



# Future of Data Management Summit

cadmicro

 SOLIDWORKS

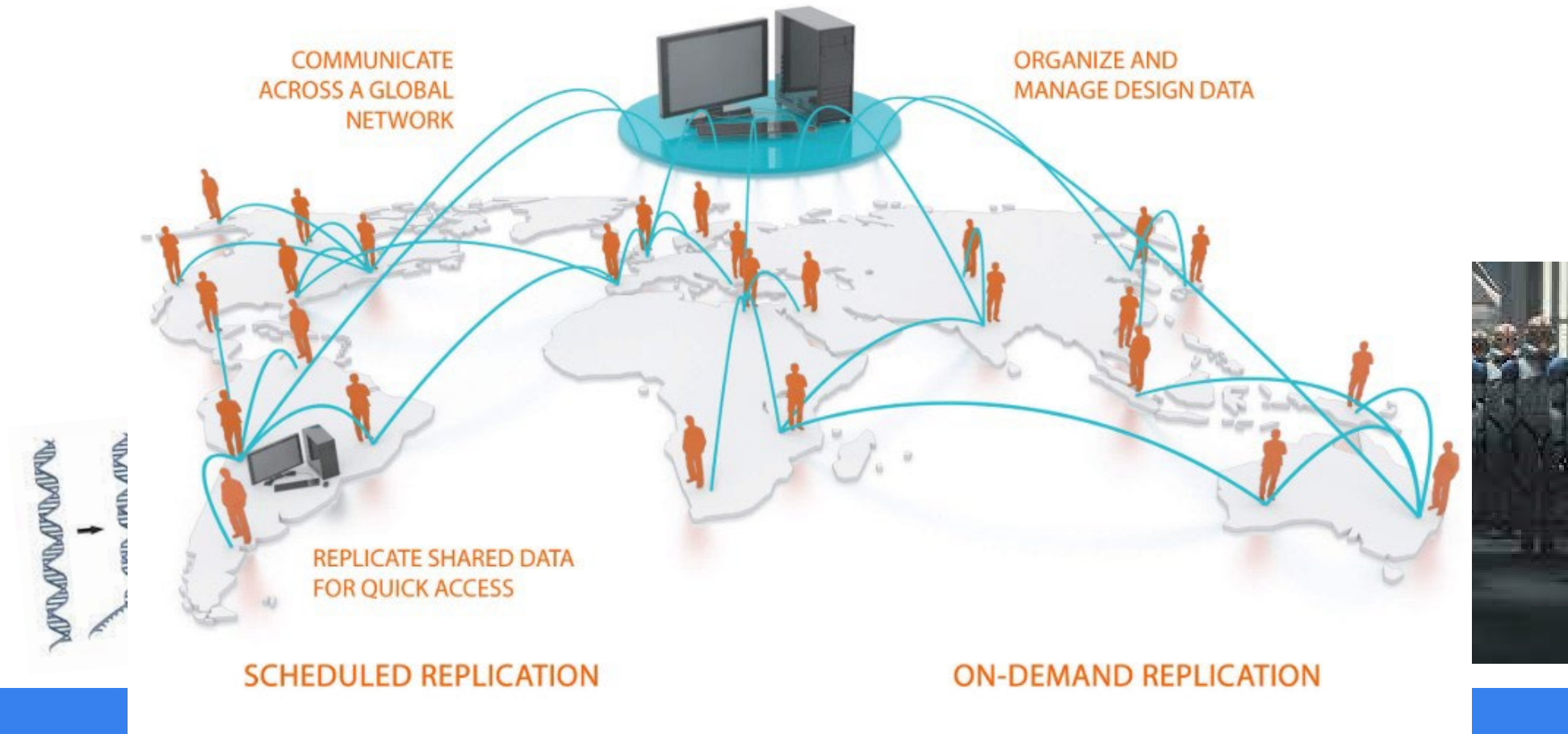


# Replication

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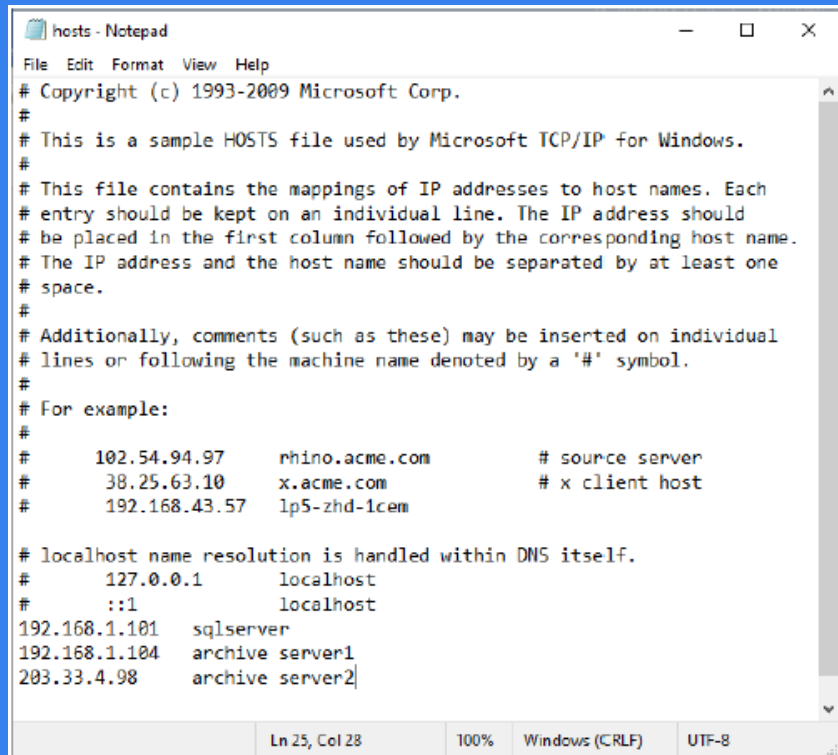
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# What is Replication?



# Requirements for Replication

- Network Connectivity



```
hosts - Notepad
File Edit Format View Help
# Copyright (c) 1993-2009 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#       102.54.94.97       rhino.acme.com       # source server
#       38.25.63.10      x.acme.com         # x client host
#
#       192.168.43.57    lp5-zhd-1cem
#
# localhost name resolution is handled within DNS itself.
#       127.0.0.1        localhost
#       ::1              localhost
192.168.1.101    sqlserver
192.168.1.104    archive server1
203.33.4.98     archive server2
```

- VPN required
- System name resolution is required
- Recommend modifying hosts file with names of all servers
- C:\Windows\System32\drivers\etc\hosts

# Requirements for Replication

- Network Connectivity
- Firewall Considerations
- Make sure ports are open
  - 1433 or 1434 on SQL server
  - 3030 on Archive server

# Requirements for Replication

- Network Connectivity
- Firewall Considerations
- Network Bandwidth and Latency
- PDM requires >1Mbit/s bandwidth and <150 ms latency
- Free tools like iperf or bwping
- `ping -4 -n 10 [server name]`

# SolidWorks PDM Connectivity Test Tool

KB Solution S-069274

The screenshot shows the 'SOLIDWORKS PDM Connectivity Test Tool' window. The title bar indicates the version is 2.0.4 .NET 4.0 (MDAC edition). The interface is divided into several sections:

