Sixnet

Technical Training

Datalogging in an IPm Controller

MAY 2010

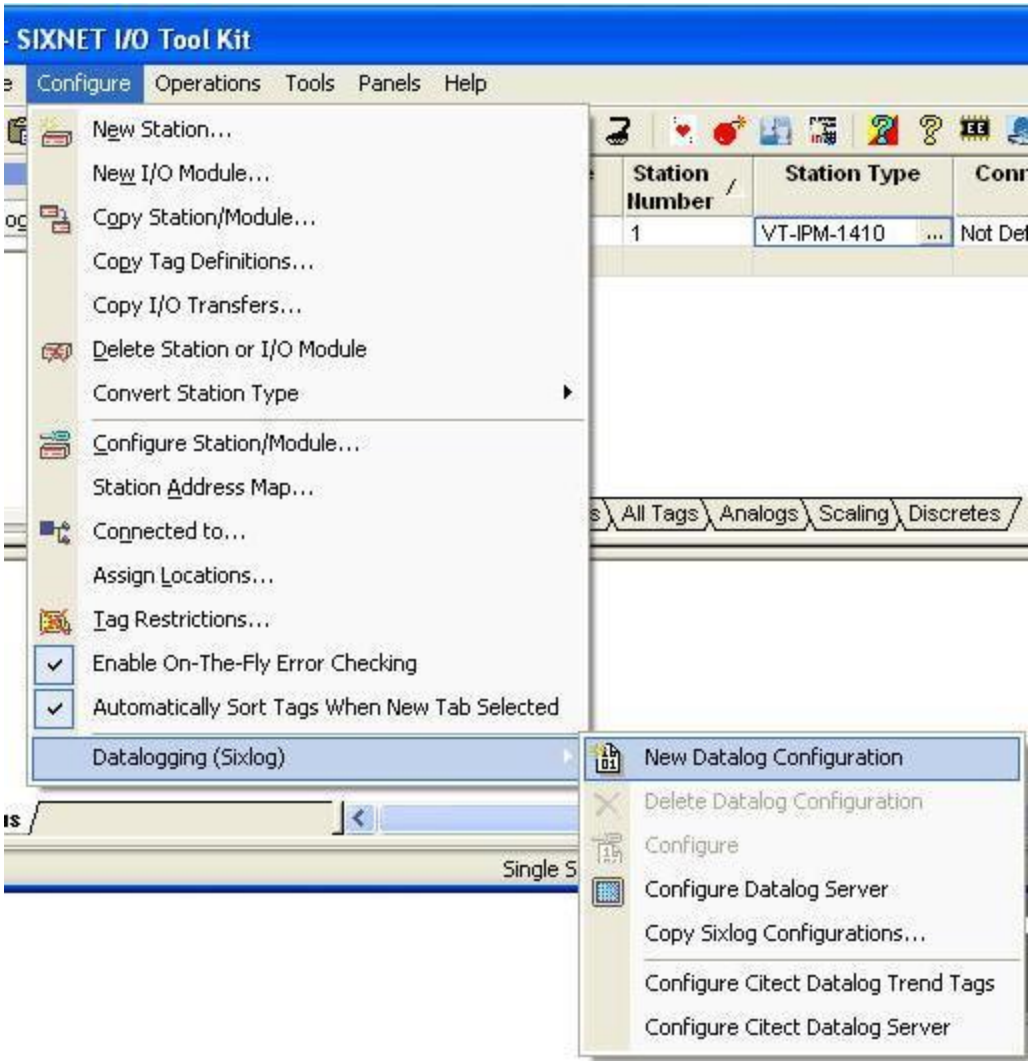
FLEXIBLE. RELIABLE. POWERFUL.

Datalogging Requirements

- **SIXNET IO Tool Kit Installed (includes datalog server)**
- **Datalogging Licensing**
- **Any IPm Controller**

