large IBM systems cacheing may take place in the CPU (in main or expanded storage), the controller, device head-of-string, or the device itself (eg in a track buffer). It is used to reduce access time.

Capacity on Demand
Processors can be purchased with extra capacity already on-board but not functioning. When extra capacity is required at a site, it is turned on. This is non-disruptive and customers don't pay for the extra capacity until they start using it.

Catalog
A dataset that contains information about other datasets, eg type, location, size, format. The z/OS master catalog usually also contains entries for user catalogs.

CCL
Communication Controller for Linux (CCL) on zSeries runs the Network Control Program (NCP) software product in Linux, enabling users to get rid of their legacy 3745 communication controllers running NCP-based SNA workloads to zSeries servers.

CDS
Configuration DataSet.

CGI
Common Gateway Interface. A mechanism used by HTTP servers to invoke arbitrary programs for additional processing of certain requests; typically, those involving database access.

Change management
The methodology for planning and controlling software changes.

Channel
A specialized computer used in the IBM mainframe architecture to control transfers between devices and the processor unit. The channel offloads some of the processing associated with I/O from the main CPU.

Channel adapter
Hardware unit to attach a channel to a processor.

Channel attached
Devices that are directly attached to the processor by cable rather than over a communications link.

Channels
CICS TS 3.1 introduced a replacement for size-restricted COMMAREAs – they are channels and containers. Any number of containers can be passed between programs and they are grouped together in channels.

CHPID
CHannel Path IDentifier. A single byte binary value used to uniquely identify each channel path on an eServer zSeries and previous mainframe systems.

CICS
Customer Information Control System. General purpose TP monitor for terminal-oriented and inter-system transaction processing in z/OS and VSE/ESA environments. Now with added SOA.

CICS Explorer
This is a system management tool for CICS systems that's based on the Eclipse platform.

CICSplex
A CICS complex (CICSplex) is a group of inter-communicating CICS systems.

CICSPlex System Manager (CPSM)
This provides system management as well as automation and workload management.

CKD
Count Key Data is a way to format disk drive using cylinder number, track number, and physical record.

Client/server
Generic term for systems (also known as server/requester) in which one machine provides a range of services to one or more other machines.

CLIST
Control language used to manage interactive applications in the z/OS TSO environment. Largely superseded by REXX.

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Cloud computing
A new name for something similar to client/server computing. A user launches a browser and clicks a link. Somewhere else an application launches and work is done. The mainframe seems to have always worked in this way. Organizations like Microsoft, Amazon, and Google are trying to become big players in this 'new' paradigm.

CMOS
Complementary Metal Oxide Semiconductor. A chip technology used widely by IBM in its processors, superseding the water-cooled ECL chips on the mainframe.

CMS
Conversational (originally Cambridge – the lab where it was built) Monitor System. Operating system running under VM, and providing timesharing and program development facilities.

COBOL
Programming language, very widely used for commercial applications on the mainframe. Some sources suggest that CICS and COBOL account for 85% of all transactions processed.

Communication Server
IBM's all inclusive, multi-platform, software bundle that provides a plethora of terminal emulation, Web-to-host, and networking capabilities.

Compile
The translation of a high-level programming language (source program) into a machine language program (an executable program).

Compiler
A program that translates high-level programming languages into machine language programs.

Composite applications
A composite application is an application built by combining multiple services. This tends to mean taking part of a really useful mainframe application and combining it with some other code so that the mainframe application becomes available over the Web

Compression
Generic term for a method of reducing the amount of space needed to store data, by encoding the data. This is achieved through the elimination of empty fields, gaps, redundancies, and unnecessary data to shorten the length of records or blocks.

Connector
One way of integrating CICS applications as Web services is to use connectors on the mainframe and use native interfaces to permit tight integration with the target application.

Containers
CICS TS 3.1 introduced a replacement for size-restricted COMMAREAs – they are channels and containers. Any number of containers can be passed between programs and they are grouped together in channels. Channels are deleted when no programs are using them.

Control Point
SNA/APPN/HPR functionality that performs authorization, directory services and configuration management.

CORBA
Common Object Request Broker Architecture. Set of standards for distributed object management from the Object Management Group (OMG).

Coupling
Generic term used to mean connecting of processors together into a more or less tightly-knit computing complex. Used specifically by IBM to mean the connection of multiple eServer zSeries processors in a Sysplex.

Coupling Facility
Hardware from IBM, where common tables can be shared in a Sysplex, for high-speed cacheing, update locking of shared data, list processing and workload balancing between multiple processors.

CPC
Central Processor Complex.

CPU
Central Processing Unit. Processor. The part of a computer that executes instructions.

CRM
Customer Relationship Management refers to the way organizations manage their relationships with customers - including finding, marketing to, selling to, and servicing these customers.

CTG
CICS Transaction Gateway provides J2EE standards-based access to CICS applications, which means it's an easy way to make existing CICS applications part of a Service-Oriented Architecture (SOA).

CTC
Channel-To-Channel connections would link two mainframes and provide high-speed communication.

Cylinder
The tracks, in an assembly of magnetic disks, that can be accessed without repositioning the access mechanism.

DASD
Direct Access Storage Device. IBMspeak for disk.

DAT
Dynamic Address Translation. The process by which virtual addresses are converted into real addresses during instruction execution.

Data dictionary
A data dictionary (DD) is a database containing information about the way items of data are used. Typically a DD contains details of data names, data usage, data structures, data models, and so on.

Data lake
A data lake is a repository of data stored in its natural format. This could be in a Hadoop-based repository.

Data mining
The practice of using a data warehouse for highly complex, ad hoc queries.

Data warehouse
General term for a collection of database, middleware, and query tools that allow fast, flexible access to near-operational corporate data.

DataPower
IBM WebSphere DataPower SOA Appliances is a family of pre-built, pre-configured rack mountable network devices that accelerate Web services deployments while extending SOA infrastructure.

Dataset
A unit of data storage and retrieval consisting of one or more data records. Outside of the IBM mainframe environment, people call them files.

DB2
Database/2. Relational database management system first announced for mainframe environments in 1983. Originally promoted as an end-user tool, but is now IBM's preferred DBMS for just about everything and runs on all platforms.

Debug
The human problem determination process for software. Literally, to remove bugs.

DEDB
Data Entry DataBases are one of two types of IMS fast path database. These databases do not have indexes and are stored in VSAM files.

Defragmentation
The use of a software utility to improve access and retrieval time by rewriting fragmented data to contiguous sectors of a computer storage medium.

Denial of Service
An insidious, carefully-orchestrated attack on computer systems or networks to overload their resources with a barrage of requests in the hope of discovering overload-induced vulnerabilities within the targets or to just disrupt the mission-critical activities of an enterprise.

Device
Any computer peripheral, such as tape or DASD, or any object that appears to be a peripheral.

DevOps
Part DEVelopment and part OPerations, DevOps is a philosophy emphasizing the collaboration and communication between software developers and other IT people, so that building, testing, and releasing software, can happen rapidly, frequently, and more reliably.

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DFSMS
Data Facility Storage Management Subsystem. An element of z/OS and also available for z/VM, as DFSMS/VM. The idea is that you simply tell the system about your storage, back-up, performance, and other requirements of the data, and the system does the rest for you. Of course, it's not really that simple.

DFSMSdfp
DFSMS Data Facility Product. A component of DFSMS that provides functions for storage, data, program, and device management, in conjunction with distributed data access. Enables the definition of the services to be assigned to new datasets. Handles catalog management and access methods.

DFSMSdss
DFSMS DataSet Services. An optional, separately priced feature of DFSMS that handles device migration, copy, space management, and dump/restore. It also converts existing data between non-SMS and SMS volumes, and provides an interface for storage administrators (ISMF).

DFSMShsm
DFSMS Hierarchical Storage Manager. An optional, separately priced feature of DFSMS. It is a sophisticated automated system for both back-up and hierarchical storage management. It includes an ISPF interface for end users who wish to migrate, recall, back-up, or recover individual datasets, or to override the default migration and/or back-up parameters.

