

ALHAJJAN
InternetVSAT.Com

LinkStar™
Broadband Satellite Internet Service
Service description
W1 Platform

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Introduction

This document outlines a full functional service description for the LinkStar™ Broadband Satellite Internet Service on the Eutelsat W1 Platform.

It is intended to inform all users of the LinkStar™ system, exactly how the service is be managed, configured and maintained.

Overview

The LinkStar™ Internet Service will be run over a satellite network provided by Eutelsat. Eutelsat will have full responsibility for the satellite network and ALHAJJAN will have full control over its own remote satellite terminals via the Satellite Ground Station staff at Euphon. The Euphon staff will also be able to provide first line fault rectification.

The Rest of the network infrastructure that makes up the LinkStar™ Internet Service will be monitored and controlled by ALHAJJAN.Com – InternetVSAT.com , and will be supported by Solve Solutions as an escalation point.

The LinkStar™ product is being offered as a one-stop solution for internet users both at home and in the office environment. It is capable of providing a home user level of performance and an office level of performance. To accomplish this ALHAJJAN – InternetVSAT.com will be allowing users to subscribe to a Grade of Service that will meet their requirements. In practical terms this means that heavier users get better grades of service to accommodate the increase in the amount of traffic they will use in an everyday situation.

There are also value added features that will allow the end users to experience broadband internet the same way users of other technologies will do. These value added features will allow video conferencing, VOIP and public IP address to be offered to end users much the same way as other internet products. These value added services are under the full control of ALHAJJAN and will be not being part of the standard offerings.

Description

The network infrastructure consists of several major components.

- 1) The Internet Routers – Provide a network connection to the Internet and handle all traffic to and from the Internet. The routers are under the control of the Satellite Ground Station staff and are not managed by ALHAJJAN – InternetVSAT.com. Any Internet related faults are the responsibility of Euphon.
- 2) The Firewalls – Provide Network Address Translation facilities for customers so that public IP Addresses can be offered to remote sites. The Firewall also blocks malicious traffic that is not desired and enforces the Security Requirements of the LinkStar™ system.
- 3) The Cache Servers – Provide local content storage of frequently accessed web content. They will be transparent to End Users so that no special configurations are required for all users to benefit from this feature. The Caches are operating in transparent mode and are accessed through the NetEnforcer using the CacheEnforcer feature.

- 4) The NetEnforcer – Provides bandwidth management to enable the Grades of Service to be monitored and controlled. It will also redirect WWW content to the cache servers.
- 5) The Mentat Accelerator – Will provide acceleration of TCP and HTTP traffic over the satellite network. The Mentat Server will process requests on behalf of Mentat Clients and compress and accelerate the data to and from those clients. This is only available to users of Microsoft Windows Systems.
- 6) The LinkStar™ system – Provide the satellite connectivity and is controlled by Euphon. ALHAJJAN will have full configuration control over its own satellite terminals.

Together these components will provide the basic functionality of the LinkStar™ system. In addition to the above there are some components that will increase functionality, but are a supplement to the above. These include DNS Servers, MRTG, Web and FTP Servers and an Intrusion Detection System, the details of which will be covered later in this document.

Grades of Service at a glance

The following table (Figure 1) highlights the various Grades of Service that are available on the LinkStar™ Service. It enables people to easily identify the desired Grade of Service. After it has been decided to use a particular Grade of Service, it is recommended that you proceed to the detailed sections on the following pages to read in detail what is supported on your chosen Grade of Service and what is not.

Grade of Service	Download Speed (1)	Upload Speed (2)	Contention Ratio (3)
LinkStar™ Home 500	512Kbps	128Kbps	30:1
LinkStar™ Home 500 Plus	512Kbps	128Kbps	20:1
LinkStar™ Home 1000	1024Kbps	128Kbps	20:1
LinkStar™ Office 500	512Kbps	128Kbps	10:1
LinkStar™ Office 500 Plus	512Kbps	256Kbps	10:1
LinkStar™ Office 500 Premium	512Kbps	512Kbps	10:1
LinkStar™ Office 1000	1024Kbps	128Kbps	10:1
LinkStar™ Office 1000 Plus	1024Kbps	256Kbps	10:1
LinkStar™ Office 1000 Premium	1024Kbps	512Kbps	10:1
LinkStar™ Office 2000	2048Kbps	128Kbps	10:1
LinkStar™ Office 2000 Plus	2048Kbps	256Kbps	10:1
LinkStar™ Office 2000 Premium	2048Kbps	512Kbps	10:1

Figure 1

- (1) Download Speed - This is the maximum speed the download will burst too. It is measured in Kilo Bits per Second.
- (2) Upload Speed – This is the maximum speed the upload will burst too. It is measured in Kilo Bits per Second.
- (3) Contention Ratio – This is measure of how many people are sharing the same bandwidth and contesting for equal use of it. The figures state that out of 10, 20 or 30 sites that can possibly use the system, only 1 site will be currently active and passing

traffic at any one time. For example, this means that for a 128Kbps Inbound channel at a ratio of 10:1, 30 sites can be configured and

four expected simultaneous users (at one per site) will get 32Kbps each. The contention ratios are measured against the four expected simultaneous users (at one user per site).

LinkStar™ Home 500

Description

This is the entry level Grade of Service for occasional users who do not download large files or send many e-mails with attachments. This Grade of Service is aimed at people who want a basic web browsing service and do not use any services that are reliant on good performance. Users can have only a single PC connected.

This Grade of Service will support the following applications:

- Web Browsing
- Web based e-mail
- Client / Server e-mails with small attachments up to approximately 1 Mbyte in size.
- DNS queries
- Newsgroup access
- FTP Server access
- Peer-to-peer file sharing applications such as Kazaa, WinMX or Napster. (Subject to throttling based on usage. See *(note2))

This Grade of Service will NOT support the following applications:

- Video Conferencing
- Netmeeting
- Citrix Metaframe
- Terminal Services
- Newsfeeds or news streamers
- Remote Desktop applications such as PcAnywhere
- VOIP

Users will not be provided access to the following value added services:

- VOIP
- Video Conference facilities.