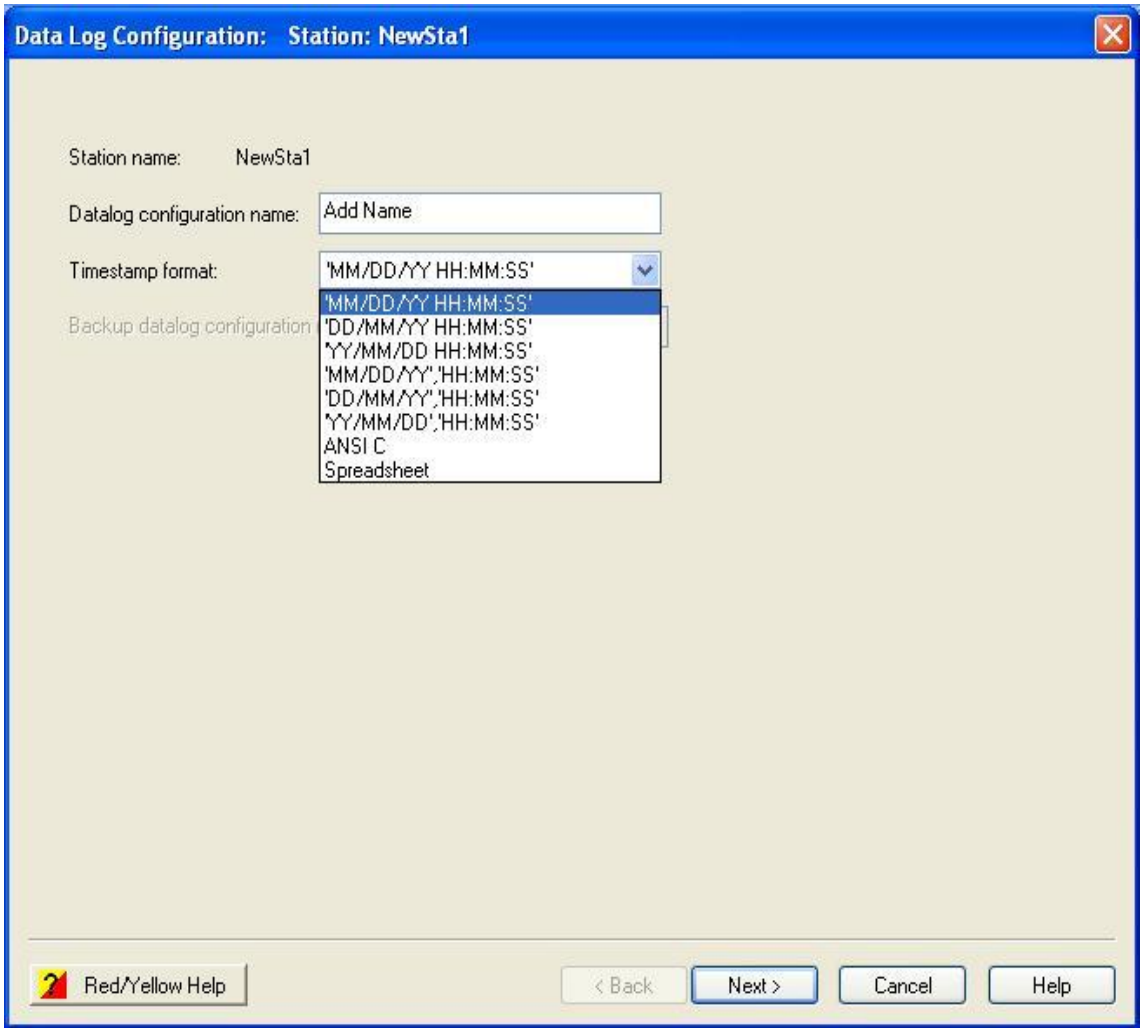
Getting Started

- **Create New Tool Kit project**
- **Add IPM to project**
- **Assign tags to Onboard IO, or add tag to virtual IO modules**
- **Add a new Datalog configuration to station**



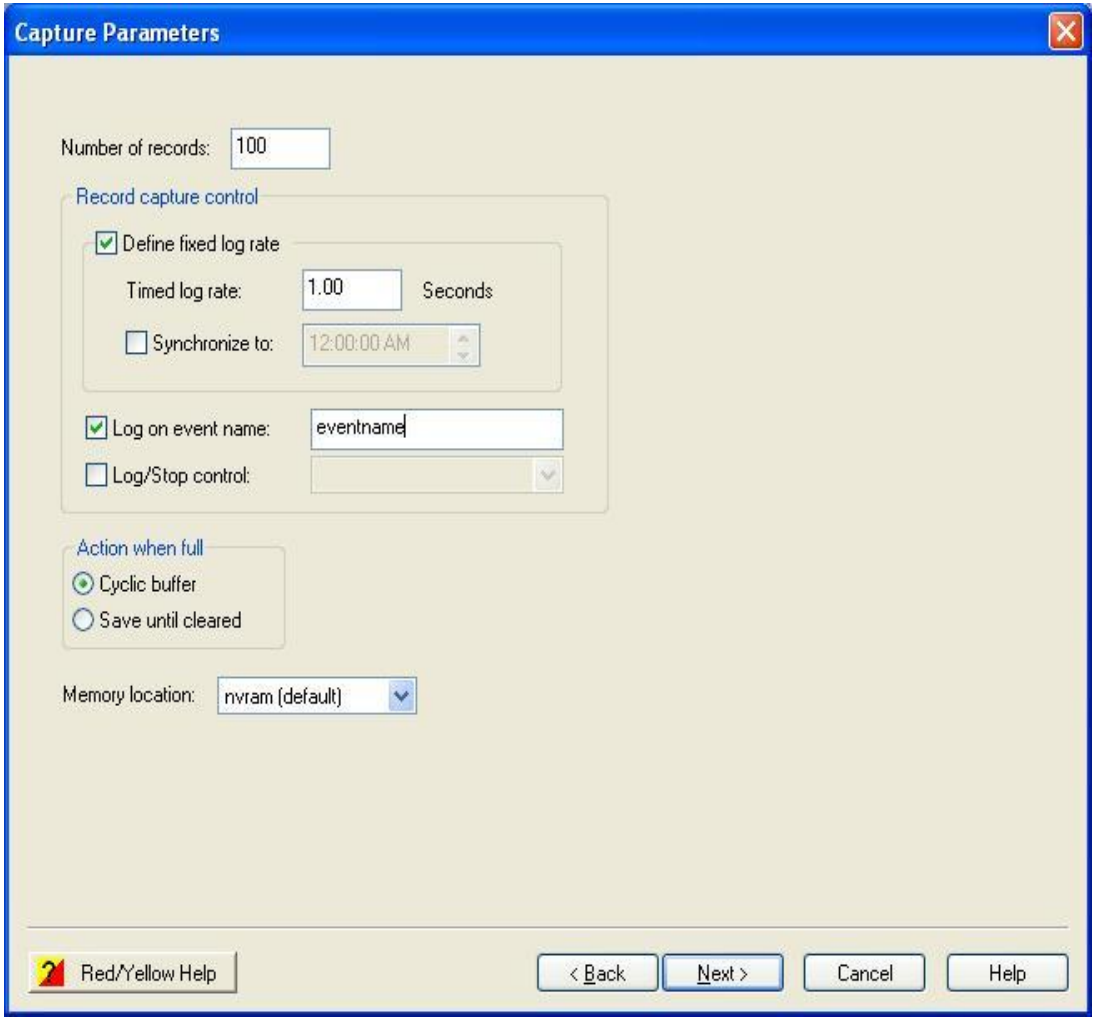
New Datalog Configuration

- **Add Name**
- **Select timestamp format**
- **Next**



Capture Parameters

- **Number of records**
  - How much can I log?
- **Choose log rate**
- **Log on event**
  - Controlled by ISaGRAF or alarm
- **Log stop control**
  - Enable or disable logging via Discrete register
- **Action when full**
- **Memory locations**
  - Battery backed or flash



How Much Can You Log

STEP 1.

- Observe the total number of bytes per datalog record
- The Record Content window includes a display of the total number of bytes each record

STEP 2.