DFSMSrmm
DFSMS Removable Media Manager. Its goal was to integrate the system managed storage principles of DFSMS into all removable media, most notably tape and optical.

Disruptive technology
Henry Ford said: "If I had asked people what they wanted, they would have said faster horses". That's an example of a disruptive technology – something that changes the way people do things.

DL/I
Data Language/I. The I is the Roman numeral One. The data manipulation language within IMS DB. DL/I is also the product name for IBM's VSE/ESA implementation of IMS DB.

DLSw
Widely-used SNA/APPN(/NetBIOS)-over-TCP/IP transport mechanism which, however, unlike EE, does not support SNA COS or routing.

DMZ
A De-Militarized Zone is used in the on-going war against viruses and malware etc. Typically, one computer accepts incoming data and send outgoing data. Behind it is a firewall, and behind that is the protected LAN.

Domino
Web server technology from Lotus (June 1996), which allows browsers to interact with Notes and access Notes databases. Now closely integrated with WebSphere.

DRaaS
Disaster Recovery as a Service is the replication and hosting of physical or virtual servers by a third-party to provide failover in the event of a catastrophe.

EBCDIC
Extended Binary Coded Decimal Interchange Code. Coded 8-bit character set (giving 256 characters) used by IBM mainframes.

e-business
Used to refer to business transactions that use the Internet.

ECI
The External Call Interface is used by CICS to allow non-CICS programs to invoke programs under CICS.

Eclipse
Eclipse is an Open Source IDE. IBM's version is sold as WebSphere Studio Workbench. The Eclipse platform comprises the platform run-time, the workspace, the workbench, the Standard Widget Toolkit (SWT), the Version and Configuration Management (VCM), and the help system. Eclipse comes with a large number of plug-ins. The user interface for Eclipse is known as the workbench.

EE
HPR-over-UDP/IP, created by committee and codified in RFC 2353 in 1998, which permits SNA/APPN networking, replete with native COS and routing, across IP networks.

EJB
Enterprise JavaBeans. A server-side, transaction-oriented extension to the JavaBeans component model specification published by Sun. EJB are JavaBeans, but have no user interface and are designed to run within a special EJB container. In principle, any properly coded EJB should run within any fully compliant EJB container.

Enqueue
The z/OS expression (often abbreviated to ENQ) for requesting resource serialization. ENQ can be used to put a user-named entry in the system resource queue in order to prevent another program using a serially usable resource.

Enterprise Extender
Enterprise Extender (EE) is a combination of SNA encapsulated in IP packets, so it can be thought of as a kind of protocol.

EPI
A CICS External Presentation Interface service is an implementation of a service that can be created from a 3270 terminal. EPI provides communication with 3270 terminal-based CICS applications.

ERP
Enterprise Resource Planning systems try to integrate all the data and processes that exist within an organization into a single unified system.

Error log
A dataset or file that contains a record of machine checks on device errors, which are stored for later analysis.

ESB
An Enterprise Service Bus is a software architecture construct that is standards-based and flexible. It is an attempt to separate the service being called and the required transport medium.

ESCON
Enterprise System Connectivity. The high-speed fibre-optic channel architecture (using a serial, packet-switched protocol) first available on ES/9000 and 3090Js and many peripherals. Replaced by FICON in May 1998, though still available.

ESDS
Entry Sequenced DataSet is a VSAM sequential dataset.

ESM
An External Security Manager is software that controls access to applications and data externally. RACF is an External Security Manager.

ESS
The Total Storage Enterprise Storage Server, code-named shark, is a high-speed data storage product.

EWLC
Entry Workload Licence Charges allow customers only pay for peak z/OS usage, not for full machine capacity.

FBA
Fixed Block Architecture is a way of formatting disk drives where space is allocated in fixed-length blocks rather than cylinders.

FDBR
Fast DataBase Recovery creates a separate IMS control region (the Fast Database Recovery region) to monitor an IMS subsystem. If it detects a failure, it will recover any database resources that are locked by the failed IMS, so they're available for other IMS subsystems.

Fibre optic channel
Channel technology which replaced copper bus-and-tag channel cables with fibre-optic links.

FICON
FIbre CONnection. Mainframe channel that implements the ANSI FCS transport. Each FICON channel can handle over 4,000 I/O operations per second, equivalent to eight ESCON(qv) channels. The FICON channel link speed is 100MB/sec full duplex, compared with 17MB/sec simplex with ESCON links.

Firewall
Specialized software designed to prevent unauthorized access to a computer system while permitting validated, non-harmful interactions to get through.

Flat file
Any file (dataset, mainframe parlance) stored in a file access method without an index which, of course, eliminates all relational DBMSs.

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Floating point
One of several methods of storing numbers on an IBM mainframe and most other computers. Similar to scientific notation, such as 3.75 times 10 to the 25th power, only it is 2 or 16 that is taken to some power.

FLPA
The Fixed Link Pack Area is an area of storage containing modules loaded at IPL time.

FORTRAN
FORmula TRANslation. A programming language best suited for engineering, scientific, and mathematical applications.

Fragmentation
When an operating system writes data to disk or other storage media, and there is insufficient contiguous space, the data is then written to discontiguous sectors. The result is fragmented data. Fragmentation can cause increased data access times because the operating system must search different tracks for information.

FTP
File Transfer Protocol is an application layer protocol that uses TCP and Telnet services to transfer bulk data files between machines or hosts.

FWLC
Flat Workload License Charge. A flat monthly charge for a software product, no matter what size of zSeries server it is being run on.

Gamification
A way of making using the software more fun – like in a game – and so people are more likely to do it. It has applications in mundane tasks such as updating a knowledgebase.

Gateway
One way of integrating CICS applications as Web services is to use gateways, which run off the mainframe on middle tier servers and may well use traditional methods, such as screen scraping.

GDG
Generation Data Group. Collection of (z/OS non-VSAM) datasets all with the same logical name (GDG Base Entry); the individual datasets are uniquely identified by the generation number which is stored as part of the dataset name.

GDPS
Geographically Dispersed Parallel Sysplex is an application to manage z/OS remote copy configuration and storage subsystems, to automate various tasks, and perform failure recovery for a sysplex located at two sites.

GTF
Generalized Trace Facility. An optional z/OS utility that records system events, which can be used for problem diagnosis.

GUIDE
Guidance for Users of Integrated Data processing Equipment. For many years, an international user group for users of large IBM equipment. Main GUIDE interests were in applications and the commercial world. Depending on the area of the world you live in, it either stepped aside for SHARE or merged with SHARE (now GUIDE/SHARE in Europe, for example).

Hadoop
An open-source software framework for storage and large scale processing of data-sets, ie Big Data. On a mainframe, it runs in a Linux partition (Linux on System z).

Hadoop Distributed File System (HDFS)
A filesystem used to store Big Data.

HALDB
High-Availability Large Databases are the newest (since V7) IMS databases. They are like souped-up very big full-function databases.

HBase
This is a non-relational, distributed database, written in Java that is used to store Big Data.

HCD
Hardware Configuration Definition is an interactive tool used to define the hardware configuration.

HDA
Head/Disk Assembly. The read/write head and associated bits and pieces that read data from disks. The implication is also of a sealed unit, at least from the customer perspective, as opposed to a removable disk pack.

HFS
Hierarchical File System comes with Linux and refers to the way files are stored.

HiperBatch
A way of running batch jobs in hyperspace, so there was far less I/O and things ran faster.

HMC
Hardware Management Console used to manage hardware.

Host
A computer system that is a server and/or serves attached terminals. Often used to refer to mainframe.

HPR
High-Performance Routing is an extension to APPN networking providing improved routing performance and reliability.

HSA
High-Speed Adapter is the name for subchannels on some servers.

HTML
HyperText Mark-up Language is a “mark-up language” for defining the structure of a document – eg Web pages.

