

Quick Com

Serverless Communications

Transforming the reliability, security and scalability of IT communications through the pervasive deployment of serverless software infrastructure.

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CEO & President

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Chief Engineer

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Serverless Communications probably represents the single most immediate step towards making data communications easier, more secure, improving reliability and has the same importance for Information Technology as the advent of the database.

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Agenda

What is serverless communications?

Quality of Service software

Where is the edge?

Serverless technology in fragmented networks.

How can serverless technologies help homeland security?

Deployment of serverless technology

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What we do

Quick Com is a provider of software infrastructure enabling any form of data communications including streaming media and the distribution and exchange of large files, data and images.

There is no need to change or reconfigure any existing physical infrastructure.

Media distribution to unlimited numbers of recipients requires only the same network resources as if sending to one single user.

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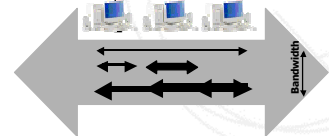
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Client Server vs. Serverless

Client Server Systems



Serverless Systems

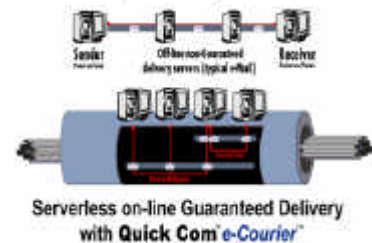


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Serverless Communications



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Quick Com Guaranteed Quality of Service

1. Connectivity
Regional Access
Enabled Devices

2. Availability
Open Channels
Vs Closed Channels

3. Capacity
Total Available Bandwidth

4. Speed
Transit Latency
Transit Source Start Time
Transit Destination Completion Time

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Quick Com Variable Bit Rate VBR Networks

WPLAN/WAN Segment

Intranet

GQoS Traffic

Internet Traffic

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Quick Com Identifying the Edge

Local Backbone

Backbone

Local Backbone

End User PCs

Router / X2B / DSL Modem

Local Broadband connection

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Quick Com Best Effort Software

The software is not network-resource aware

Every user and application is competing for network resources

As more users and applications are active the network gets slower and eventually dysfunctional.

Solution: More Bandwidth, More Infrastructure

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Quick Com QoS Software

QoS software performs with in certain defined network resource limits.

QoS software does not compromise other network applications or slow down the network as additional users join using QoS applications.

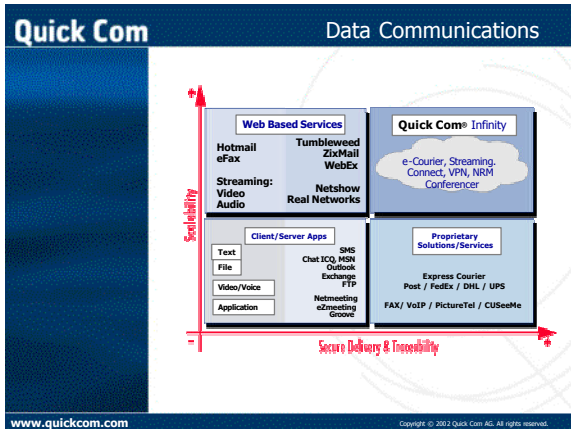
QoS software can therefore increase Reliability and be more scaleable than conventional "Best Effort" applications.

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Quick Com Data Communications

- Text
- File Transfer
- Video / Voice
- Applications

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- Quick Com** eMail and Text Messaging
- Did it get there?
 - Was it readable?
 - Did it get to the right person?
 - Did it get into the wrong hands?
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Quick Com Opportunity

Serverless Communications offers a similar IT enabling opportunity for businesses as did the advent of the Database

