

PS Speicher- und Dateisysteme

WAFS(Wide Area File System)

Structure of the presentation:

1. Introduction

2. WAFS:

2.1. Definition

2.2. Architecture

2.3. Features

3. Conclusion

Introduction

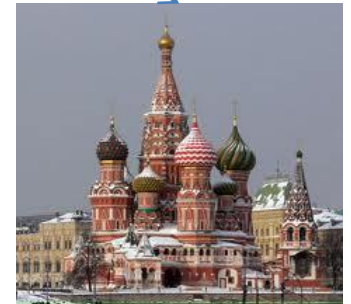


In Europe:
2600
employees

Nowadays Intel has more than **83900** employees in **48** countries in over **294** offices



In India: over 2900 employees



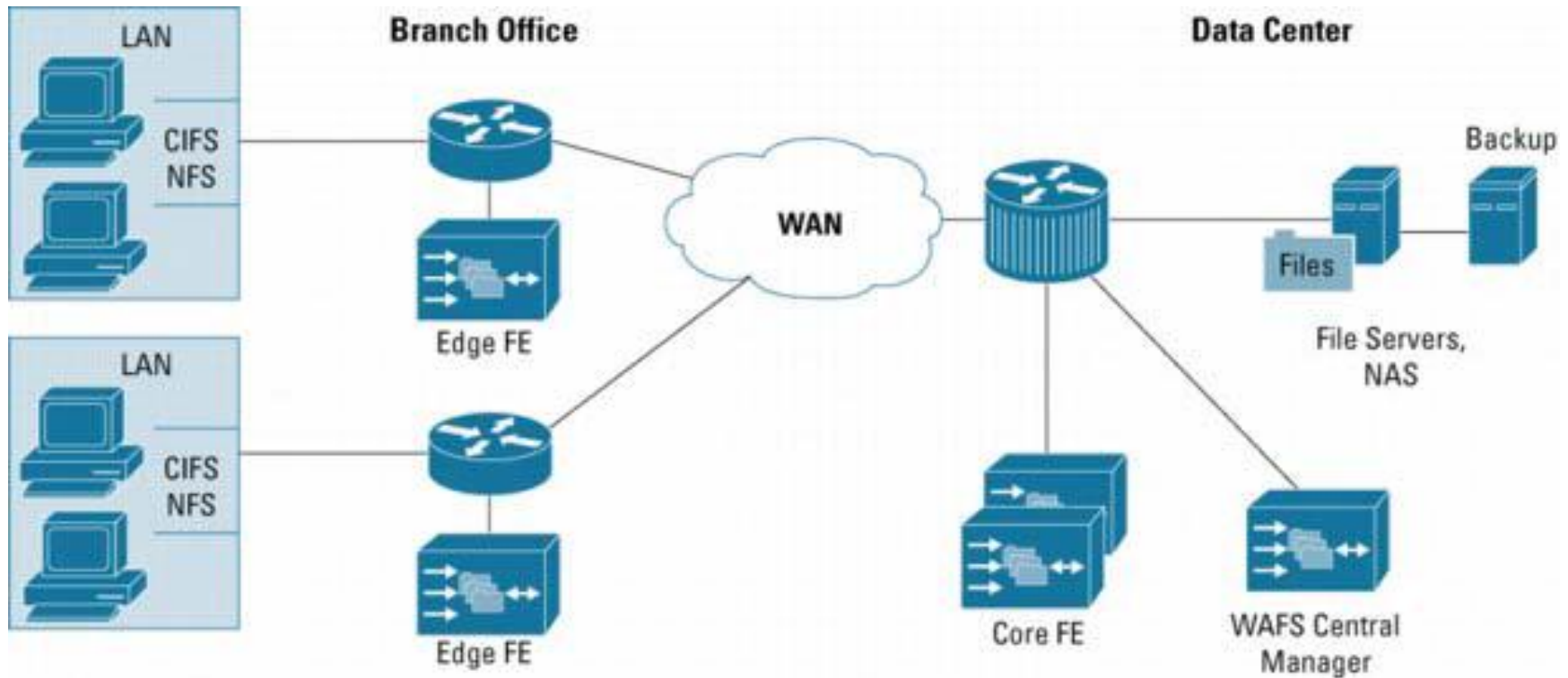
In Russia:
1150
employees

WAFS as Possible solution



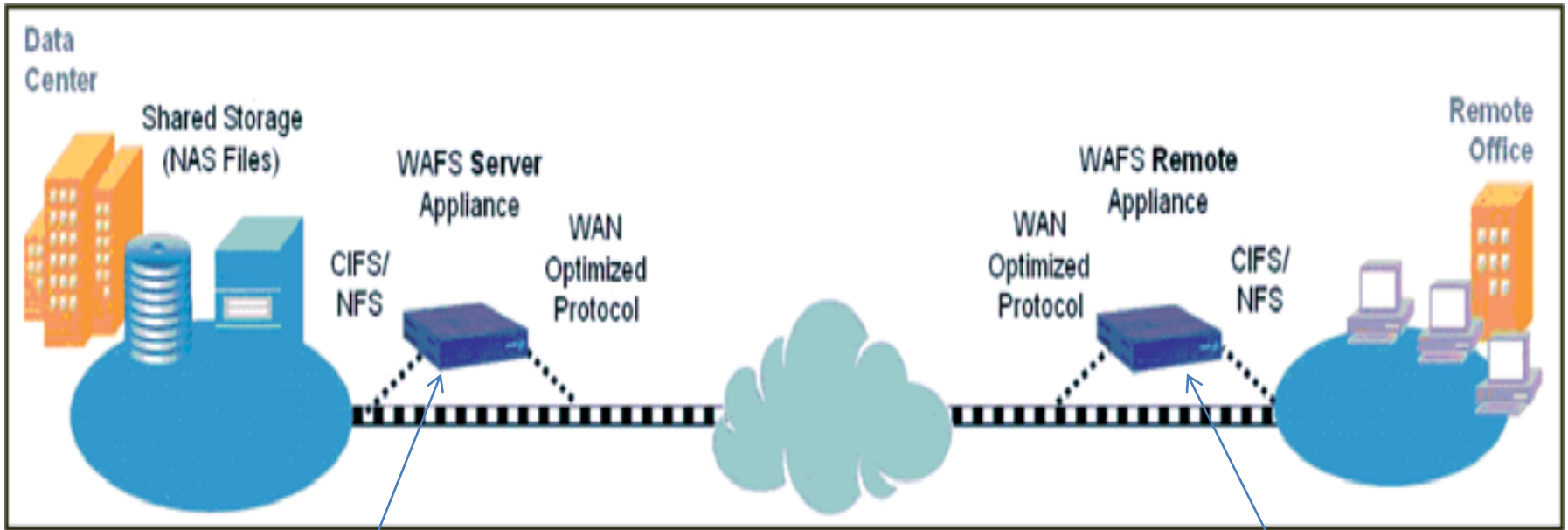
„WAFS products allow **remote office users** to **access and share files** globally at **LAN speeds over the WAN**. Distributed enterprises that deploy WAFS solutions are able to **consolidate storage** to corporate datacenters, **eliminating** the need to **back up** and manage data that previously resided in their remote offices. WAFS uses techniques such as CIFS and MAPI **protocol optimization**, **data compression**, and sometimes storing recurrent data **patterns in a local cache...**”[Wiki]

