Windows File Copy Speeds Part 1

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Introduction

- **Factors to consider in measuring file copy performance**

- **Some content courtesy of Microsoft**

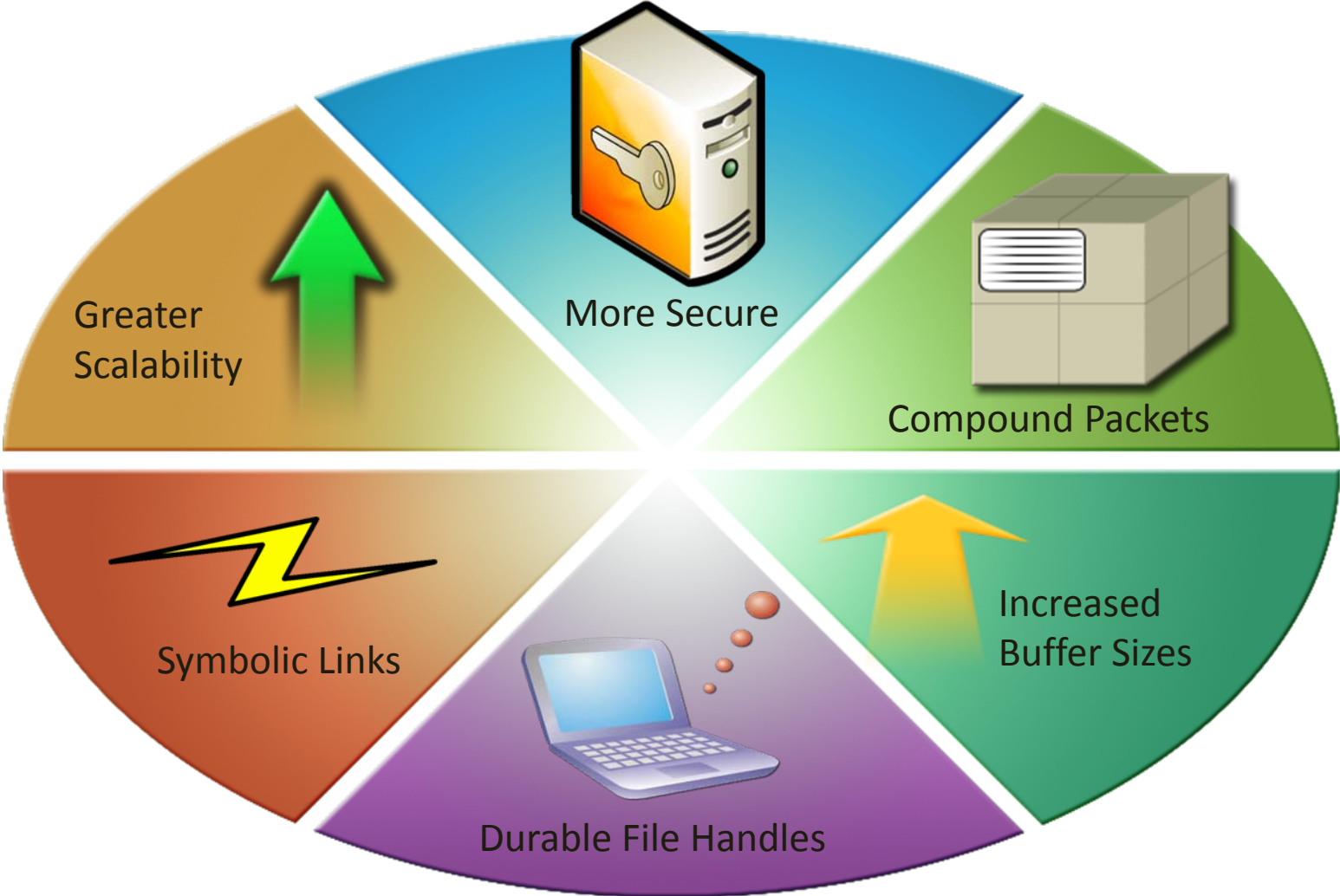- **Preliminary results – testing still underway**