- Calculate the number of datalog records stored per day
- Example: 1440 minutes per day ÷ 10 minute (logging rate) = 144 datalog records per day

STEP 3.

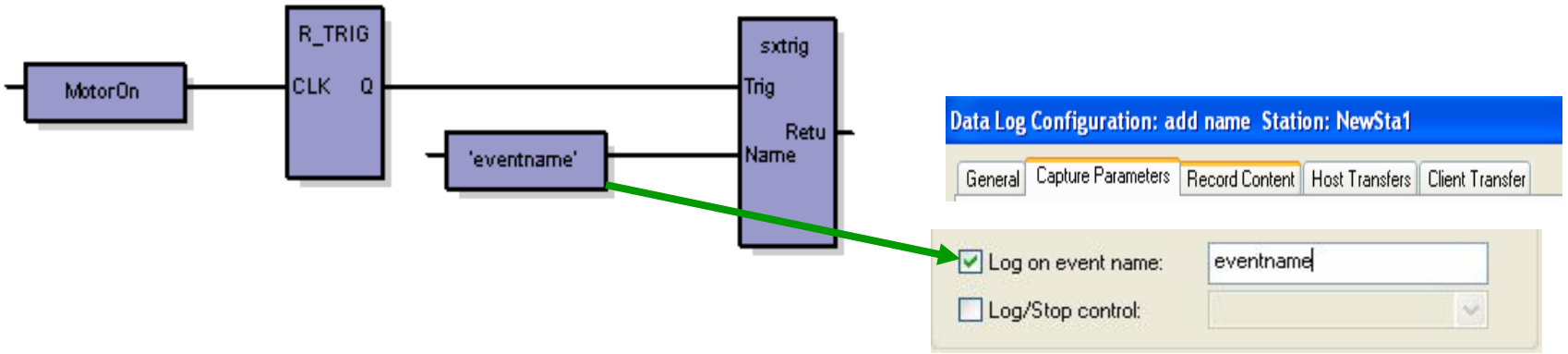
- Calculate the total number of bytes per day
- Example: 144 records x 54 bytes per record x 1.10 (10%) = 8554 total bytes per day

STEP 4.

- Calculate how many days you can log data before reaching a given file size
- Example: 400,000 bytes ÷ 8554 bytes per day @ 46.75 days

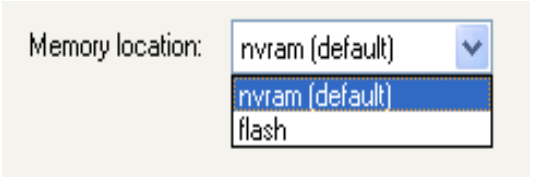
Logging on Event

- One log file per event
- Program the event using the sxtrig function in ISaGRAF
- Assign the sxtrig “Name”
- Use the sxtrig “Name” as the Event Name in the Dlog configuration



Memory Location

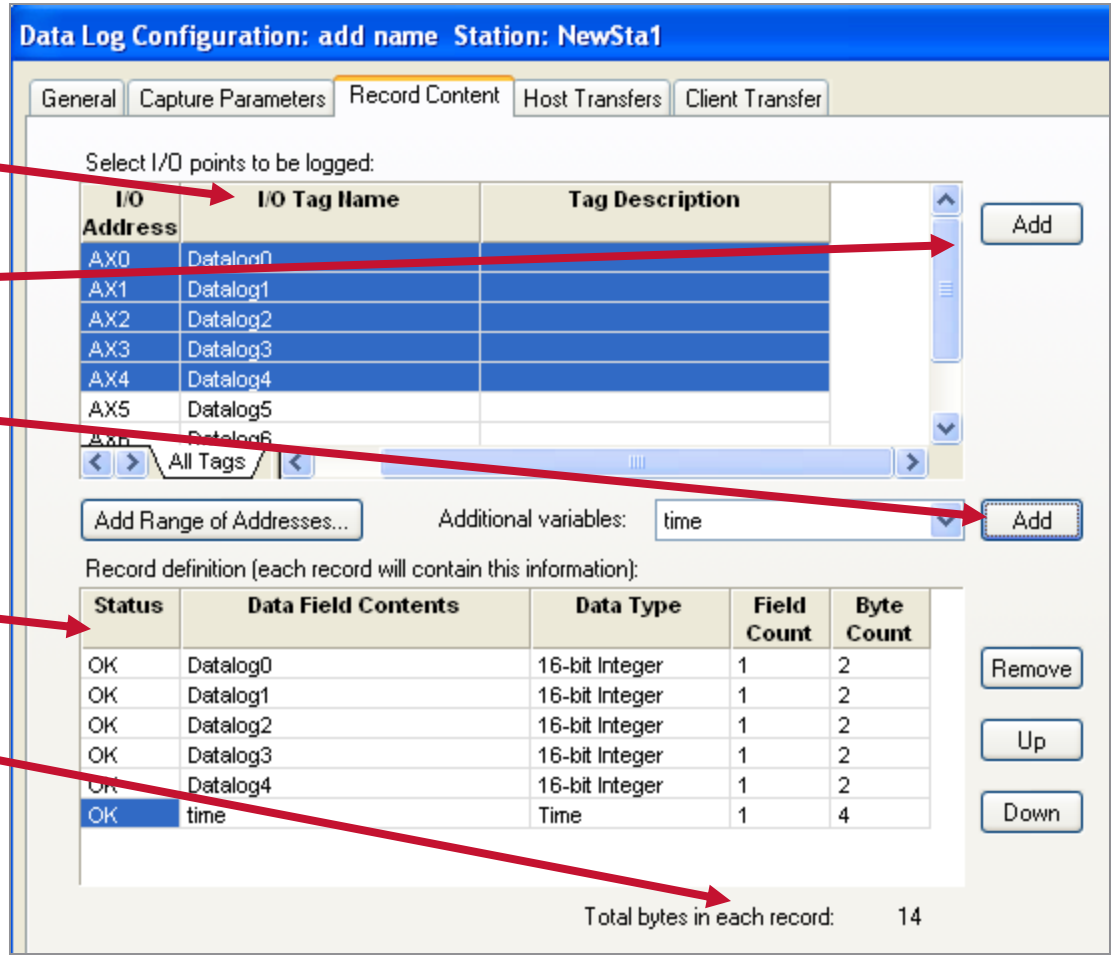
- **NVRAM: records stored in battery backed memory**
  - 10 mS log rate max, 30mS for most system
  - Up to 2 meg memory available (see product spec)
- **Flash: records stored in flash memory**
  - 1 S max log rate
  - Up to 118+ meg available (see product spec)
  - Note: Memory varies between controllers
  - Options: 2meg >6 meg > 20 meg > 54 meg > 118 meg



