DIPL.ING.(FH)KLAUS ROCK

HTTP-QuSS

HTTP - QUANTUM SPEED AND SECURITY

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February 14, 2022

CONSUMER - MARKET SEGMENT

What is HTTP-QuSS

HTTP-QuSS 5G consists of **High-Performance Computing (*HPC*) Server** and **lightweight Clients** for all OS Platforms, Routers, Gateways and Modems.

The **HTTP-QuSS 5G Server** processes and transmits URL requests to the Client Browser in such a way that up to **90 % less Data** for static and up to **50 %** for dynamic WEB Contents will be transmitted and therefor only a fractional of Bandwidth is needed to provide a similar performance as you would expect within a high Broadband Connection.

Satellite   Fiber Optic

VSAT   DSL Router Gateway

HTTP-SS
Clustered Power Servers

Mobile WLAN
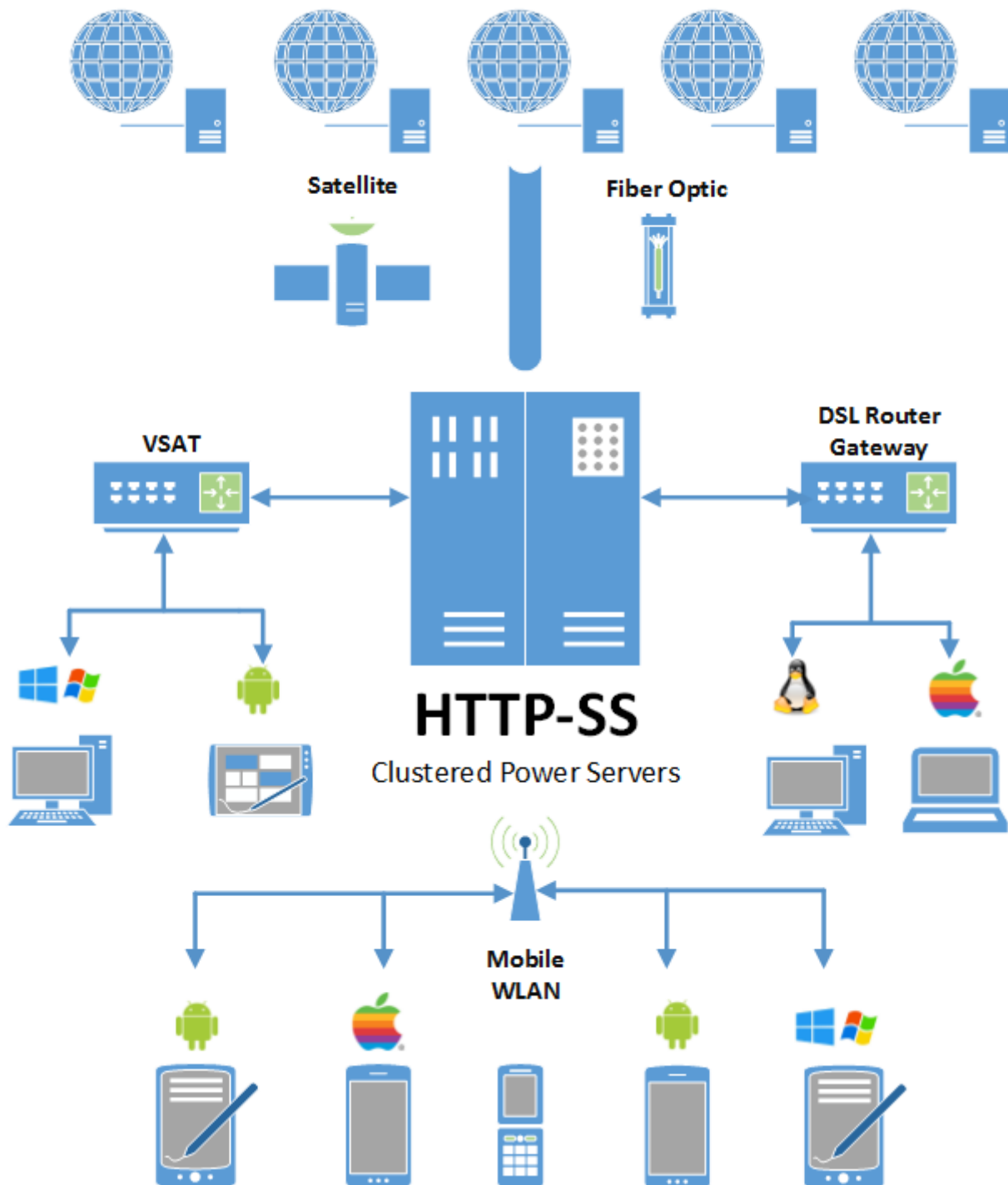
Unique Selling Proposition

- **De-Duplication**

    - ✓ Contained multiple (pure Delta Transmission on Bit-Level Reduction up to 90%)

- **Total Elimination of the Latency Problem**

    - ✓ Through new HTTP Single Stream Technology

- **Highly reduced Data Transmission for all WEB Objects**

    - ✓ By using an Algorithm on Byte Level

    - ✓ 90 % reduced Data Transmission

    - ✓ Forward Error Correction to reduce Retransmissions

- **Own solid rock Virtual Machine for Routers and Modems**