Typical System Performance

Typically end-users on a Home 500 Grade of Service can expect the following speeds
*(note1)

Peak Hours		Off Peak Hours	
Web Download	Minimum Burst	16Kbps	64Kbps
	Maximum Burst	256Kbps	512Kbps
	Average Throughput	96Kbps	128Kbps
FTP Download	Minimum Burst	16Kbps	64Kbps
	Maximum Burst	256Kbps	512Kbps
	Average Throughput	96Kbps	128Kbps
E-Mail upload	Minimum Burst	16Kbps	16Kbps
	Maximum Burst	64Kbps	128Kbps
	Average Throughput	32Kbps	32Kbps

* (note1) These figures are based on speeds measured to and from the Servers located in the LinkStar™ service. These figures do not apply to any servers located on remote satellite terminals, or servers located on the Internet as these are beyond the reasonable control of ALHAJJAN.

*(note2) Any applications that stream information, or are capable of slowing overall network performance, may be subject to throttling in accordance with the Internet Acceptable Use Policy. This is to ensure fair access to the LinkStar™ network.

LinkStar™ Home 500 Plus

Description

This is the normal Grade of Service for home users who occasionally download large files or send e-mail with attachments. This Grade of Service is aimed at people who want a basic Internet service and do not use any services that are reliant on good performance. Users can have up to 5 PC's connected.

This Grade of Service will support the following applications:

- Web Browsing
- Web based e-mail
- Client / Server e-mails with small attachments up to approximately 1 Mbyte in size.
- Newsgroup access (including binary groups)
- FTP Server access
- Peer-to-peer file sharing applications such as Kazaa, WinMX or Napster. (Subject to throttling based on usage. See *(note2))
- VOIP (Subject to throttling based on usage. See *(note2))

This Grade of Service will NOT support the following applications:

- Video Conferencing
- Netmeeting
- Citrix Metaframe
- Terminal Services
- Newsfeeds or news streamers
- Remote Desktop applications such as PcAnywhere

Users will be provided access to the following value added services:

- Public IP Addresses
- VOIP

Typical System Performance

Typically end-users on a Home 500 Plus Grade of Service can expect the following speeds *(note1)

Peak Hours		Off Peak Hours	
Web Download	Minimum Burst	16Kbps	64Kbps
	Maximum Burst	256Kbps	512Kbps
	Average Throughput	128Kbps	256Kbps
FTP Download	Minimum Burst	16Kbps	64Kbps
	Maximum Burst	256Kbps	512Kbps
	Average Throughput	128Kbps	256Kbps
E-Mail upload	Minimum Burst	16Kbps	16Kbps
	Maximum Burst	64Kbps	128Kbps
	Average Throughput	32Kbps	32Kbps

*(note1) These figures are based on speeds measured to and from the Servers located in the LinkStar™ service. These figures do not apply to any servers located on remote

satellite terminals, or servers located on the Internet as these are beyond the reasonable control of ALHAJJAN.

*(note2) Any applications that stream information, or are capable of slowing overall network performance, may be subject to throttling in accordance with the Internet Acceptable Use Policy. This is to ensure fair access to the LinkStar™ network.

LinkStar™ Home 1000

Description

This is the highest Grade of Service for home users who often download large files or send e-mail with attachments. This Grade of Service is aimed at people who want a faster Internet service and do not use any services that are reliant on good performance. Users can have up to 5 PC's connected.

This Grade of Service will support the following applications:

- Web Browsing
- Web based e-mail
- Client / Server e-mails with attachments
- Newsgroup access (including binary groups)
- FTP Server access
- Peer-to-peer file sharing applications such as Kazaa, WinMX or Napster. (Subject to throttling based on usage. See *(note2))
- VPN's (Subject to throttling based on usage. See *(note2))

This Grade of Service will NOT support the following applications:

- Video Conferencing
- Netmeeting
- Citrix Metaframe
- Terminal Services
- Newsfeeds or news streamers
- Remote Desktop applications such as PcAnywhere

Users will be provided access to the following value added services:

- Public IP Addresses
- VPN's

Typical System Performance

Typically end-users on a Home 1000 Grade of Service can expect the following speeds

*(note1)

Peak Hours		Off Peak Hours	
Web Download	Minimum Burst	32Kbps	64Kbps
	Maximum Burst	512Kbps	1024Kbps
	Average Throughput	128Kbps	256Kbps
FTP Download	Minimum Burst	32Kbps	64Kbps
	Maximum Burst	512Kbps	1024Kbps
	Average Throughput	128Kbps	256Kbps
E-Mail upload	Minimum Burst	16Kbps	16Kbps
	Maximum Burst	64Kbps	128Kbps
	Average Throughput	32Kbps	32Kbps

*(note1) These figures are based on speeds measured to and from the Servers located in the LinkStar™ service. These figures do not apply to any servers located on remote

satellite terminals, or servers located on the Internet as these are beyond the reasonable control of ALHAJJAN.

*(note2) Any applications that stream information, or are capable of slowing overall network performance, may be subject to throttling in accordance with the Internet Acceptable Use Policy. This is to ensure fair access to the LinkStar™ network.

LinkStar™ Office 500

Description

This is the normal Grade of Service for office users who occasionally download large files or send e-mail with attachments. This Grade of Service is aimed at people who want a basic Internet service and do not use many services that are reliant on good performance. Users can have up to 13 PC's connected.