HTTP
HyperText Transfer Protocol is the protocol used to request, transfer, and display hypertext documents.

Hub
A generic term for a device that has a single connection to the host and many connections for other devices to connect to it.

I/O
Input/output. Refers to the transmission of data into or out of a processor’s memory. This would include communication lines and peripherals such as disk drives.

ICETOOL
An enhanced DFSORT utility that includes the OUTFIL feature.

IBM i
An operating system running on IBM Power Systems. It was originally named OS/400 and ran on AS/400s.

ICF
Integrated Catalog Facility contains catalog information about datasets. It is made up BCS and VVDS.

ICF
Integrated Coupling Facility is a component of a Parallel Sysplex. It allows multiple processors to share, cache, update, and balance data access.

ICSF
Integrated Cryptographic Service Facility is part of MVS security, protecting data on the mainframe.

IDAA (IBM DB2 Analytics Accelerator)
This high-performance appliance integrates IBM Netezza and zEnterprise technologies, providing fast results for complex and data-intensive DB2 queries on data warehousing, business intelligence, and analytic workloads.

IDCAMS
Access Method Services. Multi-purpose batch VSAM utility program.

IDE
Integrated Development Environment. Salesmen say it stands for “It Does Everything”, and unlucky customers as “I Do Everything”! An IDE could be a glorified text editor right up to all-singing all-dancing software like Eclipse and Visual Studio.

IEBCOMPR
z/OS Compare Datasets utility does a logical compare of datasets. Replaced by SuperC in ISPF/PDF.

IEBCOPY
z/OS Library Copy utility for copying members of a partitioned dataset (PDS), unloading a PDS into a sequential dataset and back again. Unloading is especially useful for copying a PDS to tape.

IEBGENER
z/OS Sequential Copy/Generate Dataset utility. Replaced by ICEGENER in DFSORT and several non-IBM products.

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IEBPTPCH
z/OS Print-Punch utility for producing a hard copy of datasets and library members. Replaced by ISPF/PDF's hardcopy capabilities.

IEBUPDTE
z/OS Update Dataset utility. Can only be used for PDS members and sequential datasets with fixed-length records no greater than 80 bytes in length.

IEHLIST
z/OS List System Data utility for listing a VTOC or the directory of a PDS.

IEHMOVE
z/OS Move System Data utility for moving or copying logical collections of operating system data. Replaced by DFSMSdss.

IETF
Internet Engineering Task Force. An open community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet.

IFL
Integrated Facility for Linux. Dedicated Linux processor on the zSeries.

IIOP
Internet Inter-ORB Protocol is an object-oriented protocol that makes it possible for distributed programs written in different programming languages to communicate over the Internet.

IML
Initial Microcode (sometimes Machine) Load. The first step in starting up a mainframe, during which the firmware is automatically copied into the machine.

IMS
Information Management System. Vintage but extremely powerful system for transactional workloads, still underpinning many of the world's business-critical applications. Composed of two systems: Database Manager (IMS DB) and a Transaction Manager (IMS TM).

IMS catalog
The IMS catalog contains information about IMS program resources, database resources, and relevant application metadata that IMS controls.

IMS Connect
This is an integrated TCP/IP gateway for IMS, allowing user-written applications to access IMS data and transaction services from any TCP/IP client. It also supports callout from IMS applications to outside services.

IND$FILE
Mainframe file transfer program.

Info/Man
IBM Information/Management. Software problem, change and configuration management software. Now called Tivoli Information Management for z/OS.

Internet of Things (IoT)
This refers to devices such a remote sensors, CCTV, weather satellites, etc that will be monitoring thrughout the day, and producing data that can be captured and analysed.

IOCDS
Input/Output Configuration DataSet. The dataset specifying the I/O devices that can be connected to a mainframe.

IOCP
Input/Output Configuration Program. The program describing the I/O configuration to the channel subsystem.

IP
Internet Protocol. An Internet protocol that routes data through networks. IP acts as an intermediary between the higher protocol layers and the physical network. It does not provide error recovery or flow control.

IP address
The numerical Internet Protocol (IP) address of an Internet computer. Every computer has a unique numerical IP address. IPv6, which offers 64-bit addressing, is meant to replace IPv4, which only offers 32-bit addressing. One day, all the addresses available with 32-bit addressing are meant to be used up!

IPL
Initial Program Load. The first part of the process of loading an operating system into a machine.

IRC
Inter-Region Communication is a CICS facility providing communication between CICS regions using functions such as Multiregion Operation (MRO) and Distributed Program Link (DPL).

IRD
Intelligent Resource Director. z/OS feature for redistributing workloads on the fly.

ISHELL
ISHELL (ISPF Shell) is the name of the panel displayed after issuing the ISH command. It can be used to view files and directories.

ISPF
Interactive System Productivity Facility. Menu and screen management system.

ISPF/PDF
ISPF/Program Development Facility. ISPF facility providing access to application development services for end users and programmers. Incorporates C and REXX programming support, and some support for programmable workstations.

ISV
Independent Software Vendor. A software vendor which isn't part of and/or doesn't belong to a hardware manufacturer.

IT4IT
This Reference Architecture prescribes holistic management of the business of IT with continuous insight and control, enabling 'Boundaryless Information Flow' across the entire IT Value Chain. It provides prescriptive guidance on how to design, procure, and implement the functionality needed to run IT. The end-to-end, 'how to' emphasis of the IT Value Chain and IT4IT Reference Architecture also enables the state of services that IT delivers to be systematically tracked across the service life-cycle.

ITIL
Information Technology Infrastructure Library. ITIL provides a framework of best practice guidance for IT service managers. The actual ITIL publications cover areas such as service strategy, service design, service transition, service operation, and continual service improvement.

J2EE
Java 2 Platform, Enterprise Edition. The Java Software Development Kit (SDK) tools, APIs, and run-time (ie execution) environment targeted at Java developers building enterprise-class, server-side applications.

Java
An object-oriented programming environment developed by Sun towards the end of 1995. Java creates applets which can be downloaded across the Internet, and which will allow clients to interact with objects on the Web and intranet servers.

Java Virtual Machine
The facility allowing Java applets/source code to run on a computer.

JavaBeans
A platform-independent, software component technology for building reusable Java components called Beans. The JavaBeans component model specifies how to build reusable software components, how the resulting Beans describe their properties to visual rapid application development tools, and how they communicate with each other. Beans can be combined to create applications or applets.

JavaScript
An interpreted scripting language.

JCA
J2EE Connector Architecture is used to connect CICS with a J2EE platform.

JCL
Job Control Language. The language used on the mainframe to describe the steps of a batch job (files to be used, programs to be run, etc).

JDBC
Java DataBase Connectivity. An API that is designed for use by Java database applications, and has the same characteristics as Open Database Connectivity (ODBC).

JDK
Java Development Kit. Software development kit from Sun consisting of a Java compiler, a debugger, standard Java classes, and a Java run-time (ie JVM) for Unix.

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JES2 and JES3
Job Entry Subsystem 2. One of two batch processing subsystems available for z/OS, both developed in the 1960s and with a different heritage and different control statements. Each reads batch jobs in, schedules their execution and spools their output. JES2 is by far the more popular.

JMS
The Java Message Service is a Java API to message-oriented middleware (MOM).

JNDI
Java Naming and Directory Interface is really two APIs used to keep track of, and access, dispersed data.

JNI
The Java Native Interface is a programming interface for writing Java native methods and embedding the Java virtual machine into native applications.

JSON
JavaScript Object Notation is an open standard format using human-readable text to send data objects as an alternative to XML.

JSP
JavaServer Pages. Uses XML-like tags and scriptlets to encapsulate logic that fills out the dynamic content of HTML pages.

JVM
see Java Virtual Machine.

Kantara Initiative
This is an organization dedicated to advancing technical and legal innovation related to digital identity management. It isn't a standards body, buts make recommendations to standards bodies about digital identity management.

Kerberos
Security system for Unix environments derived from MIT's Project Athena. Uses a trusted server to ensure that there are no unwanted systems in the network.