Record Content

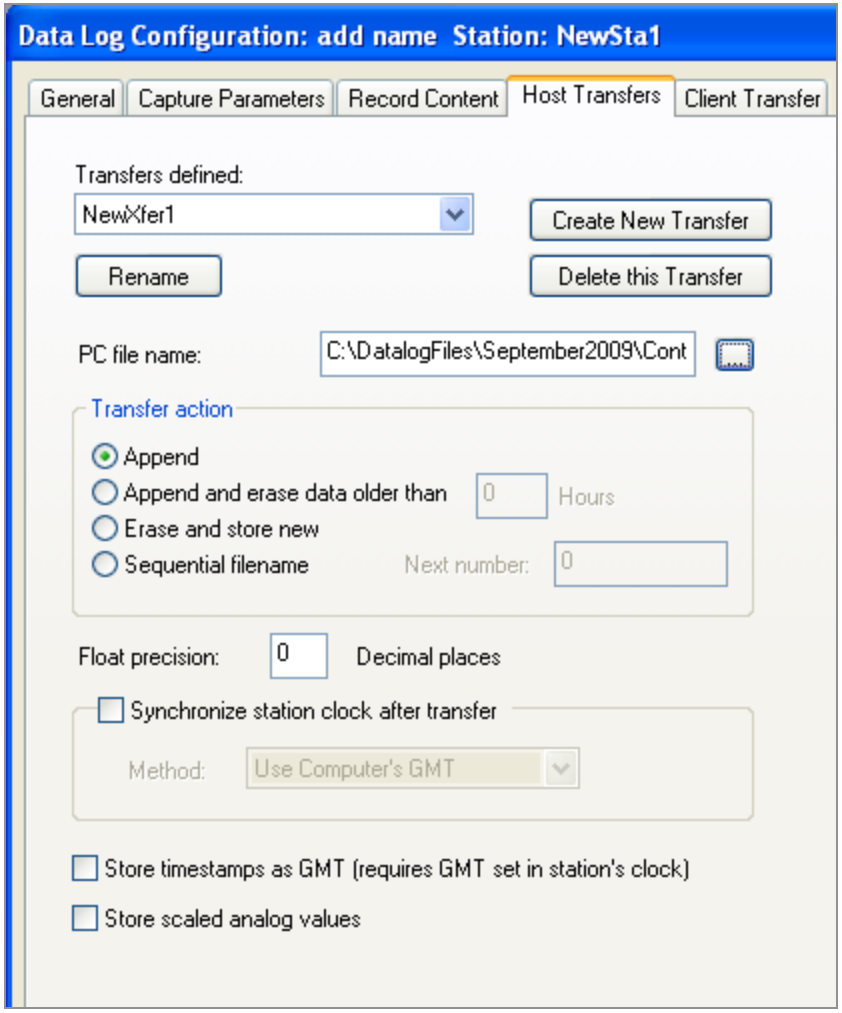
- **Pre-assigned tags readily available**
- **Highlight tags & Add**
- **Add Timestamp**
- **Content setup is complete**
- **Total Bytes in record**

  (use this value to calculate storage abilities)