This Grade of Service will support the following applications:

- Web Browsing
- Web based e-mail
- Client / Server e-mails with attachments
- Newsgroup access (including binary groups)
- FTP Server access
- Peer-to-peer file sharing applications such as Kazaa, WinMX or Napster. (Subject to throttling based on usage. See *(note2))
- VPN's (Subject to throttling based on usage. See *(note3))
- Citrix Metaframe (Subject to throttling based on usage. See *(note3))
- Terminal Services (Subject to throttling based on usage. See *(note3))
- Remote Desktop applications such as PcAnywhere (Subject to throttling based on usage. See *(note3))
- Any other streaming or real time applications. (Subject to throttling based on usage. See *(note2))

Users will be provided access to the following value added services:

- Public IP Addresses
- VPN's
- Video Conference facilities – Subject to booking

Typical System Performance

Typically end-users on an Office 500 Grade of Service can expect the following speeds
*(note1)

Peak Hours		Off Peak Hours	
Web Download	Minimum Burst	16Kbps	64Kbps
	Maximum Burst	512Kbps	512Kbps
	Average Throughput	256Kbps	320Kbps
FTP Download	Minimum Burst	16Kbps	64Kbps
	Maximum Burst	512Kbps	512Kbps
	Average Throughput	256Kbps	320Kbps
E-Mail upload	Minimum Burst	16Kbps	16Kbps
	Maximum Burst	128Kbps	128Kbps
	Average Throughput	32Kbps	32Kbps

*(note1) These figures are based on speeds measured to and from the Servers located in the LinkStar™ service. These figures do not apply to any servers located on remote

satellite terminals, or servers located on the Internet as these are beyond the reasonable control of ALHAJJAN.

*(note2) Any applications that stream information, or are capable of slowing overall network performance, may be subject to throttling in accordance with the Internet Acceptable Use Policy. This is to ensure fair access to the LinkStar™ network.

*(note3) These are applications may be throttled if they are used in excess, but will normally be given low priority when compared to other types of traffic. The performance of these applications is not supportable by ALHAJJAN. See the Internet Acceptable Use Policy.

LinkStar™ Office 500 Plus

Description

This is the normal Grade of Service for office users who occasionally download large files or send e-mail with attachments. This Grade of Service is aimed at people who want a basic Internet service and do not use many services that are reliant on good performance. Users can have up to 13 PC's connected.

This Grade of Service will support the following applications:

- Web Browsing
- Web based e-mail
- Client / Server e-mails with attachments
- Newsgroup access (including binary groups)
- FTP Server access
- Peer-to-peer file sharing applications such as Kazaa, WinMX or Napster. (Subject to throttling based on usage. See *(note2))
- VPN's (Subject to throttling based on usage. See *(note3))
- Citrix Metaframe (Subject to throttling based on usage. See *(note3))
- Terminal Services (Subject to throttling based on usage. See *(note3))
- Remote Desktop applications such as PcAnywhere (Subject to throttling based on usage. See *(note3))
- Any other streaming or real time applications. (Subject to throttling based on usage. See *(note2))

Users will be provided access to the following value added services:

- Public IP Addresses
- VPN's
- Video Conference facilities – Subject to booking

Typical System Performance

Typically end-users on an Office 500 Plus Grade of Service can expect the following speeds *(note1)

Peak Hours		Off Peak Hours	
Web Download	Minimum Burst	64Kbps	128Kbps
Maximum Burst		512Kbps	512Kbps
Average Throughput		256Kbps	320Kbps
FTP Download	Minimum Burst	64Kbps	128Kbps
Maximum Burst		512Kbps	512Kbps
Average Throughput		256Kbps	320Kbps
E-Mail upload	Minimum Burst	32Kbps	32Kbps
Maximum Burst		256Kbps	256Kbps
Average Throughput		64Kbps	64Kbps

*(note1) These figures are based on speeds measured to and from the Servers located in the LinkStar™ service. These figures do not apply to any servers located on remote

satellite terminals, or servers located on the Internet as these are beyond the reasonable control of ALHAJJAN.

*(note2) Any applications that stream information, or are capable of slowing overall network performance, may be subject to throttling in accordance with the Internet Acceptable Use Policy. This is to ensure fair access to the LinkStar™ network.

*(note3) These are applications may be throttled if they are used in excess, but will normally be given low priority when compared to other types of traffic. The performance of these applications is not supportable by ALHAJJAN. See the Internet Acceptable Use Policy.

LinkStar™ Office 500 Premium

Description

This is the normal Grade of Service for office users who occasionally download large files or send e-mail with attachments. This Grade of Service is aimed at people who want an Enhanced Internet service and do not use many services that are reliant on good performance. Users can have up to 13 PC's connected.

This Grade of Service will support the following applications:

- Web Browsing
- Web based e-mail
- Client / Server e-mails with attachments
- Newsgroup access (including binary groups)
- FTP Server access
- Peer-to-peer file sharing applications such as Kazaa, WinMX or Napster. (Subject to throttling based on usage. See *(note2))
- VPN's (Subject to throttling based on usage. See *(note3))
- Citrix Metaframe (Subject to throttling based on usage. See *(note3))
- Terminal Services (Subject to throttling based on usage. See *(note3))
- Remote Desktop applications such as PcAnywhere (Subject to throttling based on usage. See *(note3))
- Any other streaming or real time applications. (Subject to throttling based on usage. See *(note2))

Users will be provided access to the following value added services:

- Public IP Addresses
- VPN's
- Video Conference facilities – Subject to booking

Typical System Performance

Typically end-users (at 1 user per site) on an Office 500 Premium Grade of Service can expect the following speeds *(note1)

Peak Hours		Off Peak Hours	
Web Download	Minimum Burst	64Kbps	128Kbps
	Maximum Burst	512Kbps	512Kbps
	Average Throughput	128Kbps	320Kbps
FTP Download	Minimum Burst	64Kbps	128Kbps
	Maximum Burst	512Kbps	512Kbps
	Average Throughput	128Kbps	320Kbps
E-Mail upload	Minimum Burst	32Kbps	32Kbps
	Maximum Burst	256Kbps	512Kbps
	Average Throughput	64Kbps	96Kbps

*(note1) These figures are based on speeds measured to and from the Servers located in the LinkStar™ service. These figures do not apply to any servers located on remote satellite terminals, or servers located on the Internet as these are beyond the reasonable control of ALHAJJAN LTD.