Kernel
The core of an operating system that performs basic functions such as allocating hardware resources.

Kilobit
1024 bits, or 2 to the 10th power, when referring to processor storage, real and virtual storage, and channel volume. However, when referring to disk storage capacity it is 1000 bits. Abbreviated as Kb.

Kilobyte
1024 bytes, or 2 to the 10th power, when referring to processor storage, real and virtual storage, and channel volume. However, when referring to disk storage capacity it is 1000 bytes. Abbreviated as KB.

KSDS
Key Sequenced DataSet is a type of VSAM dataset in which the physical location of records is controlled by the key used.

LAN
Local Area Network. A generic term for the transport mechanism for a local (eg site or building) network. The thing that makes current LANs special is their intimacy with the connected machines; effectively the LAN acts as an extension to the internal bus of the attached system, and allows a single system to be built from physically dispersed components.

Language Environment
LE provides a common run-time environment for major programming languages. The common library of run-time services includes message handling, condition handling, storage management routines and time/date functions.

Latency
A measure of response time. On a disk drive, how long it takes for the first bit of requested data to rotate under the head. In a network, the minimum elapsed time for a message to be transmitted, consisting of the aggregate delay contributed by the communications links and devices along the way.

LDAP
Lightweight Directory Access Protocol. An Internet directory management standard that provides a consistent way to manage user access to network resources, such as information, applications and systems.

LDS
Linear DataSet is a type of VSAM dataset that can be kept permanently in memory thus improving performance.

Legacy system
The description given to any system that's been around longer than the programmer who wants to change it. Some 'legacy systems' can be comparatively recent and, despite popular perceptions, they are certainly not exclusive to the mainframe.

Liberty profile
This is a cut down version of the WebSphere Liberty product. It provides a way for CICS, IMS, and DB2 users to easily allow their applications to link to apps running in mobile devices and the Internet of Things.

LIFO
Last In, First Out. A queuing technique where the most recent addition to the queue is processed first. Also known as a push-down stack.

Linear Dataset
A VSAM dataset type, similar to an ESDS, but which always has 4096 byte blocks, and which can be kept permanently in memory for enhanced performance.

Linux
An Open Source Unix variant that seems to run on everything from workstations (where Microsoft haters insist it will replace Windows) to mainframes (where IBM has spent bags of money making it run well).

Listener
An application that 'listens' for input on a line and then acts on it.

Load module
A program in a form that can be loaded into memory for immediate execution.

Logical Partitioning
A way of dividing up a processor's capacity under PR/SM into physically separate areas (LPARs or Logical PARtitions) for resilience, performance or security reasons.

LPA
Link Pack Area. The z/OS area used for resident programs, eg those programs which are most frequently used and (usually for performance reasons) should not be loaded by each application program from libraries stored on disk.

LPAR
Logical PARtitioning is a way of dividing up a processor's capacity.

LSR
Local Shared Resources. A technique for improving CICS performance by the sharing of a common buffer pool for VSAM datasets.

LU
SNA's software interface (or 'port') through which end users gain access to the SNA network.

LU 6.2
SNA's protocol suite for program-to-program communications.

LUW
Logical Unit of Work is the amount of work that will be backed out in the event of a failure. For example, a CICS transaction is processing away happily and then something goes wrong. The LUW defines how much of what has been processed will be backed out and how much that occurred previously can be left. Large LUWs are efficient providing that failures are rare. Small LUW use processing power, but are more efficient for recovery after a failure.

M2M
Machine-to-machine is used when talking about machines, devices, and equipment that can communicate with each other. And that communication can be wired or wireless.

MAC
Media Access Control. Generic term for the way in which workstations gain access to transmission media.

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Macro
A preprocessor (precompiler), and the statements it processes, for Assembler. Generates Assembler instructions and machine instruction mnemonics as well as allowing assembly time conditional logic.

Mainframe
A high-performance computer serving many people at once and running many different applications concurrently.

Man-in-the-Middle
Data siphoning scheme where fraudulent software manages to insert itself, undetected, between two network partners by actively emulating the two partners being deceived.

MapReduce
A process used on Big Data at runtime that maps the data and reduces it.

Master catalog
The z/OS catalog where the search begins for a dataset.

MCM
The MultiChip Module (MCM) contains the Central Electronic Complex (CEC) of a S/390 system.

Measured usage
The method of charging for software based on the monthly usage. Same as Usage-based pricing.

Megabit
1,048,576 bits. Abbreviated as Mb.

Megabyte
Roughly one million bytes – actually 1,048,576 bytes. Abbreviated as MB.

MFLOPS
MegaFLOPS. One MFLOPS is one million floating point operations per second – a common measure of numerically intensive compute power.

MIB
Management Information Base. Generic term (often used specifically in relation to the SNMP management protocol) for the database of the objects managed in a network – usually a LAN.

Microcode
Although it can have very specific alternative meanings, its most common usage is as a synonym for firmware.

Microsecond
1/1,000,000 of a second.

Microsoft
The company that made the shrewd move of persuading IBM to use its DOS operating system for the IBM PC. The rest is history.

Middleware
Though it defies definition, its primary role is to provide connectivity and other shared services between platforms. There are numerous types.

MIME
Multipurpose Internet Mail Extensions. An encoding format allowing e-mail messages containing a variety of media forms (audio, video, image, and text) to be sent across the Internet.

MIPS
Million Instructions Per Second (or Meaningless Indicator of Processor Speed). A crude and not very meaningful way of expressing raw computer power, widely used for comparing the power of different mainframe models and for demonstrating the futility of comparing the mainframe with other platforms.

Mirroring
The technique of constantly maintaining a parallel copy of critical datasets, so that the duplicate data can be used if there is a problem with the main data.

MLPA
The Modified Link Pack Area is an area of storage used to contain re-enterable routines from APF-authorized libraries.

MobileFirst
MobileFirst is a set of mobile software, services, and solutions for businesses offered by IBM.

MOM
Message Oriented Middleware. For example, WebSphere MQ.

MongoSQL
This is an Open Source NoSQL database that uses JSON-like documents with dynamic schemas for speed.

MPF
Message Processing Facility. A utility in z/OS that controls message display and message processing, typically to suppress unnecessary system messages. A first step towards automated operations.

MQSeries
Messaging and Queueing Series – see WebSphere MQ.

MRO
Multi-Region Operation is a function of the CICS Inter-Region Communication facility enabling communication between CICS regions.

MSDBs
Main Storage DataBases are one of two types of IMS fast path database. These databases do not have indexes and are stored in VSAM files.

MSS
Mass Storage System is hardware for storing large amounts of archive data, typically involving the use of a jukebox mechanism to retrieve discrete data cartridges.

MSU
Millions of Service Units. Measure of mainframe compute power, used selectively by IBM as an alternative to MIPS. Opinions vary as to how the two metrics compare.

MTBF
Mean Time Between Failures. The average value of the length of time between consecutive failures under stated conditions of a system.

MTO
Master Terminal Operator. Software enabling a terminal to control a subsystem, eg CICS.

MTTR
Mean Time To Recovery or Repair. The average time required for corrective maintenance. See also MTBF.

Multiplexer
A generic device (also known as a mux) that combines data from two or more devices, transmits the data as a single datastream over a high-speed communications medium, and disentangles (de-multiplexes) the data at the other end.

Multi-point
Communications configuration in which a single primary node communicates with two or more secondary nodes (which cannot communicate with one another, except through the primary). Also known as multi-drop.

MVS
Multiple Virtual Storage. In z/OS's long history, MVS has the honour of being its name for the longest period (about 20 years), and the operating system is still referred to as MVS by many mainframe technical specialists. Popularly believed to stand for Man Versus System.

Nanosecond
1/1,000,000,000 of a second.

NAS
Network Attached Storage.

.NET
.NET is a Microsoft strategy for creating Web services. In essence, a Windows user should be able to run applications locally or over the Web without noticing the difference. Visual Studio .NET is a development environment that is currently available.