Factors

- **Hardware factors in source and target**
  - Number of processors and cores
  - NIC cards and features
  - Disk storage access speeds
- **Network Factors**
  - Latency of network
  - Number of hops between switches
- **Software and file system factors**
  - Number of files
  - Size of files

Limitations With SMB 1.0

- **SMB1.0 Limitations**
  - Considered "chatty"
  - Restrictive limits on number of open files, number of shares etc.
  - No support for durable handles
  - No support for symbolic links
  - Cumbersome security signing algorithms
  - Security issues
- **Rationale**
  - High % of servers deployed are for Windows file services

Server Message Block (SMB) 2

Greater Scalability

More Secure

Compound Packets

Symbolic Links

Durable File Handles

Increased Buffer Sizes

Source: Microsoft

SMB 2 Streaming Improvement

SMB 2.0 changes specifically improve WAN performance

100ms RTT - WAN
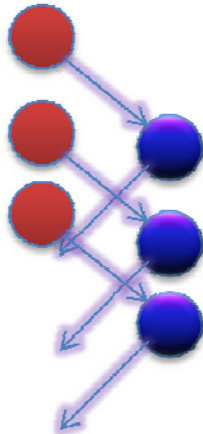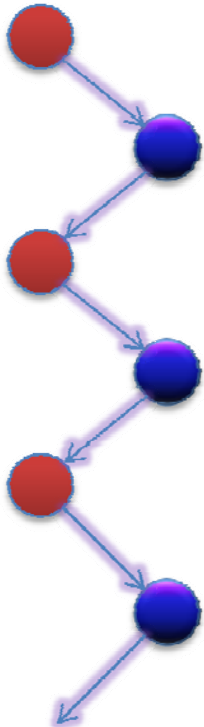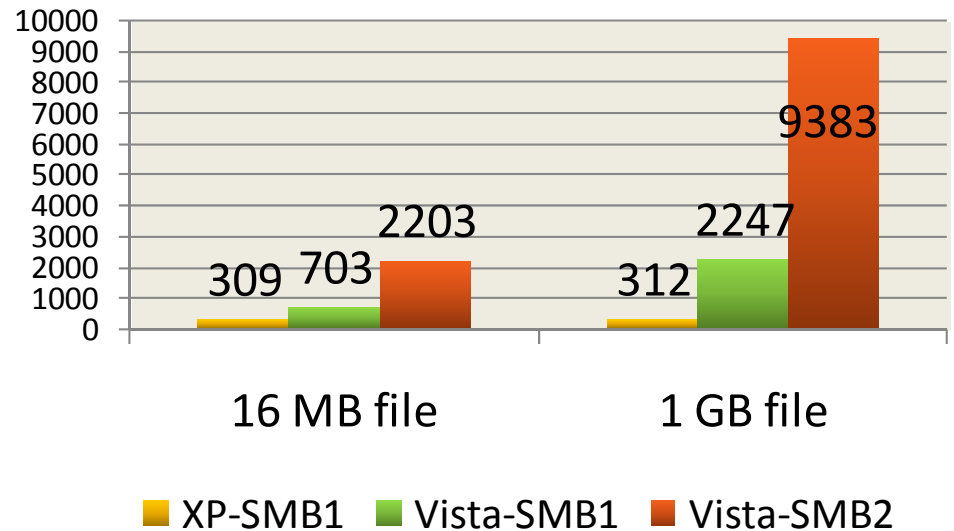

Source: Microsoft

Preliminary Results

- **Windows Vista Ultimate x64 SP1 as Source**
  - All Gigabit LAN (not a WAN in this test)
  - Source folder of mixed file types:
    - 57.8 GB (62,132,156,995 bytes)
    - 23,788 Files
    - 1,816 Folders
  - Time to Windows 2003 Server: 25 mins 15 secs
  - Time to Windows 2008 Server: 25 mins 30 secs
  - Targets were identical workstations
    - Pentium-D (1 processor, dual-core), 8GB RAM, SATA drives, x64 editions

Testing Continues

- Still testing various combinations of:
  - Operating Systems (XP, Vista, Server 2003/2008)
  - Different server hardware, etc.
- Stay tuned for Part 2 for more test cases…
- Any RMWTUG members with Internet connections interested in helping with tests? Please contact me.

Contact me

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