*(note2) Any applications that stream information, or are capable of slowing overall network performance, may be subject to throttling in accordance with the Internet Acceptable Use Policy. This is to ensure fair access to the LinkStar™ network.

*(note3) These are applications may be throttled if they are used in excess, but will normally be given low priority when compared to other types of traffic. The performance of these applications is not supportable by ALHAJJAN. See the Internet Acceptable Use Policy.

LinkStar™ Office 1000

Description

This is the normal Grade of Service for office users who often download large files or send e-mail with attachments. This Grade of Service is aimed at people who want a faster Internet service and do not use many services that are reliant on good performance. Users can have up to 29 PC's connected.

This Grade of Service will support the following applications:

- Web Browsing
- Web based e-mail
- Client / Server e-mails with attachments
- DNS queries
- Newsgroup access (including binary groups)
- FTP Server access
- Peer-to-peer file sharing applications such as Kazaa, WinMX or Napster. (Subject to throttling based on usage. See *(note2))
- VPN's (Subject to throttling based on usage. See *(note3))
- Citrix Metaframe (Subject to throttling based on usage. See *(note3))
- Terminal Services (Subject to throttling based on usage. See *(note3))
- Remote Desktop applications such as PcAnywhere (Subject to throttling based on usage. See *(note3))
- Any other streaming or real time applications. (Subject to throttling based on usage. See *(note2))

Users will be provided access to the following value added services:

- Public IP Addresses
- VPN's
- Video Conference facilities – Subject to booking

Typical System Performance

Typically end-users on an Office 1000 Grade of Service can expect the following speeds *(note1)

Peak Hours		Off Peak Hours	
Web Download	Minimum Burst	64Kbps	128Kbps
	Maximum Burst	1024Kbps	1024Kbps
	Average Throughput	256Kbps	512Kbps
FTP Download	Minimum Burst	64Kbps	128Kbps
	Maximum Burst	1024Kbps	1024Kbps
	Average Throughput	256Kbps	512Kbps
E-Mail upload	Minimum Burst	16Kbps	32Kbps
	Maximum Burst	128Kbps	128Kbps
	Average Throughput	32Kbps	64Kbps

*(note1) These figures are based on speeds measured to and from the Servers located in the LinkStar™ service. These figures do not apply to any servers located on remote satellite terminals, or servers located on the Internet as these are beyond the reasonable control of ALHAJJAN.

*(note2) Any applications that stream information, or are capable of slowing overall network performance, may be subject to throttling in accordance with the Internet Acceptable Use Policy. This is to ensure fair access to the LinkStar™ network.

*(note3) These are applications may be throttled if they are used in excess, but will normally be given low priority when compared to other types of traffic. The performance of these applications is not supportable by ALHAJJAN. See the Internet Acceptable Use Policy.

LinkStar™ Office 1000 Plus

Description

This is the normal Grade of Service for office users who often download large files or send e-mail with attachments. This Grade of Service is aimed at people who want a faster Internet service and often use services that are reliant on good performance. Users can have up to 29 PC's connected.

This Grade of Service will support the following applications:

- Web Browsing
- Web based e-mail
- Client / Server e-mails with attachments
- Newsgroup access (including binary groups)
- FTP Server access
- Peer-to-peer file sharing applications such as Kazaa, WinMX or Napster. (Subject to throttling based on usage. See *(note2))
- VPN's (Subject to throttling based on usage. See *(note3))
- Citrix Metaframe (Subject to throttling based on usage. See *(note3))
- Terminal Services (Subject to throttling based on usage. See *(note3))
- Remote Desktop applications such as PcAnywhere (Subject to throttling based on usage. See *(note3))
- Any other streaming or real time applications. (Subject to throttling based on usage. See *(note2))

Users will be provided access to the following value added services:

- Public IP Addresses
- VPN's
- Video Conference facilities – Subject to booking

Typical System Performance

Typically end-users on an Office 1000 Plus Grade of Service can expect the following speeds *(note1)

Peak Hours		Off Peak Hours	
Web Download	Minimum Burst	64Kbps	128Kbps
	Maximum Burst	1024Kbps	1024Kbps
	Average Throughput	256Kbps	512Kbps
FTP Download	Minimum Burst	64Kbps	128Kbps
	Maximum Burst	1024Kbps	1024Kbps
	Average Throughput	256Kbps	512Kbps
E-Mail upload	Minimum Burst	16Kbps	32Kbps
	Maximum Burst	256Kbps	256Kbps
	Average Throughput	64Kbps	96Kbps

*(note1) These figures are based on speeds measured to and from the Servers located in the LinkStar™ service. These figures do not apply to any servers located on remote

satellite terminals, or servers located on the Internet as these are beyond the reasonable control of ALHAJJAN.

*(note2) Any applications that stream information, or are capable of slowing overall network performance, may be subject to throttling in accordance with the Internet Acceptable Use Policy. This is to ensure fair access to the LinkStar™ network.

*(note3) These are applications may be throttled if they are used in excess, but will normally be given low priority when compared to other types of traffic. The performance of these applications is not supportable by ALHAJJAN. See the Internet Acceptable Use Policy.

LinkStar™ Office 1000 Premium

Description

This is an enhanced Grade of Service for office users who often download large files or send e-mail with attachments. This Grade of Service is aimed at people who want a faster Internet service and often use services that are reliant on good performance. Users can have up to 29 PC's connected.