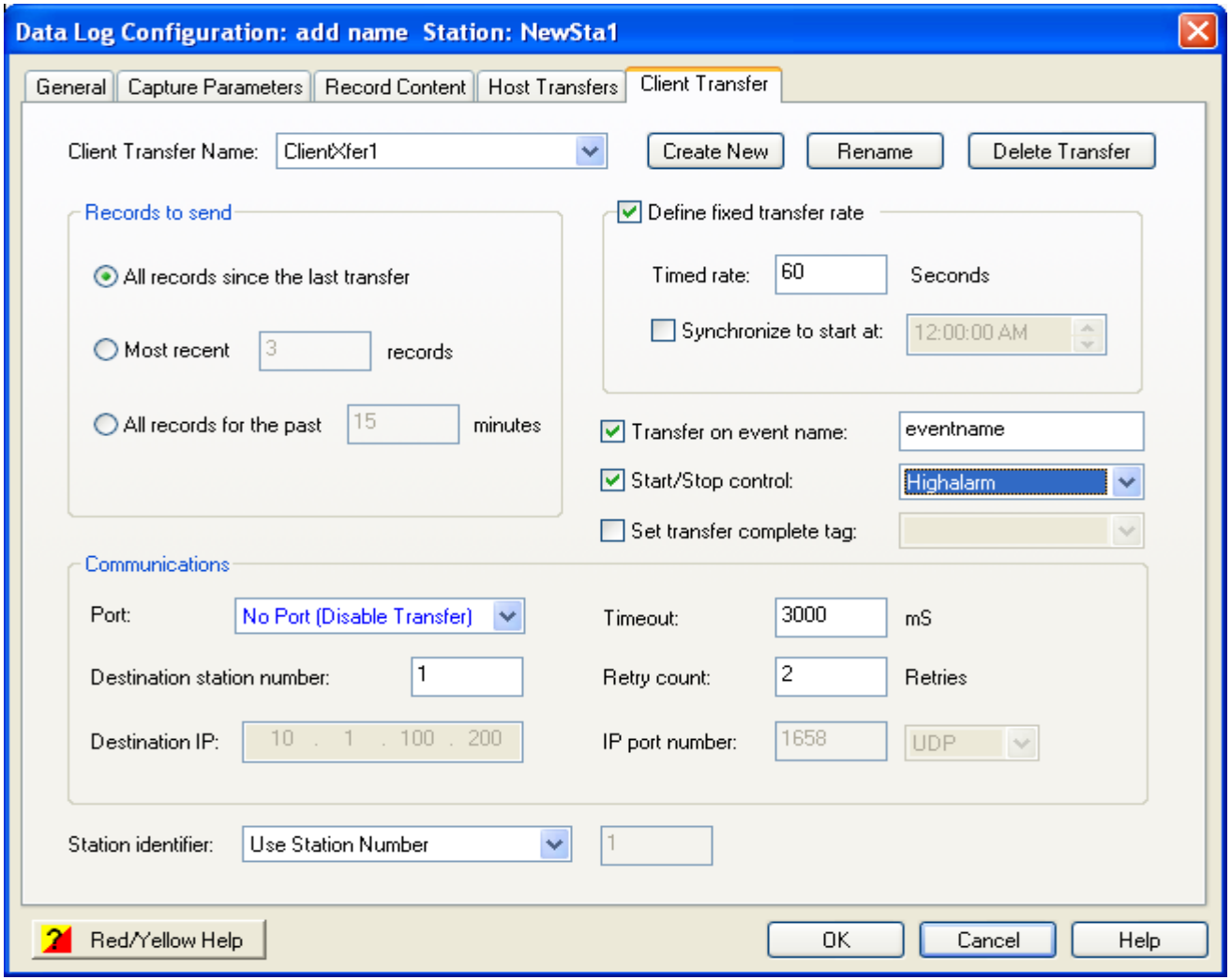
Host Transfer

- **Host site will request records from station**
- **Use the Tool Kit to read records**
- **Launch sxlogview.exe**
  - User programs C, Visual Basic etc.
  - The "Run" command in Windows and other applications
  - Batch file
  - Other applications capable of running Windows commands



Client Transfer

- **RTU initiates record transfer to the server**



Client Transfers

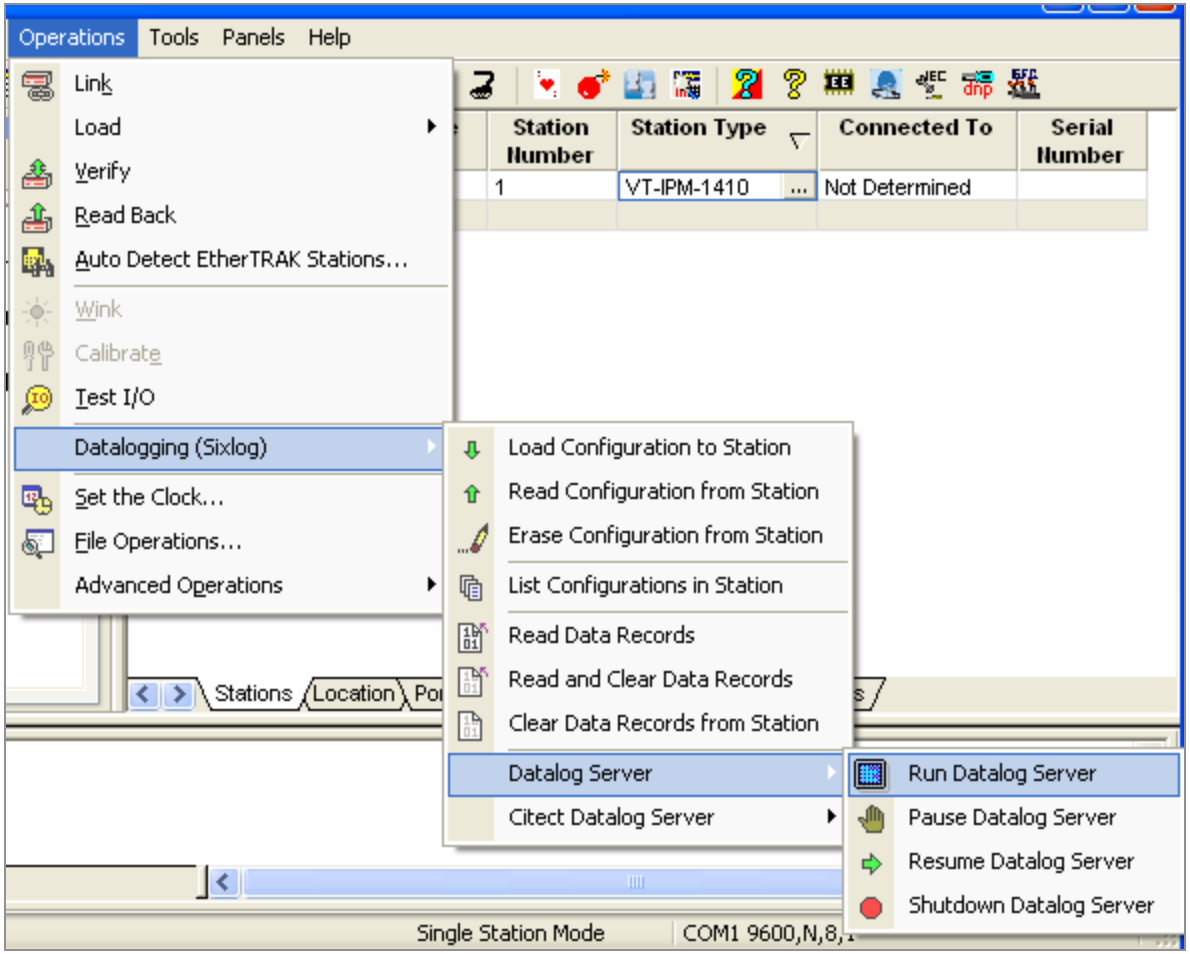
- SIXNET serial and Ethernet client transfers supported
- Ethernet SIXNET TCP and UDP
- Ethernet FTP and FTPS protocol
- Scheduled transfers, Event based or Start / Stop controlled

