

Glossary

For terms that are defined well on the Internet, a hyperlink to those sites has been included where a detail description (and pictures) can be found.

Term	Definition
AFP	Adjusted function points. Used during feasibility studies to determine the potential size of a project.
Alpha Collision	This is an error that one must be concerned with in the implementation of fail-over clusters. It occurs when two or more computers claim to be the alpha unit. The cluster implementation should either strive to eliminate the possibility of alpha collisions, or require that a quorum vote declare the alpha unit. Alpha collisions can also cause IP collisions with units inside the cluster.
Alpha Unit	The computer that is currently running the fail-over cluster. In many cases and implementations, the alpha unit is the unit that is running all server applications.
Apache	The name of a popular public domain web server.
API	Application Program Interface
Beta Unit	The computer that is checking to make sure the alpha unit is still alive. Theoretically, this can be extended to multiple Beta units.
BNF	Backus-Naur Form
Cluster	A group of computers linked together to simulate one computer system. The group can be either a scientific cluster or a fail-over cluster.
COCOMO	Constructive cost model – a method for estimating the size of a project.
COTS	Commercial off the shelf - software bought from a store.
CPU	Central Processing Unit.
Daemon	A UNIX program that runs without needing constant user input.

Table 1: Glossary

DFD	Data flow diagrams. A way to visualize the flow of data within a project.
DHCP	Dynamic host configuration protocol - assigns IP address as needed.
DIPC	Distributed Inter-Process Communication
DRDB	The program DRDB sends a request over the web to the on-line cluster to execute the DRDB-LIST command.
ERM	Entity relationship model
Fail-over Cluster	Cluster is used to ensure system reliability. If one computer in the cluster goes down for any reason, another unit in the cluster will take over the responsibility of managing the system. Typically, fail-over clusters require that its alpha and beta units be exactly identical in hardware. Gamma units can usually differ. This all depends on the implementation.
Fibre Channel	A high-speed connection between a storage device and a server.
FTP	File transfer protocol.
Gamma Unit	The computer that is used to make an odd number of units in the Quorum. A gamma unit cannot become an alpha unit and is reserved for the purpose of deciding the quorum vote. This unit is not always required; it depends on the implementation of the clustering software.
Gantt	A chart used in project management to visualize a project timeline.
Giga	A billion.
GNU	GNU's Not UNIX
GPL	GNU General Public License
GUI	Graphical user interface.
Heartbeat	The communication between computers in a fail-over cluster that tests to see if any part of the cluster has gone down.
Hyperlink	A way to link objects.
IMAP	Internet messaging access protocol.
IMAPD	Courier-IMAP server that provides IMAP access to maildir mailboxes.
IMP	Interface message process.

<u>Internet</u>	A large network of smaller networks.
<u>IP</u>	Internet protocol.
IP Collision	This is an error that occurs at the TCP/IP level when any two computers on a network (inside or outside a cluster) share the same IP addresses. At best, the consequences can result in having one of the machines go offline. At worst, IP collisions can take down a whole section of the network.
<u>IT</u>	Information technology.
<u>Kernel</u>	The central part of a program.
<u>LAN</u>	Local area network.
<u>LOC</u>	Lines of code. Used in feasibility study to determine the estimated size of the project.
<u>MB</u>	Megabyte - a million.
<u>MHz</u>	Megahertz – measures transmission speed of electronic devices.
<u>MPI</u>	Message Passing Interface.
<u>Network</u>	A system that allows data to be passed from one user to another.
<u>OS</u>	Operating system.
<u>Pentium</u>	A series of CPU chips made by the Intel corporation.
Pert	A chart used in project management to visualize a project timeline.
<u>ProFTPD</u>	Highly configurable GPL-licensed FTP server software.
<u>PVM</u>	Parallel virtual machine.
<u>Qmail</u>	A UNIX based email program.
Quorum	The entire group of units in a fail-over cluster that has an odd number of units. With an odd number of units, the cluster can cast a decisive <i>quorum vote</i> to determine which computer is the alpha unit, with the gamma unit forcing the decision. Not all clusters require a Quorum.
<u>RAM</u>	Random access memory.
<u>Red Hat</u>	A software company specializing in the Linux operating system.
<u>RS232</u>	Recommended standard 232.
<u>Samba</u>	A UNIX based file server program.
Scientific Cluster	A cluster that is used to simulate a very powerful computer – using each computer to aid in the solution

	of a larger computational problem.
<u>SCSI</u>	Small computer system interface.
<u>SMB</u>	Server message block.
<u>SMTP</u>	Simple mail transfer protocol.
<u>TCP/IP</u>	Transmission control protocol / internet protocol
<u>UNIX</u>	A computer operating system.
VORD	Viewpoint – Oriented Requirements Definition, A method to define requirements.
WBS	Work breakdown schedule – used during the project management phase of a project.