NetView
SNA network management product. Announced mid-1986. Although it started off life as a rather half-hearted bundling of various mainframe-centric network management products (including NCCF, NLDM, NPDA, VNCA, and NMPF), by mid-1995 it had turned into a fully-fledged distributed network management system, with a strong focus on distributed Unix boxes as network management workstations. Replaced by Tivoli NetView and other products.

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NFS
Network File System. Set of Unix protocols (originally developed by Sun Microsystems) for file sharing across a LAN. Built on top of Ethernet and TCP/IP.

NJE
Network Job Entry. JES facility enabling multiple hosts to share job queues and system spools.

Node
In SNA, a total unit of network-attachable functionality, realized in software, that gets implemented within a device or runs on a computer.

NoSQL
NoSQL databases don't have to use SQL, but may. They are different from traditional relational databases..

Notes
Lotus groupware product that IBM took on in June '91.

OAuth
This is an open standard for authorization. It allows people to access third-party Web sites using their validated Facebook or Twitter IDs.

OCR
Optical Character Recognition. OCR software is used to convert scanned documents into machine-readable text files.

ODBC
Open DataBase Connectivity. An API created by Microsoft that allows Windows applications to access relational databases, such as DB2 and Oracle, and other data sources using SQL statements.

OEM
Original Equipment Manufacturer. An OEM is a manufacturer who makes a product and sells it to another company, which puts its own badge on it and sells it to the end user.

OLAP
On-Line Analytical Processing. A term coined by database guru Ted Codd and used to refer to multi-dimensional analysis and reporting applications of the EIS and Information Warehouse type.

OLE
Object Linking and Embedding. Microsoft-sponsored standard for moving and linking data and other objects between applications and systems in Windows.

OLTEP
On-Line Test and Execution Program. IBM engineer's tool for analysis of hardware problems.

OLTP
On-Line Transaction Processing. Generic term for high-throughput, very resilient transaction systems. OLTP tends to be used to refer to systems with some degree of fault tolerance.

OMG
Object Management Group. A group of vendors responsible for standards for object management and interoperability including CORBA, UML, MOF and CWM. IBM joined in 1991.

OMVS
The OMVS command is used to invoke the z/OS Unix shell.From here you can use shell commands or utilities requesting services from the system. You could also write shell scripts and run shell scripts or programs written in C.

Online Reorganization (OLR)
Using OLR with IMS HALDBs, the databases remain available to applications throughout the OLR reorganization process.

Open Systems
Computer systems that provide either interoperability, portability, of freedom from proprietary standards, depending on your perspective.

OpenEdition
'Open' version of MVS that was replaced by Unix System Services in z/OS and OpenEdition Shell and Utilities in z/VM.

OpenID
This provides a way for users to consolidate their digital identities by having a single OpenID when connecting to different Web sites.

ORB
Object Request Broker. A specialized object that allows other objects to communicate with each other to make and receive requests and responses.

OS/390
Replacement for MVS, announced in 1995. Now superseded by z/OS, but still used in some mainframe sites.

OSA
Open Systems Adapter is an integrated hardware feature allowing zSeries 900 platforms to provide connectivity directly to clients on LANs.

OSA Express
Open Systems Adapter-Express are an IBM adapter family consisting of integrated hardware features that are designed to provide direct connection for zSeries and S/390 Parallel Enterprise Servers G5 and G6 to high speed routers and switches, to other high speed servers, and to clients on LANs.

OSAM (Overflow Sequential Access Method)
This is an IMS-specific access method that optimizes the I/O channel program for IMS access patterns.

OTC
One Time Charge. An initial license charge. Caused a furore when the concept was introduced, but people seem to have got used to it now. At the beginning of 1999, OTC was dropped from any mainframe software product for which a monthly charge option was available.

OTE
Open Transaction Environment was introduced with CICS TS 1.3. Its aim is to open up the CICS application execution environment, allowing applications to be defined to execute under their own TCBs within CICS and allowing CICS to better exploit multiple processors.

OTMA (Open Transaction Manager Access)
This IMS facility is a transaction-based connectionless client/server protocol that functions as an interface for host-based communications servers accessing IMS TM applications using the Cross Systems Coupling Facility (XCF).

Outsourcing
The notion of contracting out part or all of your IS function to an outside organization. Used to be often used synonymously with facilities management, although strictly speaking facilities management involves delegating responsibility for the whole service rather than just part of it.

PaaS
Platform as a service provides a platform, allowing customers to develop, run, and manage Web applications without the complexity of building and maintaining the infrastructure typically associated with developing and launching an app.

Page
An essential process within virtual storage technology. Fixed sized blocks (typically 4096 bytes) of memory are freed up by writing their contents to a paging device until any virtual address within that block is referenced.

Parallel Sysplex
See Sysplex.

Parity bit
A binary digit check bit appended to a group of binary digits to make the sum of all the digits, including the appended binary digit, even or odd, depending on whether Even or Odd Parity is being used.

Parmlib
Parameter Library. A dataset in z/OS containing parameter settings. The most important is SYS1. PARMLIB which contains parameter settings for z/OS and many key subsystems.

Parse
The analysis of the operands entered with a command in addition to the creation of a parameter list for the command processor. It can also refer to the initial processing of source code by a compiler, when it divides up each program statement into its component parts, also known as tokens.

PASCAL
Programming language, mainly used in academia, though even there it is rarely seen these days.

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Patch
A code modification to correct a reported problem that is sent to software product users after the release of a product.

PAV
Parallel Access Volumes are used to eliminate I/O supervisor queueing against DASD. Thus improving the performance of anything accessing the disk devices.

PCI
Peripheral Component Interconnect. Extremely popular PC bus standard originally promoted by Intel and soon supported by IBM, even though it meant dropping its beloved MCA.

PCMCIA
Personal Computer Memory Card International Association. Industry-standard interface (not just for memory, but for modems, network interfaces, etc) for laptop and notebook computers.

PDF
Portable Document Format. File definition format used by Adobe Acrobat.

PDS
Partitioned DataSet. A z/OS feature that is really made up of datasets within a dataset. Each PDS is made up of zero or more members. Each member has all the characteristics of a standard sequential dataset, though all members share the same attributes: those that were defined for the PDS when it was allocated. Each member has a one to eight character name that follows the same rules as a level of a standard z/OS dataset name (DSN). Each PDS has a directory of its members, which can also (optionally) contain other information, known as Statistics, which are maintained by software such as the ISPF/PDF editor.

PDSE
Partitioned DataSet Extended. Software which enables the space freed by expired or deleted PDSs to be reused. Introduced in 1989 in an attempt to address the limitations of the PDS.

Peer-to-peer
A form of distributed system in which all participating nodes can function as both client and server.

PERL
Practical Extraction and Reporting Language. A general-purpose Unix scripting language, which is popular for writing CGI programs. Its speed and flexibility make it well suited for form processing and on-the-fly page creation.

Petabyte
1024 terabytes (TB) – 2 to the fiftieth power, or 1,125,899,906,842,624 bytes. Abbreviated as PB.

PF key
Program Function key. A single keystroke can be used to perform a specific command.

PGP
Pretty Good Privacy. Encryption technology which uses the public key approach. Messages are encrypted using a public key, but can only be decoded using a private key kept by the intended recipient of the message.

Phishing
A malicious scheme to obtain the credentials necessary to access a secure system by masquerading as that system and fooling people into entering the sought after credentials.

Picosecond
1/1,000,000,000,000 of a second. A time span during which even <insert your least-liked company name here> would not be able to put up prices.

PING
Packet INternet Groper. A test of reachability in TCP/IP networks. A PING is a program used to test the ability to reach destinations by sending an echo request and waiting for a reply.

Pipeline
In Linux and other Unix-like operating systems, a pipeline is a set of processes chained together. Output from one process is then input for the next process until all the processes have executed.