WAFS: Architecture



1. Edge File Engine
2. Core File Engine
3. WAFS Central Manager
4. WAFS File Replicater

WAFS: Architecture



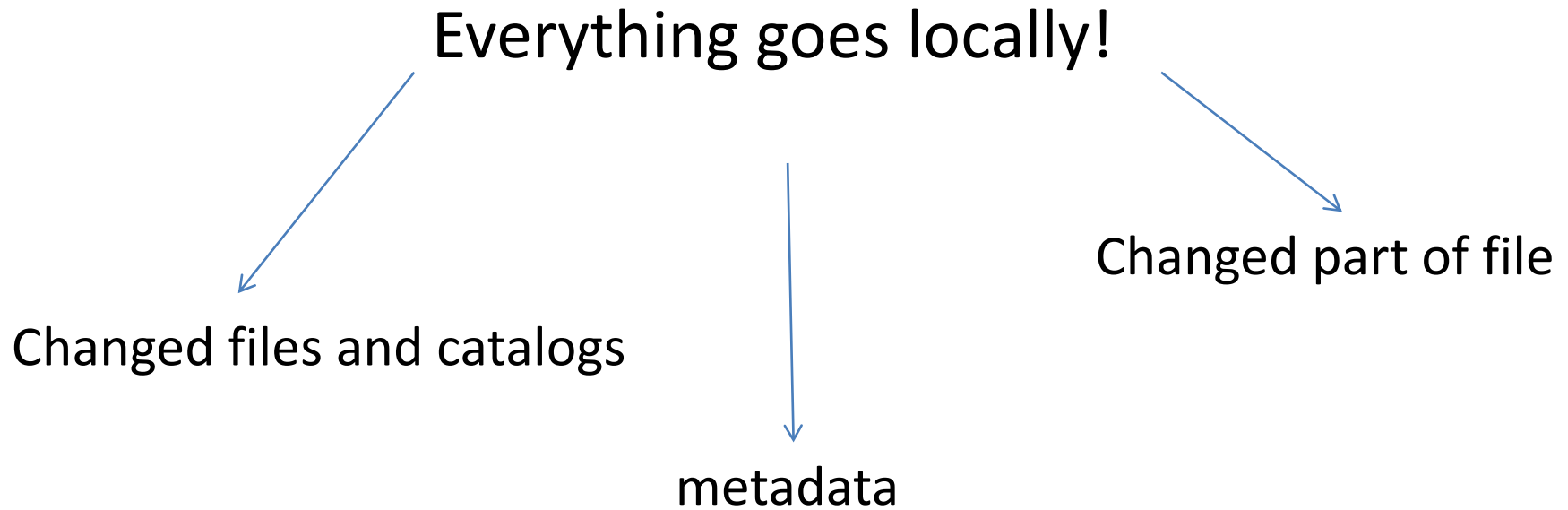
Central server (CS)
appliance also
Data Center Node

Edge file gateway
(EFG) appliance or
Branch Office Nodes

WAFS: Features

1. Caching at the Protocols Level
2. Protocol optimization
3. Optimization of communication channels bandwidth
4. Data integrity