    - ✓ With its own highly efficient Process and Processor management

    - ✓ Integrated functional Language without Site Effects

    - ✓ Smart parallel Process spawning with high efficient Process Inter Communication

    - ✓ And much more …

- **100 % secure Encryption**

    - ✓ Through Transmission of Figures which depend on the Client and Server State only for a fraction of Time.

- **Pure Software Solution**

    - ✓ No need of special Hardware on Client Site

- **Fast and transparent Installation and Integration**

    - ✓ No need of Reconfigurations in existing Infrastructure

    - ✓ Fully transparent for User

    - ✓ On all Devices like PC, Laptops, Smartphones (Android, iOS), DSL- and VSAT Routers etc.

Advantages for Licensees

- Best use of limited Resources (Bandwidths)

- More efficient and faster Data Transmission

  - ✓ Faster WEB Page Loading

  - ✓ Significantly better Performance

- Transparent and fast Integration into existing Infrastructure

- Cost Savings

- Higher Customer Satisfaction

- New Customers, Competitive Displacement

- Image Profit
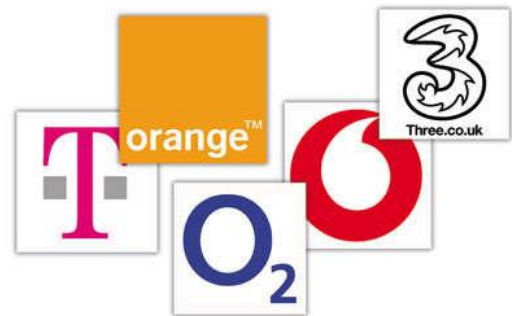
Advantages for Users

- Can double his existing Bandwidth by simply downloading an App

- Can reduce his monthly Costs dramatically because Data Volume will be reduced
  by **90 %**