Note: Combinations of above also supported - flexible

- Client transfer redundancy supported
- Datalog server must be running on PC

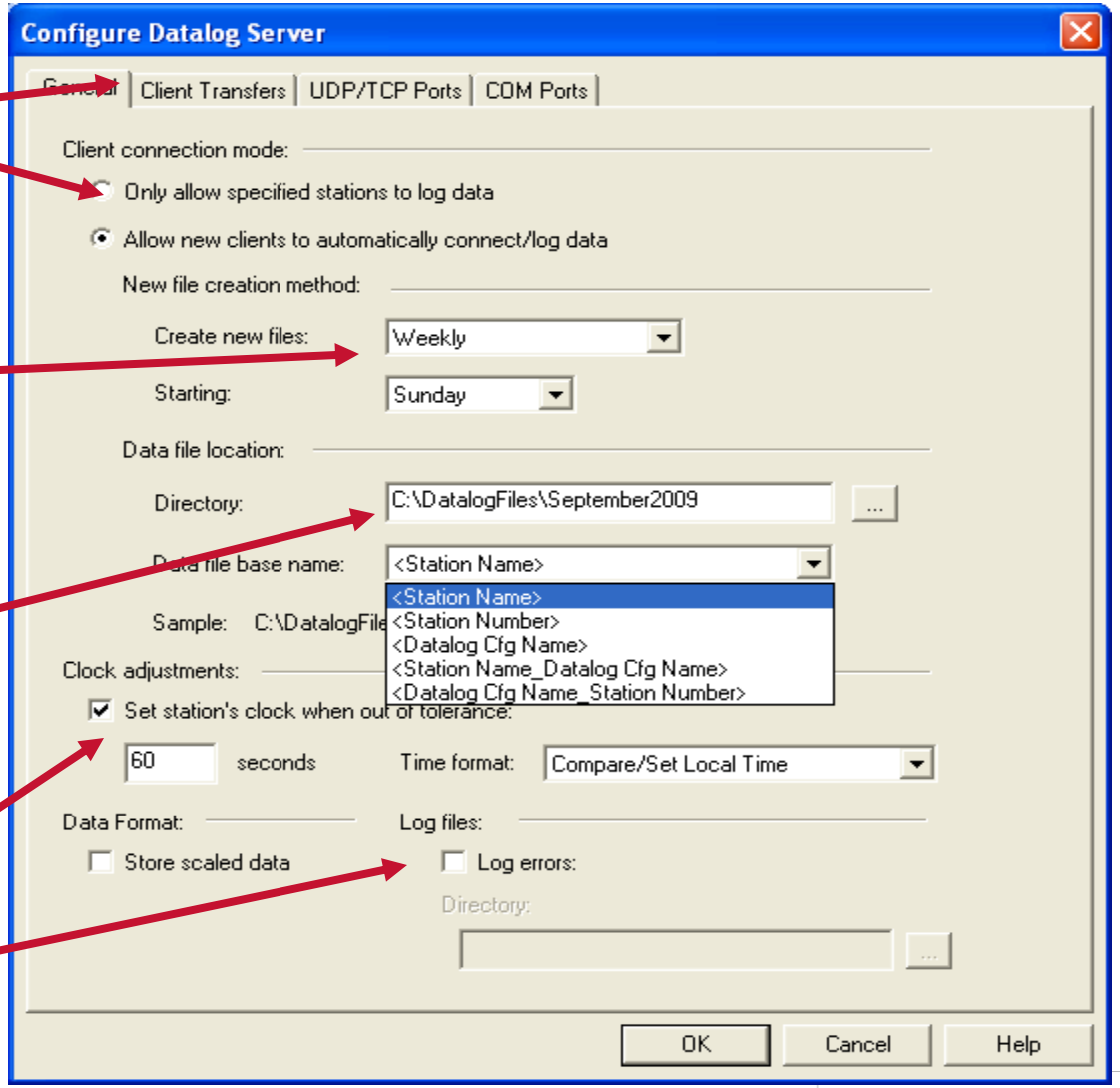
What does the datalog server do?

- Receives log files from RTUs
- Stores a CSV file
- Organizes data log records
- Diagnostic Tool
- Shows statistic (history)



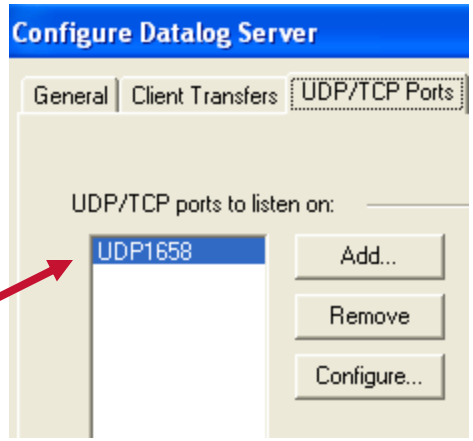
Datalog Sever Setup

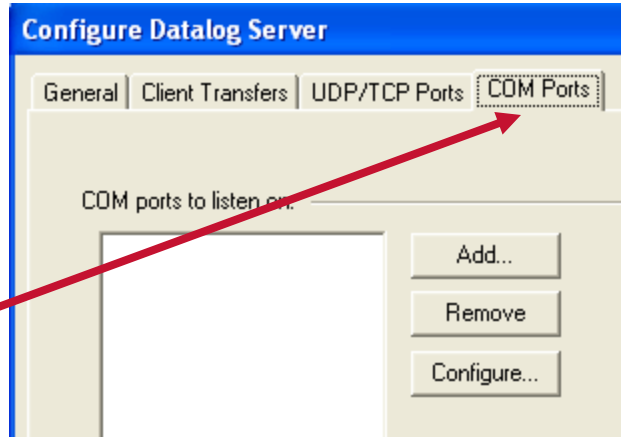
- **Option to allow specified stations only**
- **New file creation method**
  - Configurable
- **Data file base name**
  - Configurable
- **Clock synchronization**
- **Log errors**



Datalog Server Communications

- **Using Ethernet match the IP port number with the IP port number defined in the IPm datalogging configuration**
- **Default port # is UDP1685**
- **IP ports Register to Sixnet**
  - Port 1594
  - Port 1658
- **COM Ports must match the datalog project file as well**