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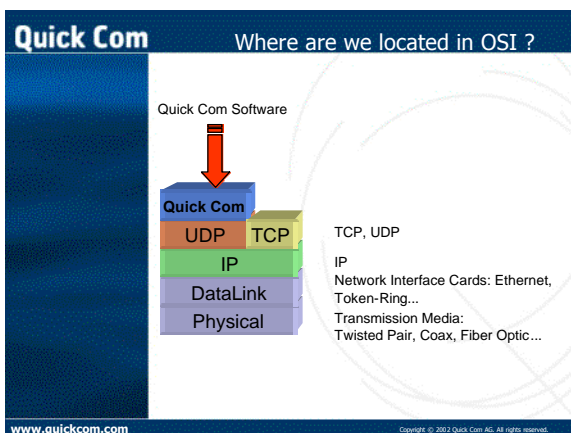
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Quick Com Quick Com Infinity

A patent-pending secure serverless Data Communications Platform for Networking, Messaging, Data Exchange, Distribution and Streaming Media

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- Quick Com** Data Communication Elements
- Applications**
What function does the end-user experience
 - Connectivity**
How are individuals connected and communicate. Sometimes at group level.
 - Management**
Of users and resources
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Quick Com Data Communication Elements

Applications
 Reliable Messaging
 File Exchange / Distribution
 Media Streaming, Conferencing

Connectivity
 VPN Technology
 Connectivity protocols

Management
 Network resource and community management.

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Quick Com Platform

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Quick Com Features

- Direct One to One Communications
- Direct Any to Many Communications (First private Multicasting Internet solution)
- Increased Security
- Increased Reliability (No Single Point of Failure)
- Track and Trace of all Transactions
- Unlimited numbers of selected participants simultaneously
- No Limits in amount of data exchanged (sent once to many)
- No Distance/Latency Restrictions
- Auto session recovery
- Guaranteed Quality of Service
- Fully Scaleable architecture

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The sender maintains control over their data and can monitor and control the distribution on an individual basis.

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Quick Com Introduction

- Quick Com serverless technology uses IP Multicast (Class D UDP) as a transport protocol
- IP Multicast behaves very much like a switched network.
- IP Multicast does cannot traverse the Internet and therefore requires an overlay network to connect across non-multicast networks like the Internet.

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Quick Com IP Multicast

IP Multicast >> Join a Group

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IP Multicast

IP Multicast >> Dataflow Point to Point

■ PC/Minion (1000000000)
 ■ Server

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Basic Architecture

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JMS - Bus

JMS-Bus is a middleware information exchange bus that resides on the networked device and can be used to connect any device with any other.

The devices message between each other house keeping functions ect. On a bandwidth limited JavaMessaging channel.

Performance Metrics
600 MHz Pentium III = 57Mbps throughput

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Basic Concept

- Connections are event triggered not polled.
- Speed of communication between devices is automatically managed within boundary conditions set up by the network operator.

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Virtual Private Network

■ Unicast Traffic over the Internet
 ■ Multicast Traffic wrapped and unwrapped in Unicast Packets
 ■ Logical view of an IP Tunnel
 ■ Physical connection to the Internet