PL/I
Programming Language/One. Language developed by IBM. A sort of love-child of COBOL and FORTRAN, it was widely used on the mainframe for many years but never quite achieved the 'universal standard' status that IBM had hoped.

Plain text
Data that is not encrypted. Typically refers to data while it is being transmitted across a network.

PLPA
Pageable Link Pack Area is part of memory containing system-level programs that may be run by multiple address spaces.

Polling
Generic name for a method for controlling devices (eg networked workstations or terminals), in which a computer calls (polls) each device in turn to see whether it wants to communicate.

POP
Principles of Operation. The name of the manual that defined the S/360 and subsequently the S/370 architecture.

Port
Generic noun and/or verb. As a noun, it means a point at which data can enter or leave a data network or individual device; as a verb it means to convert a piece of software written for one environment so that it runs in another.

POSIX
Portable Operating System Interface Standard. Operating system interface standard from the IEEE, designed as a procurement reference standard for ensuring source-level application code portability.

PostScript
Language/protocol cum page description language developed by Adobe Systems for driving high-resolution page printers.

Power Systems
Originally, IBM had the System i running IBM i (OS/400) and the System p series running AIX or Linux. In 2008, IBM merged the two lines of servers and workstations under the same name, Power Systems, with identical hardware and a choice of operating systems, software, and service contracts.

PPP
Purchasing Power Parity is Gustav Cassel's theory (1920) that, in an efficient market, identical goods must have only one price.

PR/SM
Processor Resource/Systems Manager. Logical partitioning hardware technology that makes a single system, even if it has only one processor, look like multiple systems each of which is a Logical PARtition (LPAR).

Private area
Area within z/OS which contains the user's own data/programs.

Private key
A key known only to the sender or receiver of an encrypted message.

Problem State
A term used in performance measurement to indicate when the machine is performing end-user work. The opposite is Supervisor State, when the machine is spending time generally managing itself.

PROLOG
PROgramming in LOGic. Language mainly used for developing artificial intelligence and expert systems.

PROP
PRogrammable OPerator. A facility in z/VM that allows remote control of a virtual machine, enabling limited automation of routine operator activities.

Proprietary
Proprietary is used to refer to architectures and standards owned by a hardware or software vendor. The term is usually used in opposition to 'open'.

Proxy server
A server that receives and fulfils requests intended for another server.

PRPQ
Programming Request for Price Quotation. IBM terminology for a customer request for a price quotation on alterations or additions to the functional capabilities of system control programming or licensed programs.

PSLC
Parallel Sysplex License Charge, a monthly license charge designed to support the design of a Parallel Sysplex cluster. In a fully qualified Sysplex environment, PSLC software charges are based on the total MSU value for only those machines where the products execute.

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PSW
Program Status Word. A hardware register (double word) in the mainframe. The PSW contains the address of the next instruction to be executed and, when an application or system software error occurs, why it happened and other status information.

PTF
Program Temporary Fix. An official IBM temporary patch to a program – often less temporary than IBM and its users would wish. PTFs are distributed on PUTs. Sometimes the term APAR is used instead of PTF.

Public key
A published key value used as one of the two keys in public key encryption.

PWFI
The pseudo wait-for-input option means an IMS MPP region can stay scheduled until another input message appears, avoiding additional application program termination and rescheduling.

QMF
Query Management Facility. Query and report-writing system for DB2 with some analysis and graphics features.

QSAM
Queued Sequential Access Method is an access method for communicating with sequential datasets.

RACF
Resource Access Control Facility. Security and access control system under z/OS and z/VM. The z/OS version is a component of SecureWay Security Server, but is also available as a stand-alone product. RACF authorizes access to resources (datasets, mini-disks, TSO/CMS/CICS/IMS TM log-on, etc) and logs unauthorized access attempts and accesses to protected datasets.

RAG
Red/Amber/Green status lights used to indicate in an easily interpretable way the status of a system, with red indicating poor system health.

RAID
Set of redundancy standards for disk subsystems (RAID 0-6), developed by the University of Berkeley and adopted by the RAID Advisory Board.

RAM
Random Access Memory, also known as system memory, is the amount of physical memory that is addressable by and directly accessible to the processor chips on the motherboard.

Ransomware
This is downloaded software that stops you using your PC. The software will usually ask for money before control of your computer is given back to you. Just running anti-virus and anti-malware software is not enough these days. Examples of ransomware include: Brolo, Crowti, FakeBsod, Krypterade, Reveton, and Tescrypt. The number of ransomware attacks is increasing all the time.

RAS
Reliability, Availability, and Serviceability – the three most desirable properties for IBM computers.

RDBMS
Relational DataBase Management System. Database system based on relational principles. DB2 is IBM's preferred RDBMS for just about every platform.

Read-only mode
A mode that does not allow updates to the data being read.

Real storage
The combination of central and expanded storage. Also known as processor storage.

Red teaming
This refers to the practice of viewing a problem from an adversary or competitor's perspective – and that usually means looking at issues with security.

Redbook
A more readable version of an IBM manual

Relational database
A type of database that allows information in one set of database tables to be connected to information in another set of tables without requiring duplication of information.

RESTful
REST (Representational State Transfer) is an architectural style used to build Web services that are lightweight, maintainable, and scalable. A service based on REST is called a RESTful service. It links mainframe applications with mobile and cloud apps.

REXX
Restructured EXtended eXecutor language. A widely used job control language, REXX has become a replacement for existing procedural languages such as CLIST. REXX is an effective programming language in its own right with powerful string processing facilities.

RJE
Remote Job Entry. Dedicated RJE terminals include 2780/3780 or 3770.

RMF
Resource Measurement Facility. On-line performance and resource monitor for z/OS. Also includes a formatter for printing performance reports. An optional, separately priced feature of z/OS.

RPG
Report Program Generator. Programming language widely used on the eServer iSeries 400 and its predecessors, AS/400 and System/3x. As its name implies, originally used mostly for report generation and very strong sort/merge facilities, where it can be used completely non-procedurally.

RRDS
Relative Record DataSet is a type of VSAM file. Each record is accessed directly by its record number.

RSM
Real Storage Manager. The part of z/OS that controls real memory.

SAF
Security Authorization Facility can be used for example with CICS to divert requests to an ESM (External Security Manager – such as RACF). In this way, security can be added to an operating system of subsystem.

SAML
Security Assertion Mark-up Language addresses the issue of Single Sign-On (SSO). The SAML specification defines three roles: the principal (typically a user), the identity provider (IdP), and the service provider (SP).

SAN
Storage Area Network.

SAP (System Assist Processor)
A System Assist Processor is a specialized processor that assists a central processor on a mainframe.

SCEM
Supply Chain Event Management examines all possible events and factors that might disrupt a supply chain.

SCM
Supply Chain Management applies to all movement and storage of raw materials, work-in-process inventory, and finished goods from point-of-origin to point-of-consumption. It is the process of planning, implementing, and controlling the operations of the supply chain as efficiently as possible.

Screen scraping
A programming technique for interacting with online host applications that generate text-only display output. The display output is read (scraped) right off a virtual screen by the workstation-based software and input generated on a virtual keyboard. What the user sees is quite different, and usually includes a GUI.

SDEPS (Sequential Dependents)
Sequential dependent segments (SDEPs) may be included in an IMS Data Entry Database (DEDB).

SDSF
System Display and Search Facility. Online tool for programmers and operators monitoring jobs awaiting execution in the JES2 input spool queues and, most commonly, viewing the printed output of batch jobs in the Held output spool queues, to save printing it on paper.

Serial number
Term used to denote the machine which you own today, which may be very different from the one you originally bought.

Server
A device providing database information, or Web pages, any other information. It usually has a number of clients or users of this data.

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Service Level Agreement
Generic term for an agreement between a user and the people providing a computer service. The SLA specifies such things as response time, availability, etc.

Service Unit
The basic charging unit in usage-based pricing.

Servlet
A Java applet, without a user interface, that is executed on a Web server. Often used to replace CGI routines, because they support dynamic HTTP requests.