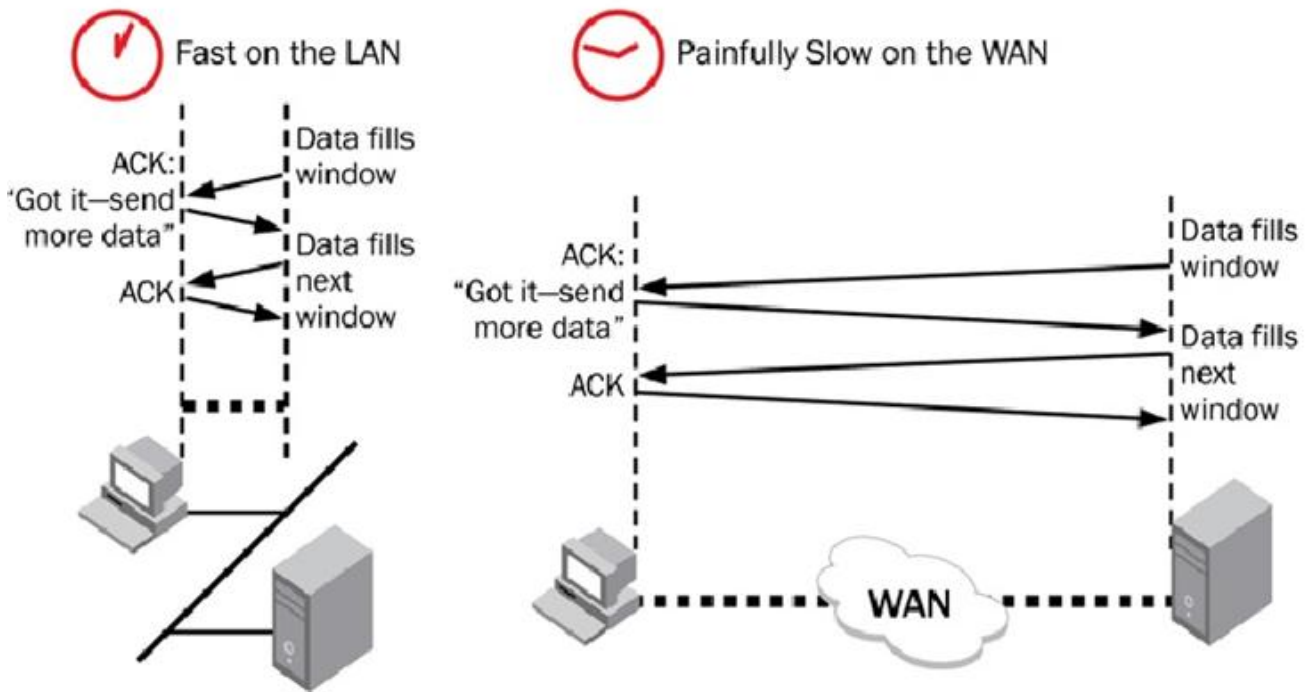
WAFS Features: Caching



WAFS: Protocol optimization and caching

1. Write-back caching
2. Read-ahead-technique and forecast-algorithm
3. Caching of negative answers
4. RPC optimization

WAFS: Protocol optimization



TCPs sliding window mechanism —> Against higher latency connections

Storage Caching over IP (SC/IP) protocol !

WAFS: Optimization of communication channels bandwidth

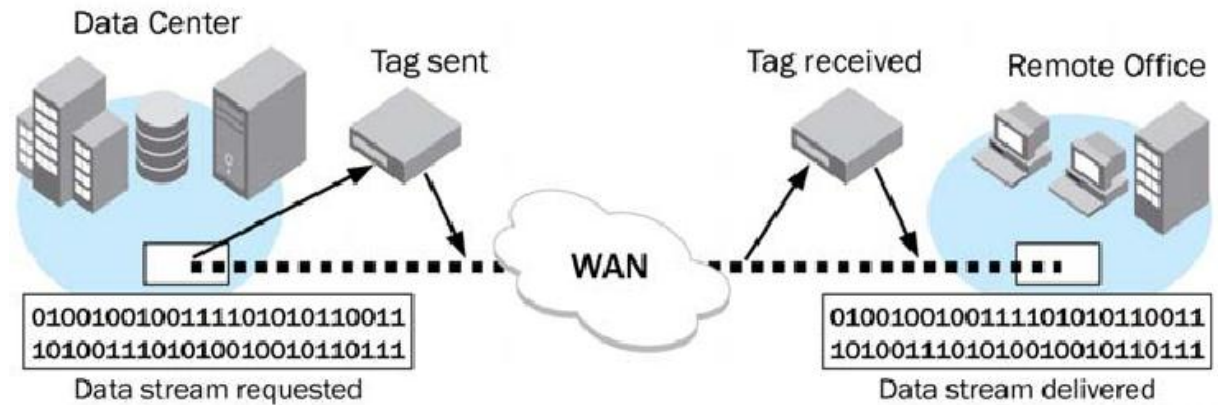
1. Packages compression
2. Different priorities for different requests
3. Restrictions (limitations) for use of band

WAFS: Data optimization

- Compression —————> Similar to LZ algorithm

↙

Dictionary based



- Reduction

Summary

- Compression techniques
- “Smart” caching
- Protocols optimization
- “prediction” – algorithms

Time to save a 6.7 MB CAD File2

Standard network share

192 seconds

WAFS

6 seconds

Thx for attention!

Links

<http://www.chin28.narod.ru/d10.1.htm>

<http://sobrs.ru/index.php/main/bios-bios/62.html>

<http://www.eweek.com/c/a/Data-Storage/WANs-Extend-SANs-File-Services/>

<http://download.channelpartner.de/files/backgrounder.pdf>

<http://habrahabr.ru/post/141827/>

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http://www.webopedia.com/TERM/W/wide_area_file_services.html

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<http://searchstorage.techtarget.com/definition/wide-area-file-services>

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<http://www.orient.kz/products/riverbed/products/55/1330>

http://www.storagenews.ru/29/Tapestry_FAN-7.pdf