This Grade of Service will support the following applications:

- Web Browsing
- Web based e-mail
- Client / Server e-mails with attachments
- Newsgroup access (including binary groups)
- FTP Server access
- Peer-to-peer file sharing applications such as Kazaa, WinMX or Napster. (Subject to throttling based on usage. See *(note2))
- VPN's (Subject to throttling based on usage. See *(note3))
- Citrix Metaframe (Subject to throttling based on usage. See *(note3))
- Terminal Services (Subject to throttling based on usage. See *(note3))
- Remote Desktop applications such as PcAnywhere (Subject to throttling based on usage. See *(note3))
- Any other streaming or real time applications. (Subject to throttling based on usage. See *(note2))

Users will be provided access to the following value added services:

- Public IP Addresses
- VPN's
- Video Conference facilities – Subject to booking

Typical System Performance

Typically end-users (at 1 user per site) on an Office 1000 Premium Grade of Service can expect the following speeds *(note1)

Peak Hours		Off Peak Hours	
Web Download	Minimum Burst	64Kbps	128Kbps
	Maximum Burst	1024Kbps	1024Kbps
Average Throughput		256Kbps	512Kbps
FTP Download	Minimum Burst	64Kbps	128Kbps
	Maximum Burst	1024Kbps	1024Kbps
Average Throughput		256Kbps	512Kbps
E-Mail upload	Minimum Burst	16Kbps	32Kbps
	Maximum Burst	256Kbps	512Kbps
Average Throughput		96Kbps	128Kbps

*(note1) These figures are based on speeds measured to and from the Servers located in the LinkStar™ service. These figures do not apply to any servers located on remote satellite terminals, or servers located on the Internet as these are beyond the reasonable control of ALHAJJAN.

*(note2) Any applications that stream information, or are capable of slowing overall network performance, may be subject to throttling in accordance with the Internet Acceptable Use Policy. This is to ensure fair access to the LinkStar™ network.

*(note3) These are applications may be throttled if they are used in excess, but will normally be given low priority when compared to other types of traffic. The performance of these applications is not supportable by ALHAJJAN. See the Internet Acceptable Use Policy.

LinkStar™ Office 2000

Description

This is the highest Grade of Service for office users who often download large files or send e-mail with attachments. This Grade of Service is aimed at people who want a faster Internet service and do not use many services that are reliant on good performance. Users can have up to 29 PC's connected.

This Grade of Service will support the following applications:

- Web Browsing
- Web based e-mail
- Client / Server e-mails with attachments
- DNS queries
- Newsgroup access (including binary groups)
- FTP Server access
- Peer-to-peer file sharing applications such as Kazaa, WinMX or Napster. (Subject to throttling based on usage. See *(note2))
- VPN's (Subject to throttling based on usage. See *(note3))
- Citrix Metaframe (Subject to throttling based on usage. See *(note3))
- Terminal Services (Subject to throttling based on usage. See *(note3))
- Remote Desktop applications such as PcAnywhere (Subject to throttling based on usage. See *(note3))
- Any other streaming or real time applications. (Subject to throttling based on usage. See *(note2))

Users will be provided access to the following value added services:

- Public IP Addresses
- VPN's
- Video Conference facilities – Subject to booking

Typical System Performance

Typically end-users on an Office 2000 Grade of Service can expect the following speeds
*(note1)

Peak Hours		Off Peak Hours	
Web Download	Minimum Burst	128Kbps	256Kbps
	Maximum Burst	2048Kbps	2048Kbps
	Average Throughput	512Kbps	720Kbps
FTP Download	Minimum Burst	128Kbps	256Kbps
	Maximum Burst	2048Kbps	2048Kbps
	Average Throughput	512Kbps	720Kbps
E-Mail upload	Minimum Burst	16Kbps	16Kbps
	Maximum Burst	128Kbps	128Kbps
	Average Throughput	32Kbps	32Kbps

*(note1) These figures are based on speeds measured to and from the Servers located in the LinkStar™ service. These figures do not apply to any servers located on remote satellite terminals, or servers located on the Internet as these are beyond the reasonable control of ALHAJJAN.

*(note2) Any applications that stream information, or are capable of slowing overall network performance, may be subject to throttling in accordance with the Internet Acceptable Use Policy. This is to ensure fair access to the LinkStar™ network.

*(note3) These are applications may be throttled if they are used in excess, but will normally be given low priority when compared to other types of traffic. The performance of these applications is not supportable by ALHAJJAN. See the Internet Acceptable Use Policy.

LinkStar™ Office 2000 Plus

Description

This is the highest Grade of Service for office users who often download large files or send e-mail with attachments. This Grade of Service is aimed at people who want the faster Internet service and often use services that are reliant on good performance. Users can have up to 29 PC's connected.

This Grade of Service will support the following applications:

- Web Browsing
- Web based e-mail
- Client / Server e-mails with attachments
- Newsgroup access (including binary groups)
- FTP Server access
- Peer-to-peer file sharing applications such as Kazaa, WinMX or Napster. (Subject to throttling based on usage. See *note2)
- VPN's (Subject to throttling based on usage. See *(note3))
- Citrix Metaframe (Subject to throttling based on usage. See *(note3))
- Terminal Services (Subject to throttling based on usage. See *(note3))
- Remote Desktop applications such as PcAnywhere (Subject to throttling based on usage. See *(note3))
- Any other streaming or real time applications. (Subject to throttling based on usage. See *(note2))

Users will be provided access to the following value added services:

- Public IP Addresses
- VPN's
- Video Conference facilities – Subject to booking

Typical System Performance

Typically end-users on an Office 2000 Plus Grade of Service can expect the following speeds *(note1)

Peak Hours		Off Peak Hours	
Web Download	Minimum Burst	128Kbps	256Kbps
	Maximum Burst	2048Kbps	2048Kbps
	Average Throughput	512Kbps	720Kbps
FTP Download	Minimum Burst	128Kbps	256Kbps
	Maximum Burst	2048Kbps	2048Kbps
	Average Throughput	512Kbps	720Kbps
E-Mail upload	Minimum Burst	32Kbps	32Kbps
	Maximum Burst	256Kbps	256Kbps
	Average Throughput	64Kbps	64Kbps

*(note1) These figures are based on speeds measured to and from the Servers located in the LinkStar™ service. These figures do not apply to any servers located on remote satellite terminals, or servers located on the Internet as these are beyond the reasonable control of ALHAJJAN.