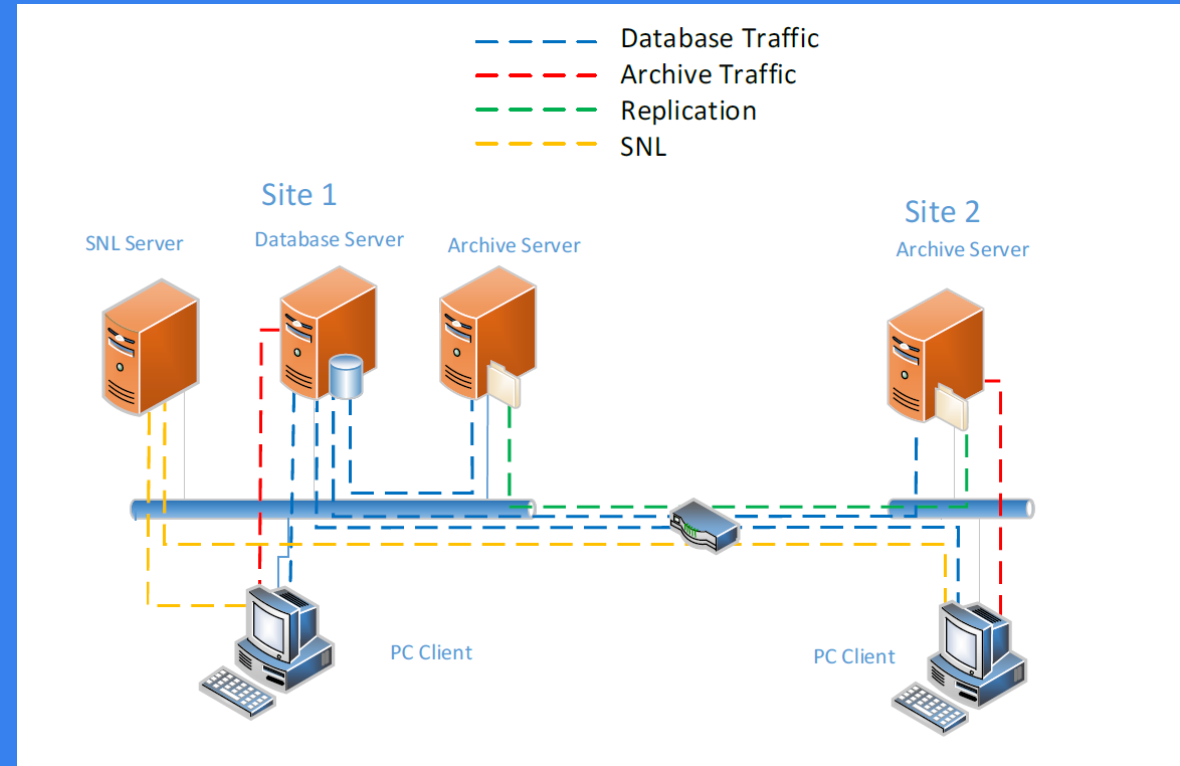
- Current system information:** Fields for Machine Name, IP address, and Logged User. A 'Set Default/Clear' button is present.
- Archive Server:** Checked. Hostname(s) is 'solidworks'. PING test is successful (green checkmark). TELNET test is successful (green checkmark) with Port: 3030.
- SQL Server:** Checked. 'same as Archive Server' is checked. Hostname(s) is 'solidworks'. PING test is successful (green checkmark). TELNET test is failed (red X) with Port: 1433.
- ODBC test:** Not checked. Includes a 'Default instance' checkbox, an 'ODBC test for:' field with the value 'solidworks\SOLIDWORKS\S', and fields for 'SQL user' (sa) and 'SQL password'.
- SNL Server:** Checked. 'same as Archive Server' is checked. Hostname is 'solidworks'. PING test is successful (green checkmark). TELNET test is successful (green checkmark) with Port: 25734. Daemon Port is 25735 (green checkmark). 'Dynamic' is not checked.

At the bottom, there are buttons for 'Exit', 'View log', and 'Re-run Test(s)'. A footer note reads: 'DONE, please send the generated log file to TS of SWPDM.'

# Replication Architecture

## Archive Replication

- Single database
- Multiple archive servers
- Suggested for 5 or more remote users