SFM
Sysplex Failure Manager is used when one of the systems in a parallel sysplex fails. It is responsible for recovery of the system and subsystem.

SGML
Standard Generalized Mark-up Language. The canonical mark-up language from which HTML and XML are derived.

Shift left
This is an approach to software testing and system testing in which testing is performed earlier in the life-cycle. That means it's moved to the left on the project timeline. Similarly, quality and security can be moved earlier in the software life-cycle. Although, I'm sure you've spotted the flaw in the thinking – if too much is shifted to the left, then everything is back where it started!

SIGP
SIGnal Processor.

Skeuomorphism
is making one thing look like something else, eg making the digital interface look like a paper one - you often see it with calendar applications that look like desktop paper calendars. The GUI emulates real physical objects that the user will be familiar with. Including skeuomorphism in a UI design is a good idea because it makes an unfamiliar interface look like something familiar - and, therefore, its use becomes more intuitive.

SLA
A Service Level Agreement is a formally negotiated agreement between two parties (the IT department usually being one of them) where the level of service is formally defined.

SMF
System Management Facilities. Function within z/OS which collects data on all system activities for use in accounting, performance monitoring, capacity planning, etc. SMF creates log entries (SMF records) of this data.

SMP/E
System Modification Program / Extended is used to install most software products.

SMS
System Managed Storage. The philosophy of letting the computer system manage the storage of data rather than having it done by a human data administrator.

SMTP
Simple Mail Transfer Protocol. The protocol allowing the transmission of e-mail messages across the Internet.

SNA
Systems Network Architecture. IBM's extremely powerful but complex data communications architecture defining levels of protocols for communications between terminals and applications, and between programs. While SNA-only networks have all but disappeared, SNA applications are still very much in evidence in the large enterprise.

SNMP
Simple Network Management Protocol. Unix protocol originally developed for management of TCP/IP networks.

SOA
A Service-Oriented Architecture is a collection of services that communicate with each other. The services are self-contained and do not depend on the context or state of the other service. Mainframe applications become available to Web browsers and now mainframe applications can call other Web services.

SOAP
Simple Object Access Protocol. A lightweight form of middleware for accessing services, objects, and servers in a platform-independent manner.

Sockets
Software interfaces that allow two Unix application programs to talk to one another using TCP/IP protocols.

Spool
Simultaneous/Shared Peripheral Operation On-Line. DASD storage used as a temporary storage area between devices – eg printer and processor.

SQA
System Queue Area. Storage area in z/OS.

SQL
Structured Query Language. IBM and ANSI standard (they diverge and converge regularly with the passage of time) for access to relational databases.

SRB
Service Request Blocks are requests to execute a service routine and they are usually initiated by system code executing from one address space to perform an action affecting another address space.

SRM
System Resources Manager. Software which is meant to improve throughput by optimizing the use of system resources.

SSCP
SNA's System Services Control Point, in an hierarchical network, typically implemented on a mainframe within VTAM, that is responsible for directory services and configuration management. Now superseded by the peer-to-peer oriented functionality of APPN/HPR control points.

SSL
The Secure Sockets Layer is a much-used protocol for managing the security of messages sent over the Internet.

Stand-alone dump
A display of all used memory locations, typically stored on DASD or tape, created with a program that does not required the operating system to be functioning normally.

Superuser
A user ID with minimal security restrictions.

Supervisor State
A term used in performance measurement to indicate when the machine is spending time generally managing itself. The opposite is Problem State, when the machine is performing end-user work.

SupportPac
A SupportPac is supplied by IBM and contains complementary software, which may be new utilities, or class libraries, or things that IBM thinks will make the product more usable or work better.

SVC
SuperVisor Call. An interface to operating system functions that is used to protect the operating system from inappropriate user entry. It can also refer to the SVC Assembler mnemonic or machine language instruction it represents.

Swapping
The process of transferring a complete program between main memory and auxiliary storage (usually disk).

Syncpoint
A point in a transaction's life when updates are committed. In a distributed environment, where the transactions may be across several databases, the syncpoint enables the commit to be delayed until all the participants can commit simultaneously.

SYSGEN
System Generation. The process of creating a customized version of an operating system. In the IBM environment this was a complex, error-prone and time-consuming process.

System i
Formerly iSeries and now called just *i* – a later incarnation of the AS/400 family of hardware that runs on Power hardware.

System p
Formerly pSeries – this is the latest incarnation of the RS/6000 family of hardware.

System z
Formerly zSeries – this is the name for mainframes running z/OS and/or z/VM and/or other operating systems.

SYSOUT
z/OS output intended for a printer. The name comes from the JCL DD parameter SYSOUT, where SYSOUT=A means send the output to the JESx Class A spool queue.

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Sysplex
SYStem comPLEX. A processor complex which is formed by loosely coupling System/390 processors together into a single unit (using channel-to-channel adapters or ESCON/FICON fibre-optic links); the processors are synchronized using the Sysplex Timer, and can be managed as a single system image.

Tablet
For many executives, the must-have device is an iPad from Apple or an Android device from Samsung and other suppliers. As a consequence, these now need to be connected to corporate data, with all the concomitant security issues.

TCB
Task Control Blocks represent tasks executing within an address space. There are usually several TCBs associated with each address space, so more than one task could be running in any one address space at any one time. TCBs are created when a program issues the ATTACH macro to initiate a new task.

TCP/IP
Transmission Control Protocol/Internet Protocol. Set of protocols for the network and transport layers of a packet-switched data network, most notably the Internet. Developed in the US for the Department of Defense ARPAnet system and has become the *de facto* standard for most forms of data communication.

telnet
The remote, or virtual, terminal protocol for the Internet. Allows users to log-in to their home machine from any other machine, or *vice versa*.

Terabyte
1024 gigabytes or 1,099,511,627,776 bytes. Abbreviated as TB.

TeraFLOPS
1000 GigaFLOPS, a measure of supercomputer performance.

Third platform
This is meant to represent the next phase of the IT revolution. The first platform is the mainframe; the second is the PC; and the third comprises cloud services, mobile computing, social networking, and big data analytics.

Threadsafe
Originally introduced with CICS 3.2, threadsafe refers to the ability of an application to process multi-threaded programs at the same time safely.

tn
Refers to tn3270, tn3270e and tn5250 collectively or interchangeably.

tn3270
Specialized TCP/IP telnet protocol which provides compatibility with a 3270 datastream by emulation of the screen buffer. Used for mainframe host access across the Internet and internally within organizations to replace SNA terminal-to-host access with TCP/IP.

tn3270e
Improved version of tn3270 that supports colour, the 3270 System Request key and other capabilities not present in tn3270.

TPF
Transaction Processing Facility. Low-function but high performance mainframe TP monitor for very large communications systems. Derived from ACP (Airline Control Program), which was derived from PARS (Programmed Airline Reservation System).

TPIPE
IMS Connect communicates with IMS through logical connections called transaction pipes (TPIPEs).

Transport layer
The network layer responsible for quality of service and accurate delivery of information, ie error detection/correction occurs here.

TSO
Time Sharing Option. These days, everyone just says TSO when they mean TSO/E.

TSO/E
Time Sharing Option/Extensions. An element of z/OS that provides an on-line interactive environment for programmers and users. Best known for the ISPF/PDF environment that runs on TSO/E. Can also be used to test batch programs.

TXSeries
A merging of CICS, Encina and IBM Transaction Server.

UCB
Unit Control Block is used to control access to devices.

UDDI
Universal Description Discovery and Integration is a directory model for Web services. UDDI is a specification for maintaining standardized directories of information about Web services, recording their capabilities, location, and requirements.

Unified Resource Manager
The Unified Resource Manager is an integrated System z management facility responsible for platform management on z196s. This tool set enables clients to install, monitor, manage, optimize, diagnose, and service resources and workloads from a single point.

Unit of work
The statements executed between one commit point and the next – usually a group of SQL statements which would need to be rolled back as a group if any single statement in the group could not be executed. It's the basic recovery unit.