- Much better WEB Page Load Performance

- No upgrade of existing Provider Contracts

- In a Satellite or Mobile Network no Latency Issues

- Much better Performance for Cloud Applications

- Fast Cloud Data Backup

- Broadband Availability, even in rural Areas

- No special Hardware because only our Software is needed

- Zero Installation Scenario – no complicated Configuration – Install and Run
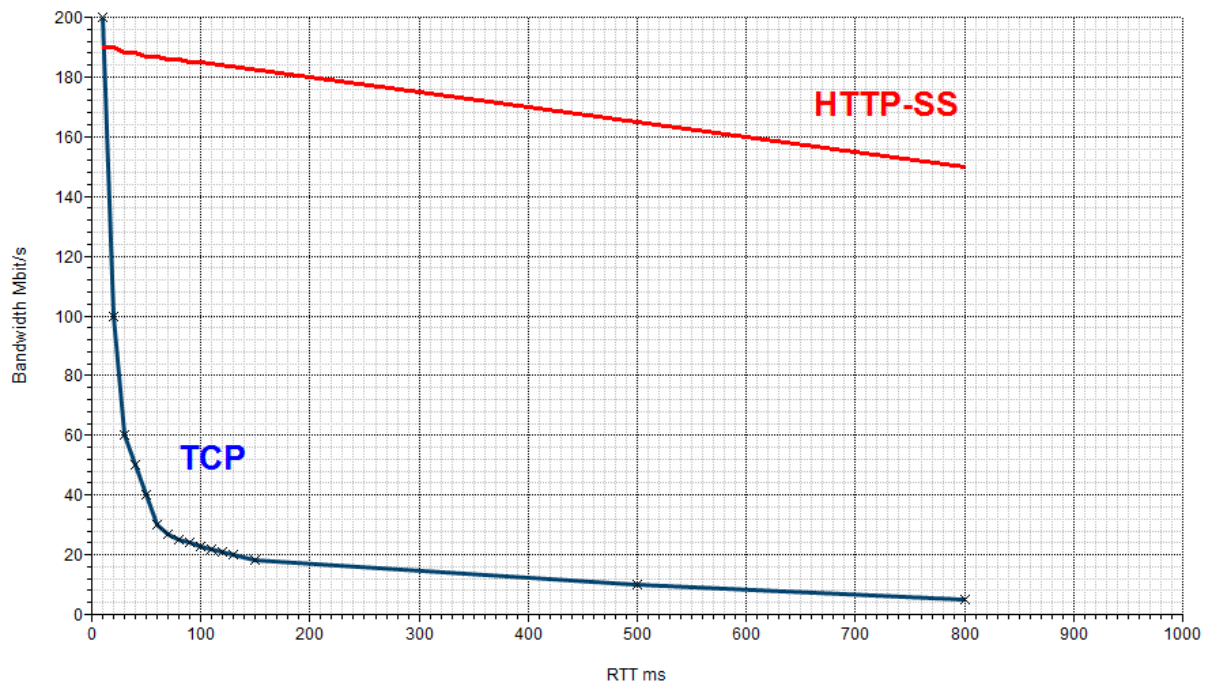
Transparent Network Integration