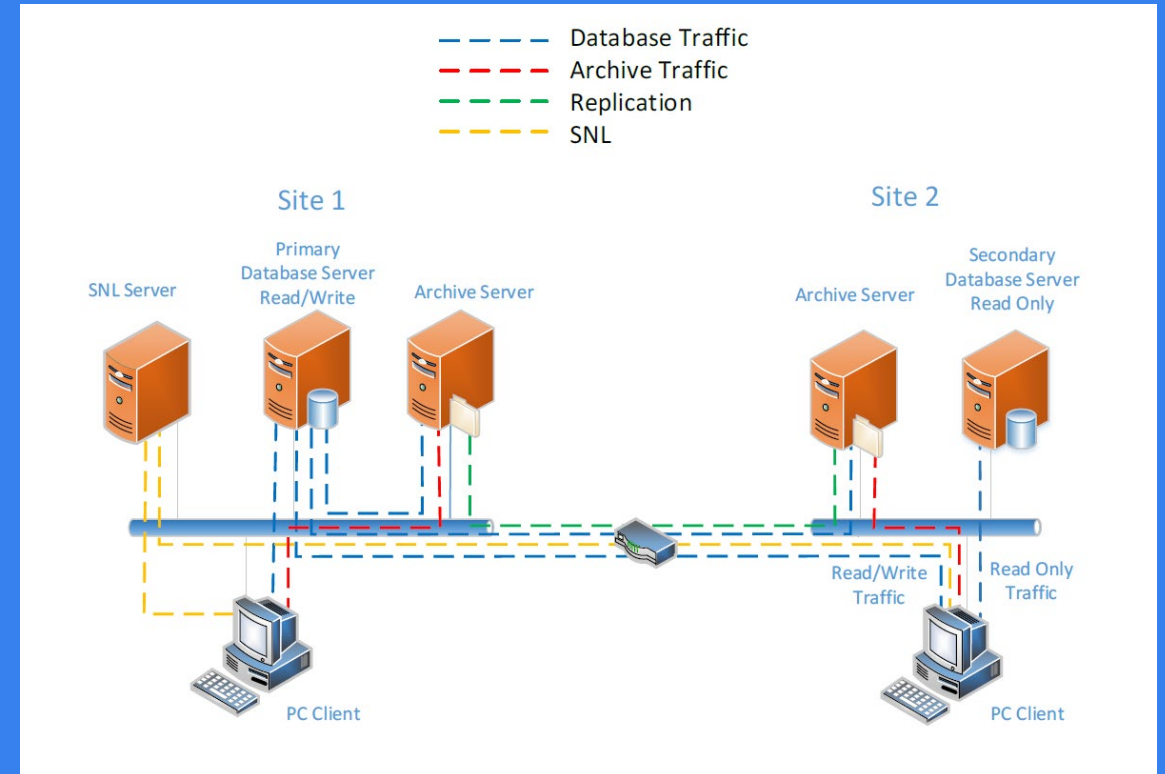




# Replication Architecture

## Database Replication

- Multiple Databases
- Multiple Archive Servers
- Suggested for remote sites with more than 20 users
- Uses Microsoft Always on availability groups (AOAG)