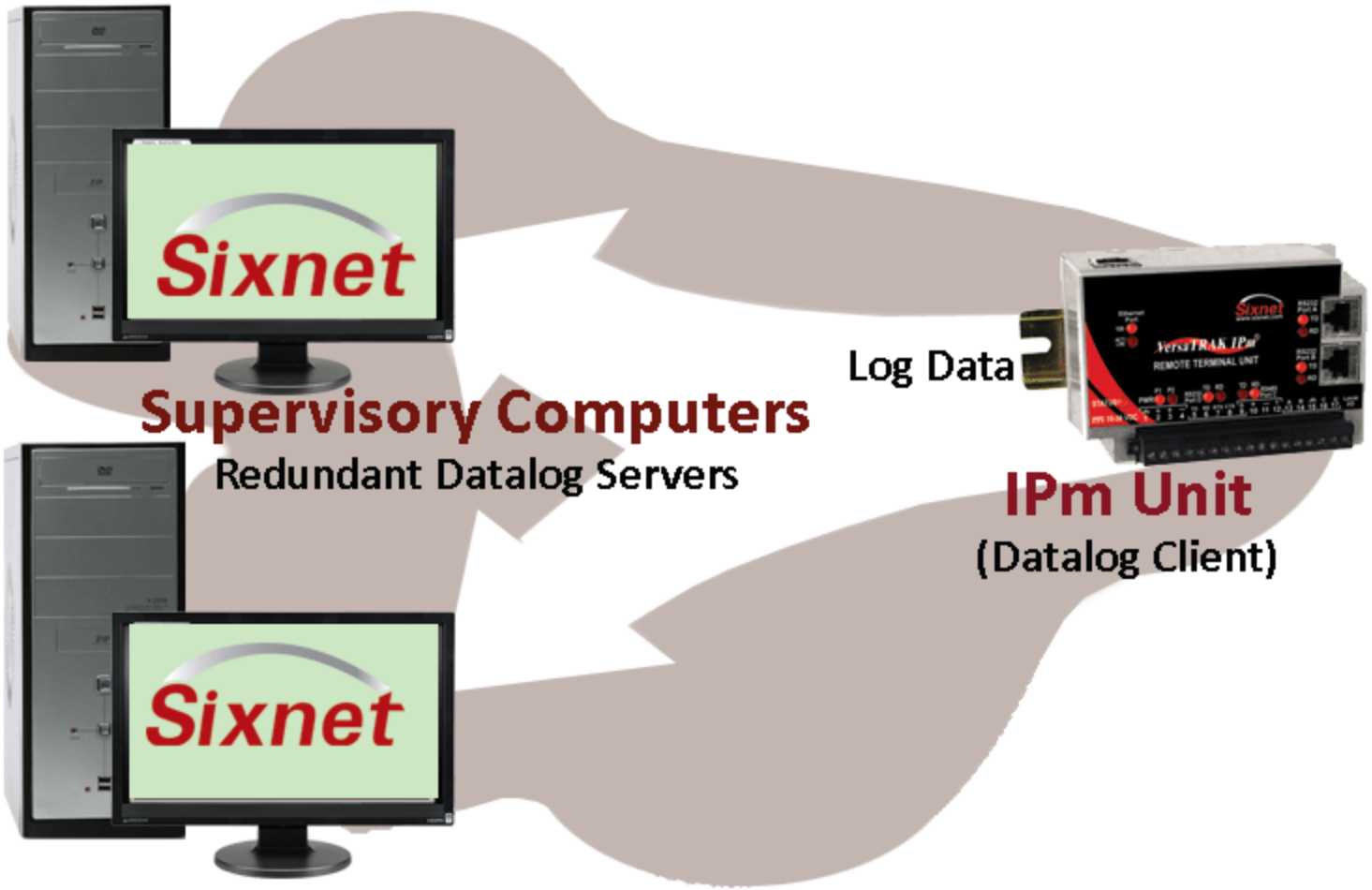




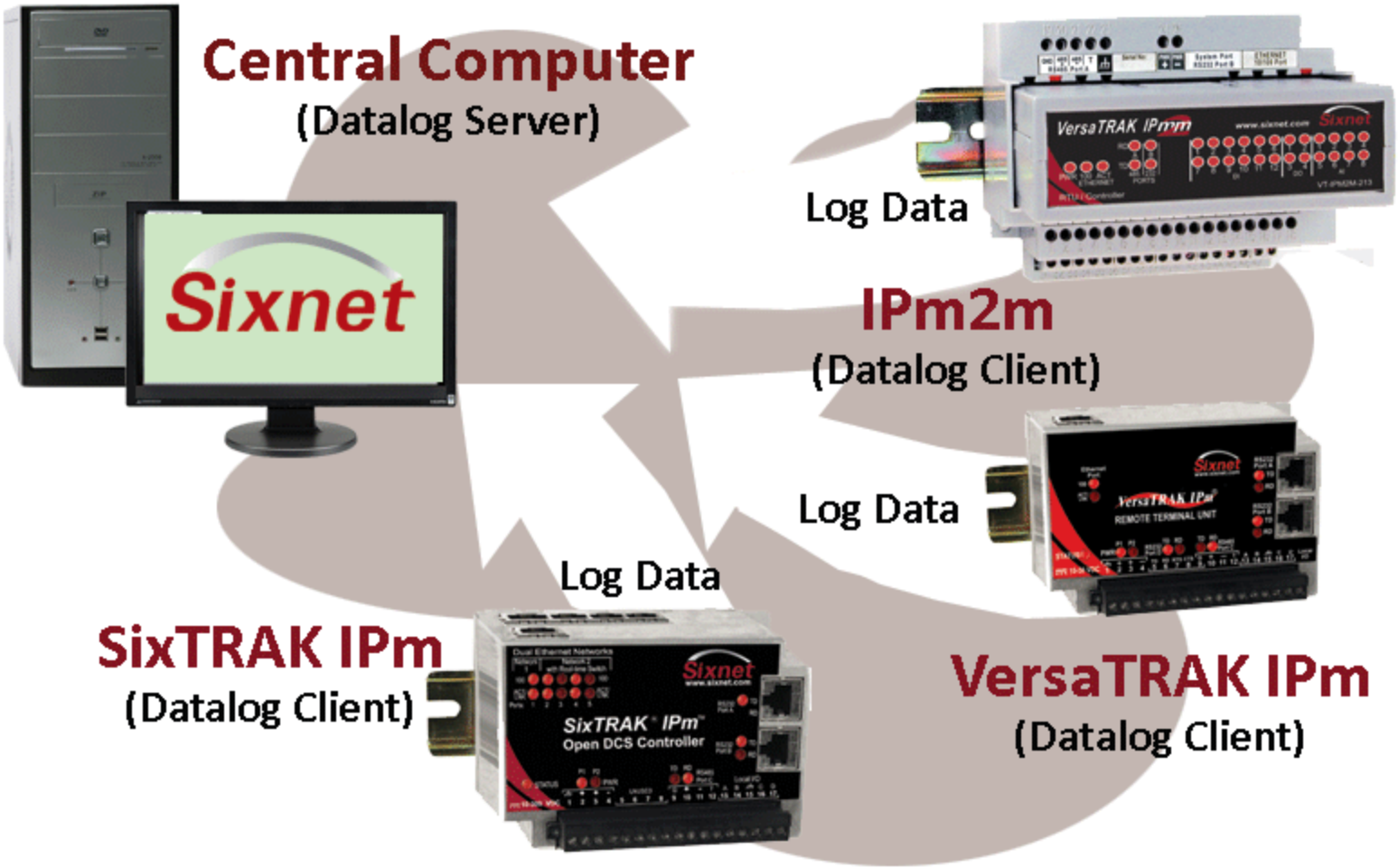
Flexibility & Redundancy Options

- Multiple datalog files can be configured in an IPm controller
- Each configuration file can be uniquely configured