Unix
A misspelling of UNICS (UNiplexed Information and Computing Service). A hardware-independent operating system originally for minicomputers.

Unix System Services
A full function Unix implementation under z/OS that complies with the POSIX standard. Originally introduced as OpenEdition.

Usage pricing
The principle of charging for software on the basis of the amount of work done, eg the number of transactions or the amount of batch data processed.

User catalog
In z/OS, an ICF catalog created to reduce the number of entries in the Master Catalog, thereby improving performance.

VIO
Virtual I/O. Hyper-efficient z/OS paging technique. Simulates DASD using real storage and so avoids the overhead of channel activity.

VIPA (Virtual IP Addressing)
This frees hosts from depending on a particular physical network interface for communication with a TCP/IP stack.

Virtual storage
A technique for giving programs the illusion that they have massive quantities of main storage to themselves. The technique works by allowing programs to address lots of virtual memory, but making the operating system page the required data in and out of real main store and to and from a paging device at the appropriate time. The technique enables cheap DASD to be used instead of expensive main storage.

Virtualization
A way of dividing up a computer's components and sharing them in order to maximize their usefulness.

VM
Virtual Machine. Mainframe operating system which can act as a hypervisor, enabling users to run multiple OSs on a single machine. There are two components to VM – the hypervisor itself, which provides resources to the virtual machines; and CMS, which provides conversational and timesharing facilities. VM was on the way out when IBM discovered a new role for the software: z/VM can host hundreds (technically thousands) of Linux images on the mainframe at a fraction of the cost of distributed hardware.

VOLSER
Volume Serial Number. The key identifying a tape or other storage volume. Maximum six characters. Most installations use a six-digit VOLSER for in-house tapes to easily differentiate them from DASD volumes.

Volume
The unit of physical storage. Originally the volume equated to a single disk or tape, but logical volumes are more the norm today, especially with most current DASD devices emulating previous products and VTS doing volume stacking on tape.

VSAM
Virtual Storage Access Method (aka Very Slow And Mysterious). IBM mainframe proprietary software for direct (by key or by record number) or sequential processing of fixed and variable length records on DASD.

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VSE
Virtual Storage Extended. For many years, VSE was IBM's principal operating system for small to medium-size mainframes. A few years back it looked as if VSE support would slowly be withdrawn, but customer support is strong and the re-dubbed z/VSE now looks set to continue for some time.

VTAM
Virtual Telecommunication Access Method. The main SNA subsystem resident in the mainframe, which manages session establishment and data flow between terminals and application programs, or between application programs.

VTOC
Volume Table Of Contents. The area of a disk used to store the directory of components, including datasets, held on that volume. Anything that takes DASD space is listed in the VTOC. For example, the index and data components of a VSAM KSDS file are listed in the VTOC, but not the cluster name, which is only listed in the catalog.

VVDS
The VSAM Volume DataSet along with the BCS make up the ICF catalog structure. The VVDS is a special type of ESDS. It is created automatically whenever a VSAM component (including a BCS) is allocated on a volume which does not yet have a VVDS. The VVDS is always called SYS1.VVDS.Vvolser.

VWLC
Variable Workload License Charge. IBM software pricing scheme that allows users to license a product for a capacity less than the total capacity of the system. Replaced by AWLC on zEnterprise mainframes.

WAS
WebSphere Application Server. IBM's Java application server. WAS for z/OS version 6.0.1 supports J2EE 1.4 and many mainframe-specific functions.

Watson Explorer
Watson Explorer combines content and data from different systems and presents it in a single view.

Web 2.0
A practically meaningless term in itself (the Web is not software with version and release numbers) that can be used as a way of highlighting some of the new technologies that are available over the Internet and identifying the companies that are using them, like Google Earth, Flickr, etc.

WebSphere
An IBM Internet-focused software platform that supports e-business applications and sits at the heart of IBM's middleware strategy. The foundational products are WebSphere Application Server and WebSphere MQ.

WebSphere Application Server (WAS) Liberty profile
This is a cut-down version of WAS containing only the features required by the applications used on the server.

WebSphere MQ (WMQ)
Originally MQSeries. IBM software/middleware that provides a message queuing infrastructure; it sits on various systems in a heterogeneous environment, providing integration between disparate systems and applications.

WebSphere Optimized Local Adapters (WOLA)
A part of WAS for z/OS that provides a low-overhead communication mechanisms for exchanging high volumes of messages.

Web service
Web services are essentially "mini" applications that include a description of what another application does, how to accesses it, and what data it requires. They are often utilized in integration projects where disparate systems may have difficulty interacting with each other without the use of the common standards.

WLM
Workload Manager. Feature within SRM for simplifying the management of system resources such as CPU and storage. eWLM reportedly adds the ability to define business performance objectives across disparate systems.

Workload License Charges
An IBM software licensing scheme which charges according to required software capacity, not hardware capacity.

WSAT
Web Services Atomic Transaction is now supported in CICS TS 3.1. Web services can be configured to take part in an extended or global unit of work. This is known as an atomic transaction. Recoverable updates are not committed or backed out until instructed to do so by the Web service.

WSDL
Web Services Description Language is the standard format for describing a Web service. A WSDL definition describes how to access a Web service and what operations it will perform. WSDL (along with SOAP and UDDI) is one of the three foundation standards of Web services.

WSRR
WebSphere Service Registry and Repository is used with WebSphere in SOA environments.

WTO
Write To Operator. A message sent to the mainframe operator console from JCL or an application program.

XML
eXtensible Mark-up Language is a W3C recommendation and provides a standard approach for describing, capturing, processing, and publishing information.

X-Terminal
A type of terminal developed in the Unix world that provides a GUI type environment (usually X-Windows) without the need for a programmable workstation.

z/Architecture
IBM's latest architecture for mainframes and peripherals.

z/OS
The latest incarnation of MVS, the principal operating system for the IBM mainframe. Announced in October 2000, it brought with it support for 64-bit addressing and a broad range of technical innovations. As well as running on zSeries machines, it also runs on System/390 G5 and G6 processors and Multiprise 3000 systems.

z/OS Connect
z/OS Connect is built on IBM WAS Liberty profile running on z/OS, and is a gateway providing a way to discover and invoke applications and data on z/OS from mobile, cloud and Web applications.

Z/TPF
The latest version of the Transaction Processing Facility, a low-function but high-performance TP monitor for very large data communications systems.

z/VM
The latest version of the much-loved Virtual Machine, a hypervisor that enabled users to run multiple operating systems on a single machine.

zAAP
A Java co-processor for the z890 and z990, which allows customers to offload Java application processing without paying software costs for the additional capacity.

Zap
Affectionate name for various utilities (AMASPZAP, aka SUPERZAP in z/OS), which can be used to apply a fix directly to object code *in situ*. Zapping is a bad thing – it creates programs in which the object code does not agree with the source, and which are hence totally unmaintainable.

zBX
The zEnterprise BladeCenter Extension (zBX) on operates as a tightly-coupled extension to the z196 and z114 mainframes through a high-performance private network. Users then add POWER7 or System x blades to four racks.

Zero day vulnerability
This is a hole in a piece of software that is unknown to the vendor.

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zFS
zSeries File System is a Unix file system that can be used in addition to HFS. **zIIP**
z9 Integrated Information Processor. A co-processor similar to zAAP (the idea is that you pronounce them ZIP and ZAP), but designed to off-load DB2 work and integrate data across the enterprise. Like zAAP, you pay for the hardware but do not incur IBM software charges for the additional capacity. Minimum requirement: z9-109 with z/OS 1.6 or later and DB2 V8.

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Zombie computers
These are used to spread e-mail spam and launch distributed denial-of-service (DDOS) attacks.

Zombie data
This is old forgotten data that you thought you'd deleted, but hadn't.

Zombie programs
These are the programs that hackers use to gain access to your computer. They are often called 'bots'.

This glossary is based on the former Xephon publication, the *Handbook of IBM Terminology.*