*(note2) Any applications that stream information, or are capable of slowing overall network performance, may be subject to throttling in accordance with the Internet Acceptable Use Policy. This is to ensure fair access to the LinkStar™ network.

*(note3) These are applications may be throttled if they are used in excess, but will normally be given low priority when compared to other types of traffic. The performance of these applications is not supportable by ALHAJJAN. See the Internet Acceptable Use Policy.

LinkStar™ Office 2000 Premium

Description

This is the highest Grade of Service for office users who often download large files or send e-mail with attachments. This Grade of Service is aimed at people who want the faster Internet service and often use services that are reliant on good performance. Users can have up to 29 PC's connected.

This Grade of Service will support the following applications:

- Web Browsing
- Web based e-mail
- Client / Server e-mails with attachments
- Newsgroup access (including binary groups)
- FTP Server access
- Peer-to-peer file sharing applications such as Kazaa, WinMX or Napster. (Subject to throttling based on usage. See *note2)
- VPN's (Subject to throttling based on usage. See *(note3))
- Citrix Metaframe (Subject to throttling based on usage. See *(note3))
- Terminal Services (Subject to throttling based on usage. See *(note3))
- Remote Desktop applications such as PcAnywhere (Subject to throttling based on usage. See *(note3))
- Any other streaming or real time applications. (Subject to throttling based on usage. See *(note2))

Users will be provided access to the following value added services:

- Public IP Addresses
- VPN's
- Video Conference facilities – Subject to booking

Typical System Performance

Typically end-users (at 1 user per site) on an Office 2000 Premium Grade of Service can expect the following speeds *(note1)

Peak Hours		Off Peak Hours	
Web Download	Minimum Burst	128Kbps	256Kbps
Maximum Burst		2048Kbps	2048Kbps
Average Throughput		512Kbps	720Kbps
FTP Download	Minimum Burst	128Kbps	256Kbps
Maximum Burst		2048Kbps	2048Kbps
Average Throughput		512Kbps	720Kbps
E-Mail upload	Minimum Burst	32Kbps	32Kbps
Maximum Burst		512Kbps	512Kbps
Average Throughput		96Kbps	128Kbps

Internet Acceptable Use Policy

PURPOSE

The purpose of this Internet Acceptable Use Policy is to inform all users of the LinkStar™ Service as to what is considered acceptable use and what is regarded as inappropriate.

SCOPE

All personnel with access to the Internet through any part of the LinkStar™ infrastructure, whether they are a customer, an employee or a licensed distributor, are bound by this policy.

POLICY

This Acceptable Use Policy specifies the actions prohibited by ALHAJJAN, to users of the LinkStar™ Network. Users may be defined as "any customer or distributor who uses or accesses the LinkStar™ Network Infrastructure or the Internet through the LinkStar™ Network". ALHAJJAN reserves the right to modify this Policy at any time, effective upon posting of the modified Policy to the ALHAJJAN website. Any modifications to this Policy will be made when ALHAJJAN feels it is appropriate, and it is the user's responsibility to ensure their awareness of any such changes.

ILLEGAL USE

The LinkStar™ Network may be used only for lawful purposes. Transmission, distribution or storage of any material in violation of any applicable law or regulation is prohibited. This includes, without limitation, material protected by copyright, trademark, trade secret or intellectual property right used without proper authorization, and material that is obscene, defamatory, constitutes an illegal threat, has a racist theme, or violates export control laws.

THE NETWORK

- a) The user acknowledges that ALHAJJAN is unable to exercise control over the content of the information passing over the LinkStar™ Network. Therefore, ALHAJJAN is not responsible for the content of any message, whether or not the posting was made by a customer of ALHAJJAN or one of its licensed distributors.
- b) The LinkStar™ Network may be used to link into other networks worldwide and the user agrees to conform to the Acceptable Use Policies of these networks. In addition the user undertakes to conform to the Internet protocols and standards.
- c) The user may not circumvent user authentication or security of any host, network, or account (referred to as "cracking" or "hacking"), nor interfere with service to any user, host, or network (referred to as "denial of service attacks") provided by, or on behalf of ALHAJJAN.
- d) Without prejudice to the foregoing, ALHAJJAN consider that any application that overloads the LinkStar™ Network by whatever means will be considered as making profligate use of the LinkStar™ Network and is as such NOT allowed. This will also apply to applications that the end user may not be aware of, such as viruses and worms.

- e) The usage of any streaming or real-time applications will be actively monitored and anyone making excessive use of the network capacity will have the application throughput speed reduced, so as not to reduce the overall performance of the LinkStar™ System. This will also be applicable to Peer to Peer file sharing applications.
- f) Use of IP multicast or broadcast services are likewise prohibited.
- g) Users who violate systems or network security may incur criminal or civil liability. ALHAJJAN will fully co-operate with investigations of suspected criminal violations, violation of systems or network security under the leadership of law enforcement or relevant authorities.
- h) ALHAJJAN reserves the right to monitor the network for traffic that violates this policy. If any infringement is recognized to be the responsibility of a user of the LinkStar™ network, then that user will be removed from the network until such time as the violation has ceased. If an infringement is recognized to have taken place against a user, then ALHAJJAN will make a report and forward it to the abuse department of the offending ISP on behalf of the user. Any user who repeatedly violates this policy may have their access to the LinkStar™ network removed permanently.

SYSTEM AND NETWORK SECURITY

Violations of system or network security are prohibited, and may result in criminal and civil liability. ALHAJJAN will investigate incidents involving such violations and will involve and will co-operate with law enforcement if a criminal violation is suspected. Examples of system or network security violations include, without limitation, the following:

- a) Unauthorized access to or use of data, systems or networks, including any attempt to probe, scan or test the vulnerability of a system or network or to breach security or authentication measures without express authorization of the owner of the system or network;
- b) Unauthorized monitoring of data or traffic on any network or system without express authorization of the owner of the system or network;
- c) Interference with service to any user, host or network including, without limitation, mail bombing, flooding, deliberate attempts to overload a system and broadcast attacks. This includes other LinkStar™ users;
- d) Forging of any TCP-IP packet header or any part of the header information in an email or a newsgroup posting.