- Client transfers can be support per datalog configuration
- Limitation are specific to available memory

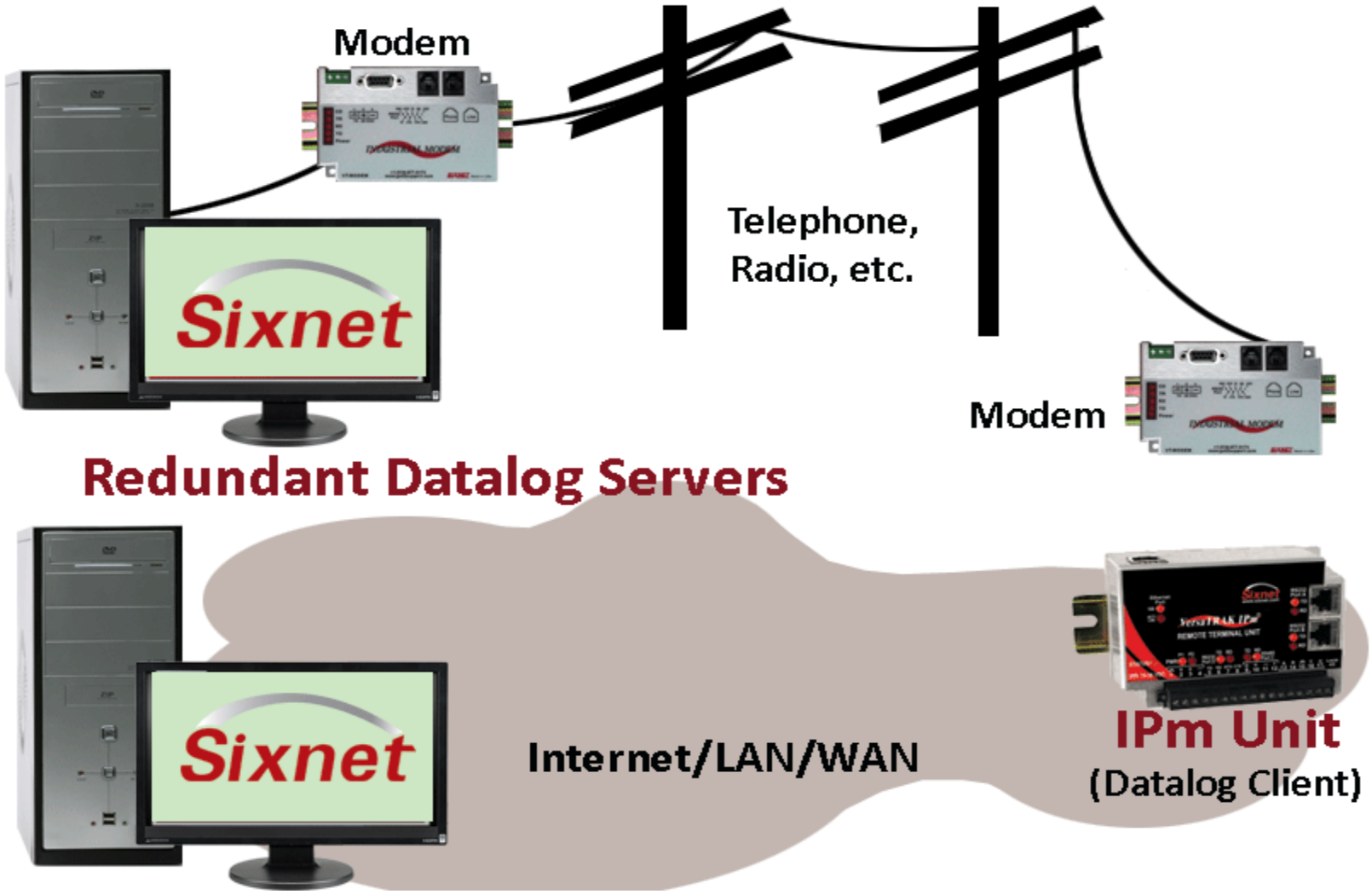
Redundant Example 1



Redundant Example 2



Redundant Example 3



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