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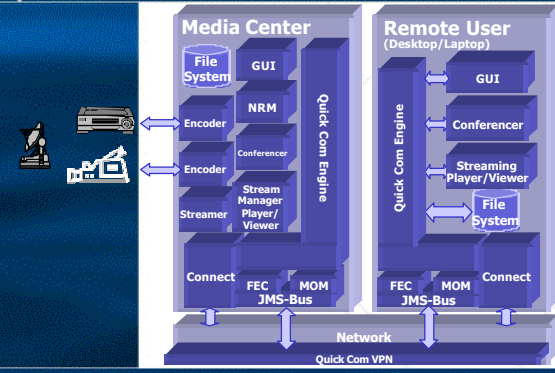
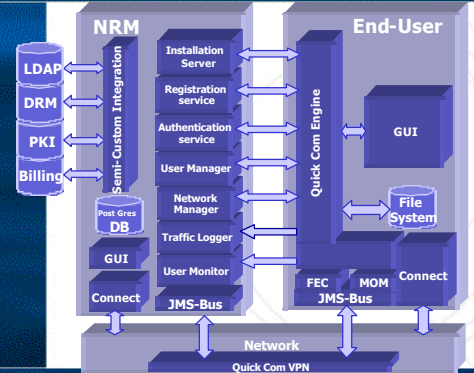
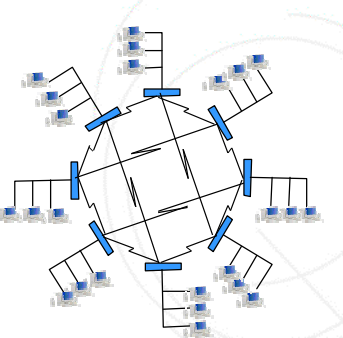
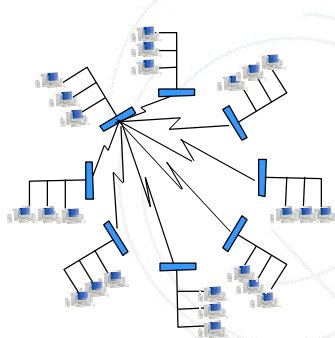
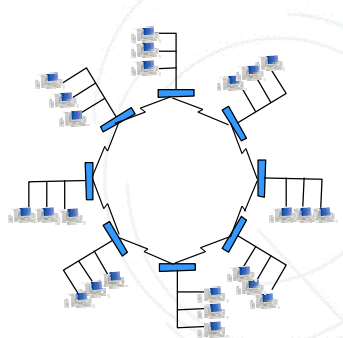
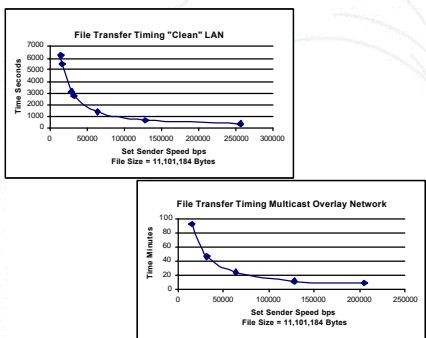
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Overlay Edge Router VPN

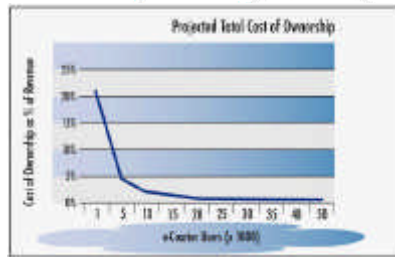
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Cost of Ownership



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User Cases

Distribution and Exchange of Media to unlimited devices or end-users with minimized infrastructure investment and operational costs.

Distribution and Exchange of data with a file size greater than that typically supported by a server.

Tim Critical, Reliable messaging of multiple users simultaneously.

Confirmation of receipt/delivery, user monitoring.

Privacy, Security and Scalability.

Users who have a requirement to communicate directly to a closed user group with guaranteed delivery.

Software Distribution, e-Learning

Corporate communications

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Case Study Satellite

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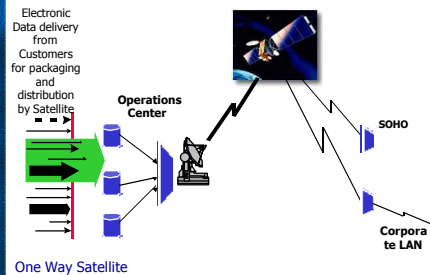
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Simplex

Good for:
One to Many
Volatile Data
Video/Audio Feeds
Information Feeds
Server Updates
Non-Critical