If approached with complaints relating to any of the above violations, ALHAJJAN will co-operate and assist the Police and law enforcing bodies with their investigations in order to bring such misuse and violations to an end.

VIRUSES AND WORMS

ALHAJJAN will proactively monitor the LinkStar™ network for signs of virus or worm activity. In the event that an infection is located then the originating system will be removed from the LinkStar™ network, until such time as ALHAJJAN LTD are informed

that the virus or worm has been eradicated. ALHAJJAN LTD will endeavor to provide as much notice of the removal of a system as possible. ALHAJJAN LTD reserve the right to remove any unit without notice if there is any possibility that the virus or worm infection may spread to other LinkStar™ users.

E-MAIL

- a) It is explicitly prohibited to send unsolicited bulk mail messages ("junk mail" or "spam") of any kind (commercial advertising, political tracts, announcements) etc.
- b) It is also explicitly prohibited to allow others to send unsolicited bulk mail messages either directly or by relaying through the Users systems. For the avoidance of doubt, users must ensure that their systems cannot be relayed through. Users may not forward or propagate chain letters or malicious e-mail.
- c) A User may not solicit mail for any other address other than that of the user, except with full consent of the owner of the referred address.

USENET NEWS

- a) Users should, before using the service, familiarize themselves with the contents of the following newsgroups : news.newusers.questions ; news.announce.newusers ; and news.answers
- b) Excessive cross-posting (ie, posting the same article to large numbers of newsgroups) is forbidden.
- c) Posting of irrelevant material to newsgroups (also known as USENET spam) is also forbidden.
- d) Posting binaries to a non-binary newsgroup is forbidden.

ENFORCEMENT

Any ALHAJJAN employee found to have violated this policy may be subject to disciplinary action, up to and including termination of employment.

Any customer of ALHAJJAN or one of its licensed distributors found to have violated this policy may have the service revoked for the offending user. In the case of a remote site on the LinkStar™ network violating this policy then the site will be disabled until such a time as the offending user or machine ceases in its unacceptable behavior.

Complaints regarding Illegal Use or System or Network Security issues, Email abuse, USENET abuse or Spamming should be sent to abuse@alhajjan.com

Anti-Virus Policy

1.0 Purpose

This document describes the basic steps to take to prevent the infection by, and the transmission of computer based electronic viruses.

2.0 Scope

All equipment connected to, either directly or indirectly, the ALHAJJAN LTD network is affected by this document.

3.0 Policy

Recommended processes to prevent virus problems:

- Always run standard, well-supported anti-virus software available from any computer vendor. Download and run the current version; download and install anti-virus software updates as they become available or weekly, dependant on which is sooner.
- NEVER open any files or macros attached to an email from an unknown, suspicious or untrustworthy source. Delete these attachments immediately, then "double delete" them by emptying your Trash.
- Delete Spam, chain, and other junk email without forwarding, in accordance with the ALHAJJAN LTD Europe' Internet Acceptable Use Policy.
- Never download files from unknown or suspicious sources.
- Avoid direct disk sharing with read/write access unless there is absolutely a business requirement to do so.
- Always scan a floppy diskette from an unknown source for viruses before using it.
- Back-up critical data and system configurations on a regular basis and store the data in a safe place.
- If testing conflicts with anti-virus software, run the anti-virus utility to ensure a clean machine, disable the software, then run the test. After the test, enable the anti-virus software. When the anti-virus software is disabled, do not run any applications that could transfer a virus, e.g., email or file sharing.
- New viruses are discovered almost every day. Periodically check the Virus Software providers warning pages for updates.
- Do not run any unnecessary services on routers and servers and keep hot fixes and patches up to date.

LinkStar Abuse Regulation Clause (SPARC)

LinkStar® system usage data indicates that approximately 10% of subscribers are responsible for a disproportionate share - often as much as half - of the total LinkStar service traffic. Unfortunately, many of those subscribers are not using LinkStar for its intended purpose.

To ensure that all LinkStar subscribers have fair and equal access to the benefits of the Satellite broadband service, ALHAJJAN - InternetVSAT.com has in place a LinkStar Abuse Clause (SPARC).

The purpose of the SPARC is the following:

- To establish legitimate behavior patterns to prevent abusive consumption of bandwidth by a handful of users, to prevent hacking and to keep ALHAJJAN - InternetVSAT.com end users informed of virus activity.

SPARC is straightforward: based on an analysis of usage data, ALHAJJAN - InternetVSAT.com has established a LinkStar usage threshold well above the maximum typical usage rates. When a customer exhibits patterns of system usage that exceed that threshold for an extended period of time, the SPARC limits the user to a set level

depending on what tier of the clause has been tripped this is to ensure the integrity of the system for all LinkStar subscribers.

Typically, the restrictions will be lifted within 4-5 hours of the original application of the SPARC if the customer's usage in this period stays below the SPARC threshold. Subscribers are likely to avoid the limitations imposed by the SPARC if their use is typical of the majority of Internet users and consists of Web surfing and a reasonable amount of downloading.