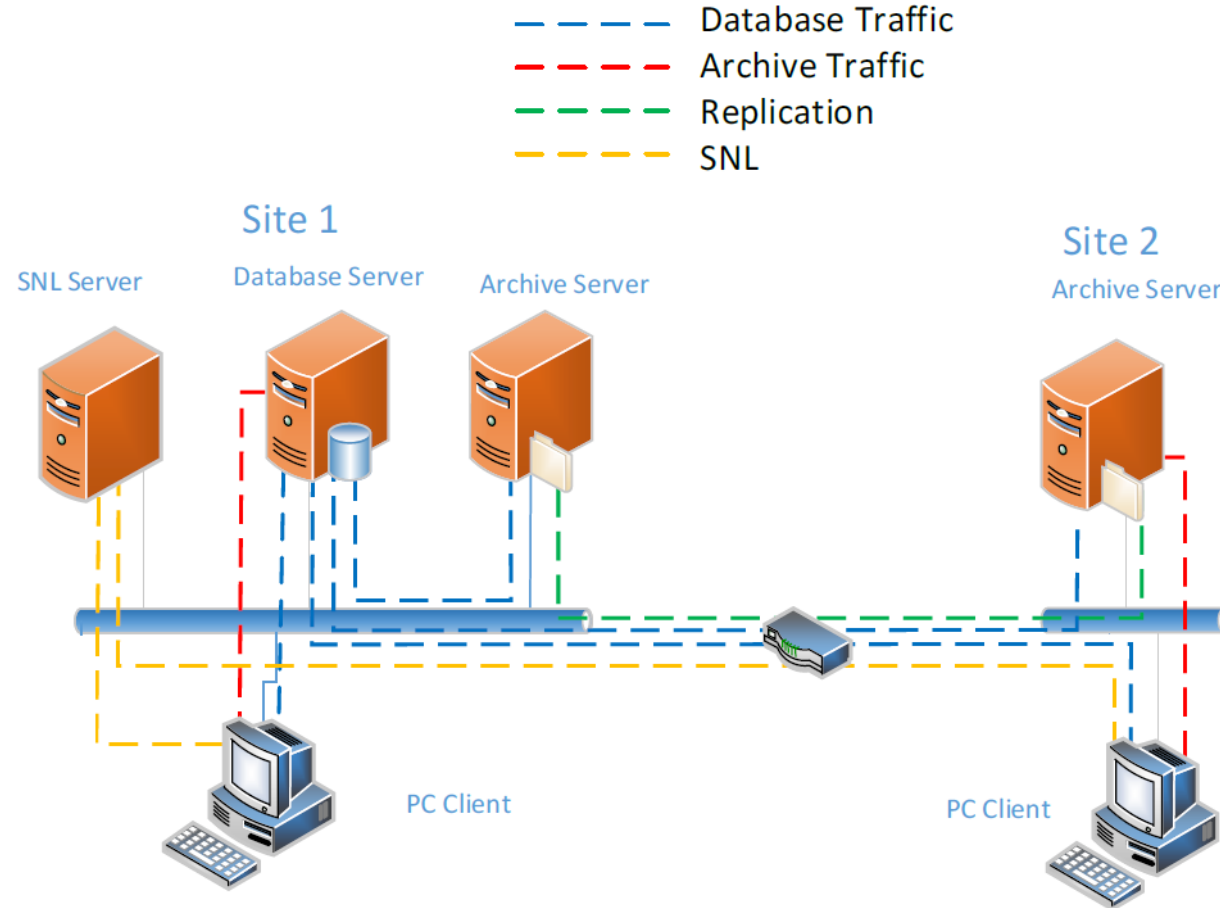


# Types of Replication

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- On Demand Replication
  - Occurs on file access attempt
- Scheduled Replication
  - Occurs at scheduled time regardless of file access needs

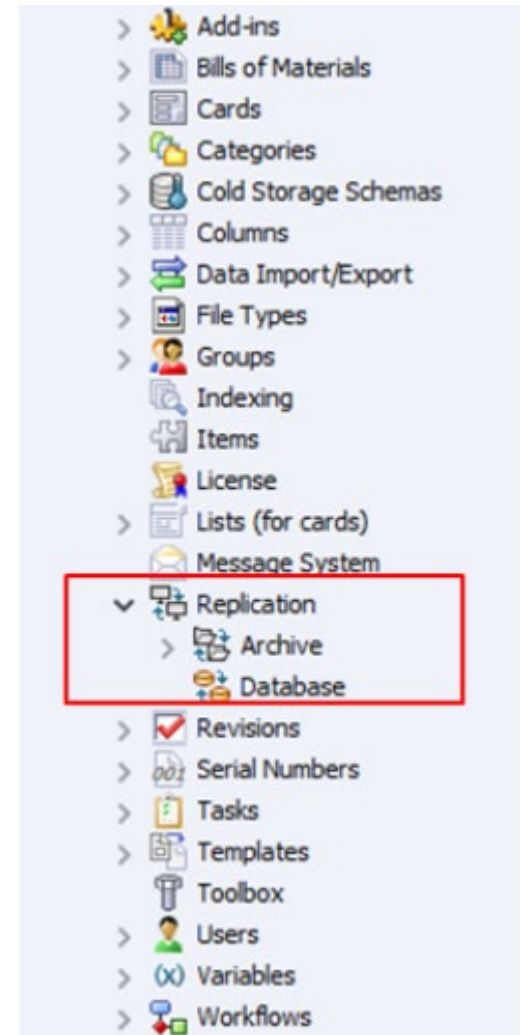
# On Demand Replication



# Replication Schemas

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- Create Schemas to connect replicated servers
- Define folders within the vault to replicate
- Set replication in both directions between replicated servers
- Determine interval on which replication occurs



# Scheduled Replication

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- Three sections to the string separated by a space
- Minute – 0 through 59 (0 is on the hour)
- Hour – 0 through 23 (0 is midnight)
- Weekday – 1 through 7 (1 is Monday)

<b>0 0 *</b>	Run every day at midnight
<b>0 0 1-5</b>	Run every Monday through Friday at midnight
<b>0 * *</b>	Run every hour on the hour, every day
<b>0 */2 *</b>	Run every other hour, every day
<b>0,15,30,45 * *</b>	Run every 15 minutes, every day
<b>0,30 * 1-5</b>	Run every half hour, Monday through Friday
<b>0 6-18 1-5</b>	Run every full hour between 6:00 a.m. and 6:00 p.m., Monday through Friday

# Advanced Replication Schema Options

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- Replicate only the latest version
- Replicate only files with revisions
- Include children when replicating
- Only replicate files in the following states
- Stop replication after

# Testing Replication

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- Tests the connection between servers defined in a schema
- Creating a test file also recommended



Local version: 2  
Latest version: 2  
Local revision: A  
Local state: Approved  
Category: -  
Workflow: Default Workflow  
Branches:  
Replicated to: All Servers


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# Replication Status

Archive server:

The file vault is replicated:

Files fully replicated to this server... 99%



Vault files on server:

Existing files	Deleted files	System files
113532	231	17

Unreplicated files on server:

1043 (0.9%)	30 (13.0%)	0 (0%)
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Navigation menu:

- Replication
  - Archive
    - Archive Status**
    - Database

Buttons:



# Questions?

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