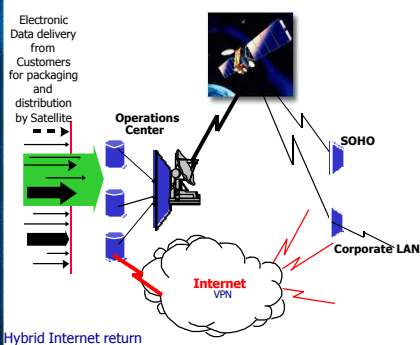
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Hybrid

Good for:
One to Many
non-Volatile Data
High-speed Internet
Interactive Services
Reliable Delivery
Centralized Intranet



Hybrid Internet return

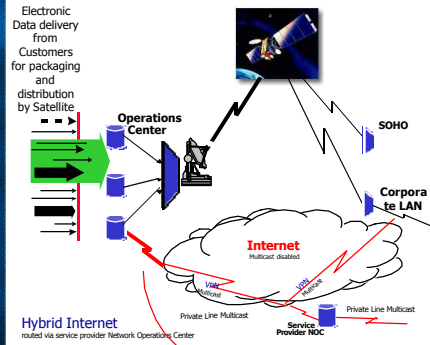
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Hybrid Mesh

Good for:
One to Many
non-Volatile Data
High-speed Internet
Interactive Services
Reliable Delivery
Centralized Intranet
Virtual Providers



Hybrid Internet
routed via service provider Network Operations Center

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Duplex

Good for:
Any to Many
Two Way Broadband
Reliable Delivery
Weak Terrestrial Links
Decentralized Intranet

Electronic Data delivery from Customers for packaging and distribution by Satellite

Satellite return

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Technical Study Firewalls

Serverless Communications

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Firewall as a Gateway between two Networks

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Destination unknown

Little or no risk to private network
Possible risk to destination
Possible misuse of private resources
No responsibility to protect public network user

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Source unknown

Unknown risk
Unknown source
Known destination - possible threat to private network
Role of the firewall is to protect known destination

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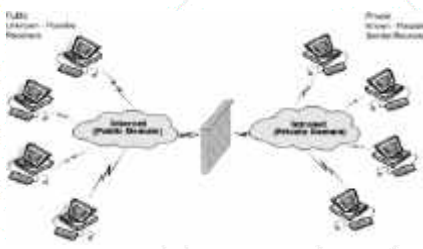
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Firewall as Gateway Between Multicast Users

Firewall can always identify multicast source
Firewall cannot identify multicast destination
Multicast sessions involve an arbitrary number of destinations

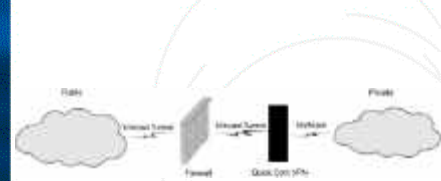
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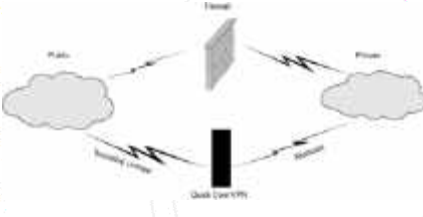


Firewall can always identify multicast source
Firewall cannot identify multicast destination

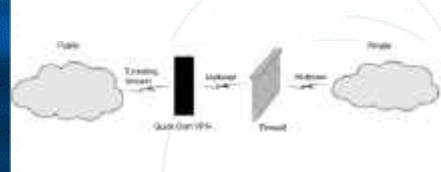
Multicast sessions involve an arbitrary number of destinations



Firewall set to recognize and relay VPN Unicast packets from trusted sources
Firewall does not change source or destination information of VPN Packets



Firewall set to block all Multicast packets
The Overlay Edge Router VPN only tunnels Multicast packets



Firewall set up to recognize and relay IP Multicast packets from private to public domain

Overlay Edge Router VPN must be able to pass all required traffic

- Higher network performance, security / privacy.
- No copying, reading or changing in transit.
- No major investment required.
- Short deployment time.
- Works anywhere in the world on almost any device.
- Better control and security

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