Streaming Data Levels for Grades of Service (GOS)

The figures below are based on the criteria of streaming at a constant data rate. TDMA sat comms are modeled on burst type behavior. Therefore to ensure no one user can hold onto to the bandwidth for an excessive time period a monitoring system measures the data throughput over a time period at an average peak hours data rate for that package. Apart from the obvious difference in Kbps on the various GOS ALHAJJAN assumes that “streaming “ is allowed over the following time periods without having a detrimental affect to the broadband system

Package	Time Frame Download	Time Frame Upload
Home 500 /100	1 Hour	2 Hour
Home 500 Plus	1 Hour	2 Hour
Office 500	2 Hour	2 Hour
Office 500 Plus	2 Hour	2 Hour
Office 500 Premium	2 Hour	3 Hour
Office 1000	2 Hour	3 Hour
Office 1000 Plus	2 Hour	3 Hour
Office 1000 Premium	2 Hour	3 Hour
Office 2000	2 Hour	4 Hour
Office 2000 Plus	2 Hour	4 Hour
Office 2000 Premium	2 Hour	4 Hour

There are different levels of quota Burst, Level 1 (L1), Level 2 (L2). So what volume is the Burst Limit? Following is an example of an Office 500
 It’s calculated by taking 2 hours at 256k bits/s. That’s $2 \times 3600 \times 256000 / 8$. The divide by 8 is to convert bits/s to bytes. I make this 230 Mbytes, and a penalty of 256k bits/s. The upload should be a ¼ of this, which rounds up to 58 Mbytes and a penalty for of 64kbps (128 for plus service). That’s about the size of downloading a new OS – or upgrading 10 PC’s with the latest fixes from Microsoft’s download website if you have not done this is a while.

All usage is reset every eight hours so unless a particular site is streaming heavily the penalties will not come into place. ALHAJJAN do not operate a discarded throttle model. i.e no traffic at all so a customer will never lose service completely.

Please see the table below, which indicates quite clearly what, is allowed over an eight hour period.

Gos	Download Kbps	Upload Kbps	Gos
Home 500	512	128	Home 500
GOS Average	128	64	GOS Average
Burst Quota MB	58	58	Burst Quota MB
Penalty Kbps	128	64	Penalty Kbps
Level 1 Quota MB	43	43	Level 1 Quota MB
Penalty Kbps	64	32	Penalty Kbps
Level2 Quota MB	72	72	Level2 Quota MB
Penalty Kbps	32	16	Penalty Kbps
Home 1000	1024	128	Home 1000
GOS Average	256	64	GOS Average
Burst Quota	115	58	Burst Quota
Penalty Kbps	256	64	Penalty Kbps
Level 1 Quota	86	43	Level 1 Quota
Penalty Kbps	128	32	Penalty Kbps
Level2 Quota	144	72	Level2 Quota
Penalty Kbps	64	16	Penalty Kbps
Office 500	512	128	Office 500
GOS Average	256	64	GOS Average
Burst Quota	230	58	Burst Quota
Penalty Kbps	256	64	Penalty Kbps
Level 1 Quota	173	43	Level 1 Quota
Penalty Kbps	128	32	Penalty Kbps
Level2 Quota	288	72	Level2 Quota
Penalty Kbps	64	16	Penalty Kbps
Office 500 Plus	512	256	Office 500 Plus
GOS Average	256	128	GOS Average
Burst Quota	230	115	Burst Quota
Penalty Kbps	256	128	Penalty Kbps
Level 1 Quota	173	86	Level 1 Quota
Penalty Kbps	128	64	Penalty Kbps
Level2 Quota	288	144	Level2 Quota
Penalty Kbps	64	32	Penalty Kbps
Office 500 Premium	512	512	Office 500 Premium
GOS Average	256	256	GOS Average
Burst Quota	230	346	Burst Quota
Penalty Kbps	256	256	Penalty Kbps
Level 1 Quota	173	259	Level 1 Quota
Penalty Kbps	128	128	Penalty Kbps
Level2 Quota	288	432	Level2 Quota
Penalty Kbps	64	64	Penalty Kbps
Office 1000	1024	128	Office 1000
GOS Average	512	64	GOS Average
Burst Quota	461	115	Burst Quota

Penalty Kbps	512	64	Penalty Kbps
Level 1 Quota	346	86	Level 1 Quota
Penalty Kbps	256	32	Penalty Kbps
Level2 Quota	576	144	Level2 Quota
Penalty Kbps	128	16	Penalty Kbps
Office 1000 Plus	1024	256	Office 1000 Plus
GOS Average	512	128	GOS Average
Burst Quota	461	173	Burst Quota
Penalty Kbps	512	128	Penalty Kbps
Level 1 Quota	346	130	Level 1 Quota
Penalty Kbps	256	64	Penalty Kbps
Level2 Quota	576	216	Level2 Quota
Penalty Kbps	128	32	Penalty Kbps
Office 1000 Premium	1024	512	Office 1000 Premium
GOS Average	512	256	GOS Average
Burst Quota	461	346	Burst Quota
Penalty Kbps	512	256	Penalty Kbps
Level 1 Quota	346	259	Level 1 Quota
Penalty Kbps	256	128	Penalty Kbps
Level2 Quota	576	432	Level2 Quota
Penalty Kbps	128	64	Penalty Kbps
Office 2000	2048	128	Office 2000
GOS Average	1024	64	GOS Average
Burst Quota	922	115	Burst Quota
Penalty Kbps	1024	64	Penalty Kbps
Level 1 Quota	691	86	Level 1 Quota
Penalty Kbps	512	32	Penalty Kbps
Level2 Quota	1152	144	Level2 Quota
Penalty Kbps	256	16	Penalty Kbps
Office 2000 Plus	2048	256	Office 2000 Plus
GOS Average	1024	128	GOS Average
Burst Quota	922	173	Burst Quota
Penalty Kbps	1024	128	Penalty Kbps
Level 1 Quota	691	130	Level 1 Quota
Penalty Kbps	512	64	Penalty Kbps
Level2 Quota	1152	216	Level2 Quota
Penalty Kbps	256	32	Penalty Kbps
Office 2000 Premium	2048	512	Office 2000 Premium
GOS Average	1024	256	GOS Average
Burst Quota	922	346	Burst Quota
Penalty Kbps	1024	256	Penalty Kbps
Level 1 Quota	691	259	Level 1 Quota
Penalty Kbps	512	128	Penalty Kbps
Level2 Quota	1152	432	Level2 Quota
Penalty Kbps	256	64	Penalty Kbps

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