Serverless Communications

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

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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.

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.

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

Quick Com

Client Server vs. Serverless

Quick Com

Serverless Communications

Serverless on-the-fly Guaranteed Delivery with Quick Com’s e-Courier
Quick Com | Guaranteed Quality of Service

1. Connectivity
2. Availability
3. Capacity
4. Speed

Quick Com | Variable Bit Rate VBR Networks

Regional Access
Enabled Devices
Open Channels
Closed Channels
Total Available Bandwidth
Reserved Segment
GQoS Traffic
Internet Traffic

Quick Com | Identifying the Edge

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

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 scalable than conventional "Best Effort" applications.

Quick Com | Data Communications

- Text
- File Transfer
- Video / Voice
- Applications
Serverless Communications offers a similar IT enabling opportunity for businesses as did the advent of the Database

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

Where are we located in OSI?

Applications
What function does the end-user experience

Connectivity
How are individuals connected and communicate. Sometimes at group level.

Management
Of users and resources
**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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**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 Scalable architecture

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**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 not traverse the Internet and therefore requires an overlay network to connect across non-multicast networks like the Internet.

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**IP Multicast**

The sender maintains control over their data and can monitor and control the distribution on an individual basis.
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 etc. On a bandwidth limited Java Messaging channel.

Performance Metrics

- 600 MHz Pentium III = 57Mbps throughput

• Connections are event triggered not polled.

• Speed of communication between devices is automatically managed within boundary conditions set up by the network operator.
**Cost of Ownership**

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**

Serverless Communications

**Simplex**

Good for:

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

**Hybrid**

Good for:

- One to Many
- Non-Volatile Data
- High-speed Internet
- Interactive Services
- Reliable Delivery
- Centralized Intranet

**Hybrid Mesh**

Good for:

- One to Many
- Non-Volatile Data
- High-speed Internet
- Interactive Services
- Reliable Delivery
- Centralized Intranet

Electronic Data delivery from customers for packaging and distribution by Satellite

Operations Center

SOHO

Corporate LAN

Internet

Hybrid Internet return
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.

Overlay Edge Router VPN behind Firewall

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

Overlay Edge Router VPN parallel to Firewall

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

Overlay Edge Router VPN in front of Firewall

- 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.

Summary

- 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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