- No need to change Network Infrastructure by fully **transparent Network Integration**
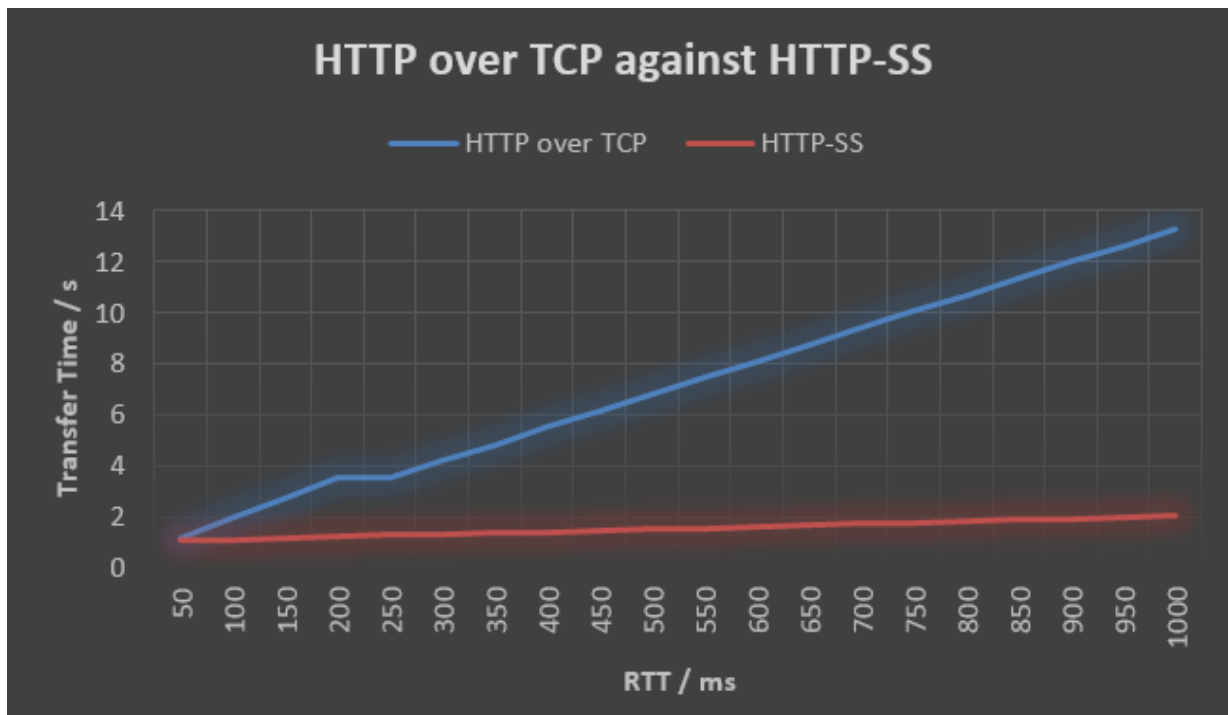
- Supports **all common Browsers**
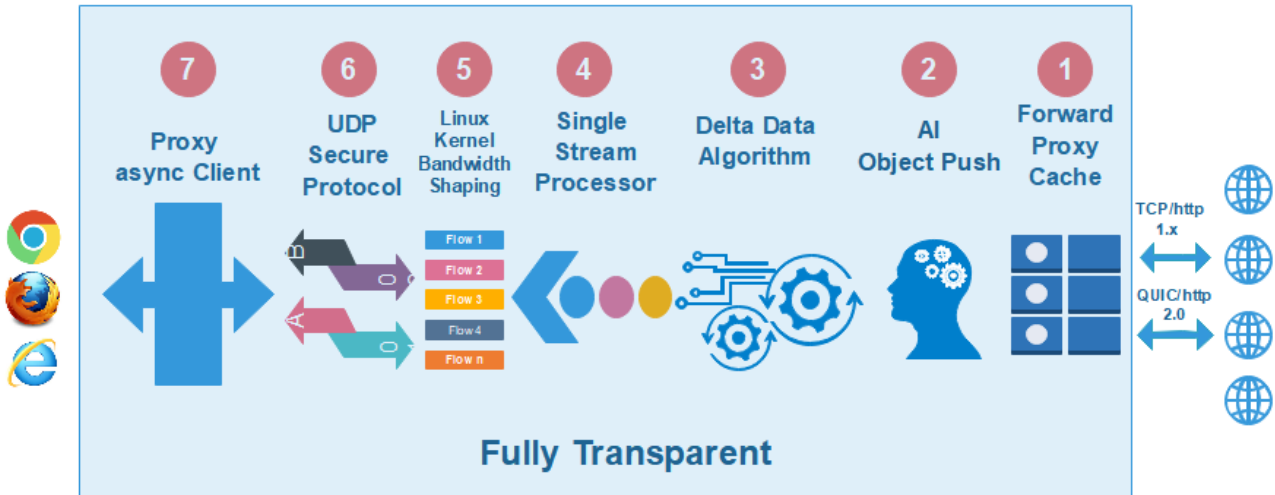
Latency Bandwidth Resistance

- **No Dependency** between **R**ound **T**rip **T**ime and **TCP Bandwidth**

- **Breakthrough** in higher bandwidths Regions even at very long Round Trips

Faster WEB Object Transfer Time

- **WEB Object Transfer Time** nearly constant even at very high Round Trips

- **50 %** better Performance within RTT Range 50 – 100 ms

- Up To **500 %** better Performance in very High Latency IP Networks

- **No visible Difference** of Browser Page Load Time within higher or very high Latency Networks

