

Remote Vault Access:

WAN Versus LAN Performance

Companies that have remote workers or remote sites commonly need to access a centralized vault. This paper compares performance when accessing a remote vault in a Wide Area Network (WAN) versus Local Area Network (LAN) environment.

Each of these workflows was completed using Autodesk® Vault functionality integrated with Autodesk Inventor® software. The sample assembly was configured as follows:

- Five hundred unique files made of identical geometry. Each part was a unique instance on disk but was based on the same part. With the container assembly, the total file count was 501.
- Each of the 500 parts was 157 KB, totaling 76.6 MB.
- The top-level assembly was 1 MB.
- The folder structure and assembly structures were completely flat and contained within a single folder.
- For WAN and LAN tests, the vault's working folder was local on the client's drive.

Operation	LAN Performance	WAN Performance	Time Difference
Log in to Autodesk Vault	0:00:02	0:00:02	0:00:00
Open (prior to being added)	0:00:31	0:00:31	0:00:00
Add Files	0:02:25	0:08:30	0:06:05
Close Assembly	0:00:04	0:00:04	0:00:00
Open (after being added)	0:00:37	0:02:28	0:01:51
Check Out Assembly	0:00:00	0:00:01	0:00:01
Check Out Part	0:00:00	0:00:00	0:00:00
Modify Assembly	0:00:01	0:00:01	0:00:00
Modify Part (in context)	0:00:00	0:00:00	0:00:00
Save	0:00:04	0:00:04	0:00:00
Check In Part	0:00:00	0:00:01	0:00:01
Check In Assembly (all files)	0:00:03	0:00:05	0:00:02
Refresh Browser (Vault)	0:00:14	0:01:58	0:01:44
Log Out of Vault	0:00:00	0:00:00	0:00:00
Close Assembly	0:00:03	0:00:03	0:00:00

Hardware Configuration

Configuration	Client	Server (Local)	Server (Remote)
Hardware	HP XW6000	HP XW6000	HP XW6000
Software	Autodesk Vault 3 Autodesk Inventor 9	Autodesk Vault 3 Autodesk Inventor 9	Autodesk Vault 3 Autodesk Inventor 9
Operating System	Microsoft® Windows® XP Professional (SP1)	Windows XP Professional (SP1)	Windows XP Professional (SP1)
Processor	3.06 GHz P4 Xeon®	3.06 GHz P4 Xeon	3.06 GHz P4 Xeon
RAM	1 GB	2 GB	3 GB*
Hard Disk	35 GB SCSI 10k RPM	35 GB SCSI 10k RPM	35 GB SCSI 10k RPM
Network Connection	N/A	100 MB/sec. (est.)	1.5 MB/sec. (est.)

*Because of the size of the assembly and required hardware loads, RAM differences should have minimal effect on the test.

Network Configuration

The test was conducted between two facilities: one in Detroit, Michigan, and one in Portland, Oregon. Each site was connected via a secure WAN, and each was equipped with a T3 Internet connection. Trace routes were performed on both the LAN and WAN connections. The following times were recorded:

Date and Time of Tests

Date: 9/02/2004; WAN approximately 4 PM EST; LAN approximately 6 PM EST

LAN Performance

Tracing route to << LAN >> over a maximum of 30 hops:

```
1 <1 ms <1 ms <1 ms << LAN >>
```

WAN Performance

Tracing route to << WAN >> over a maximum of 30 hops:

```
1 1 ms <1 ms <1 ms << WAN >>
2 58 ms 57 ms 57 ms << WAN >>
3 58 ms 57 ms 58 ms << WAN >>
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Note: The measurements and results derived in this paper were based on testing over controlled networks. Results are approximate and are subject to error and change. Product information and specifications are subject to change without notice. Autodesk provides this information "as is," without warranty of any kind, either express or implied. While every effort has been made to make the tests as fair and objective as possible, your results may differ.



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