- Even much better Performance in very High Bandwidth Regions **over 50 Mbit/s**

RTT / ms	Transfer Time / s		Performance
	HTTP v. TCP	HTTP-SS uncompressed*	
50	1,16	1,07	8,41%
100	1,95	1,098	77,60%
150	2,734	1,19	129,75%
200	3,533	1,216	190,54%
250	3,535	1,272	177,91%
300	4,169	1,32	215,83%
350	4,794	1,364	251,47%
400	5,536	1,41	292,62%
450	6,166	1,465	320,89%
500	6,817	1,524	347,31%
550	7,475	1,542	384,76%
600	8,099	1,621	399,63%
650	8,728	1,665	424,20%
700	9,384	1,715	447,17%
750	10,045	1,774	466,23%
800	10,686	1,817	488,11%
850	11,31	1,874	503,52%
900	11,963	1,921	522,75%
950	12,63	1,986	535,95%
1000	13,276	2,033	553,03%

Reduced DNS Lookup and Data Volume

- **HTTP-QuSS Client Proxy** also improves DNS Lookup Overhead (**Latency and Volume**) on first Page Load

- **HTTP-QuSS Client Proxy** also improves DNS Lookup Overhead (**Time and Volume**) on subsequent Page Loads (Cached Page)
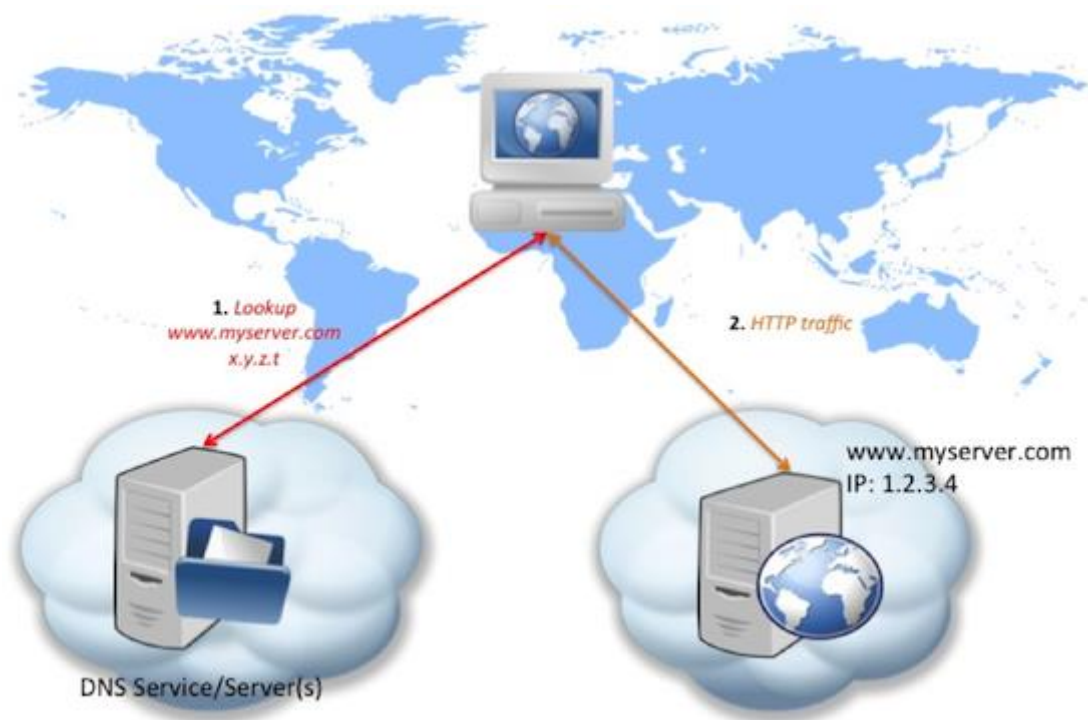
- Up to **40 % Volume Reduction** for a Page reload Operation through **Delta Data Transmission** vs. normal HTTP