

# Data Mirroring Configuration

PxPlus 2017 (v14) & PxPlus 2018 (v15)

# Data Mirroring

- Introduced in PxPlus 2014
  - Orlando Conference
  - Workshop at Toronto Conference in 2016
- Allows file updates to be replicated on:
  - Different systems
  - Different files
  - External databases
- File System Journalization is a pre-requisite
  - System Journals are used to transport and re-apply the data

# Why Use Data Mirroring?

- Create “Hot Standby” copy of data in case of failure
- Create central repository for branch operations
- Load external database for reporting and data analysis purposes

# How Does Data Mirroring Work?

- Application updates live data files
- Primary computer uses system journal to record updates
- Background processes transfer journal files to remote site(s)
- Remote site(s) run a re-apply utility to replicate data
  - Multiple remote sites can receive and apply journals

# Data Mirroring Process Types

- Each 'instance' uses three processes:
  - **Send, Receive** and **Apply**
- Processes are configured via a text file
- Processes run in the background
  1. **\*plus/jrnl/send** runs on originating machine
    - Sends the journal files to a receiving machine
  2. **\*plus/jrnl/recv** runs on receiving machine
    - Receives the journals and recreates them
  3. **\*plus/jrnl/apply** runs on receiving machine
    - Applies the journal contents to the data files

# Data Mirroring Configuration

2017

- User interface created in PxPlus 2017
  - Found under Data Management on the IDE
  - Type **dm** at command prompt
- Simplifies creation and maintenance of Start, Receive and Apply processes
- ‘At a glance’ view to monitor setup and status of each process
- Easily start, pause or halt any process
- Logs to help troubleshoot should a problem arise
- No longer need to maintain text files for each process

2018

# Using Data Mirroring Configuration

- Four main areas:





The screenshot shows the PVX Plus Data Mirroring Configuration window. The interface is divided into several sections:

- Process Status 'At a Glance':** A list of mirroring processes with their status indicated by traffic light icons. The first process, 'Server: CORPORTATETORONTO Receive - Toronto', is active (green light). Other processes include 'Sales Boston' (stopped), 'Calgary Sales Office' (active), 'Sales Toledo office' (stopped), and 'Toronto Data' (paused).
- Process Control:** A set of buttons for managing the processes: Start, Pause, Resume, and Halt.
- Logs:** A 'View Log' button for accessing the logs of the selected process.
- Maintenance:** A set of buttons at the bottom for 'New', 'Edit', 'Delete', and 'Exit'.

Description	Status
Server: CORPORTATETORONTO Receive - Toronto Active Home Dir: C:\PVX Plus Technologies\Workshop 2016\Mirror Configuration File Name: recv.conf	Active
Server: SALESBOSTON Send - Sales Boston Stopped Home Dir: C:\PVX Plus Technologies\DireXions 2016 Configuration File Name: send.conf	Stopped
Server: SALESOFFICECALGARY Send - Calgary Sales Office Active Home Dir: C:\PVX Plus Technologies\Workshop	Active
Server: SALESTOLEDO Send - Sales Toledo office Stopped Home Dir: C:\PVX Plus Technologies\PxPlus 2017 Configuration File Name: send.conf	Stopped
Server: TORONTODATA Apply - Toronto Data Paused Home Dir: C:\PVX Plus Technologies\Workshop 2016\Mirror Configuration File Name: apply.conf	Paused

# Data Mirroring Configuration

## Process Status Grid





Description	
	Server: CORPORTATETORONTO Receive - Toronto Stopped Home Dir: C:\PVX Plus Technologies\Workshop 2016\Mirror Configuration File Name: recv.conf
	Server: SALESBOSTON Send - Sales Boston Active Home Dir: C:\PVX Plus Technologies\Workshop 2016\Cats2016
	Server: SALESTOLEDO Send - Toledo Office Stopped Home Dir: C:\PVX Plus Technologies\Workshop 2016\Cats2016 Bad\Data
	Server: TORONTODATA Apply - Toronto Data Paused Home Dir: C:\PVX Plus Technologies\Workshop 2016\Mirror Configuration File Name: apply.conf

- Displays all processes created
- Easy to view process status by color of traffic light image
- Displays additional detail for each process
  - Name, process type, status, home directory & configuration file name
- Right click capability to change status
- Selecting row will enable/disable control buttons based on process status



# Data Mirroring Configuration

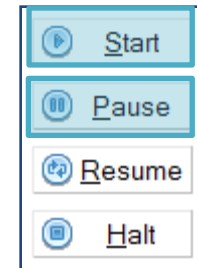
- Process Statuses

	Status	Description
	Stopped	The process is currently not running
	Paused	The process is currently paused
	Active	The process is currently running
	Connecting	The process is currently waiting to connect

# Data Mirroring Configuration

## Process Control

- Process control buttons enabled/disabled based on process status
- **Start**
  - Starts background process for the type
  - Turns process status to green once connected
- **Pause**
  - Pauses the process
  - Turns process status to yellow



# Data Mirroring Configuration

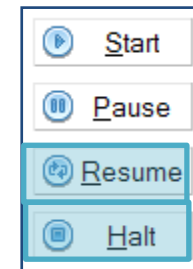
## Process Control

- **Resume**

- Re-starts a paused process
- Turns process status to green once re-connected

- **Halt**

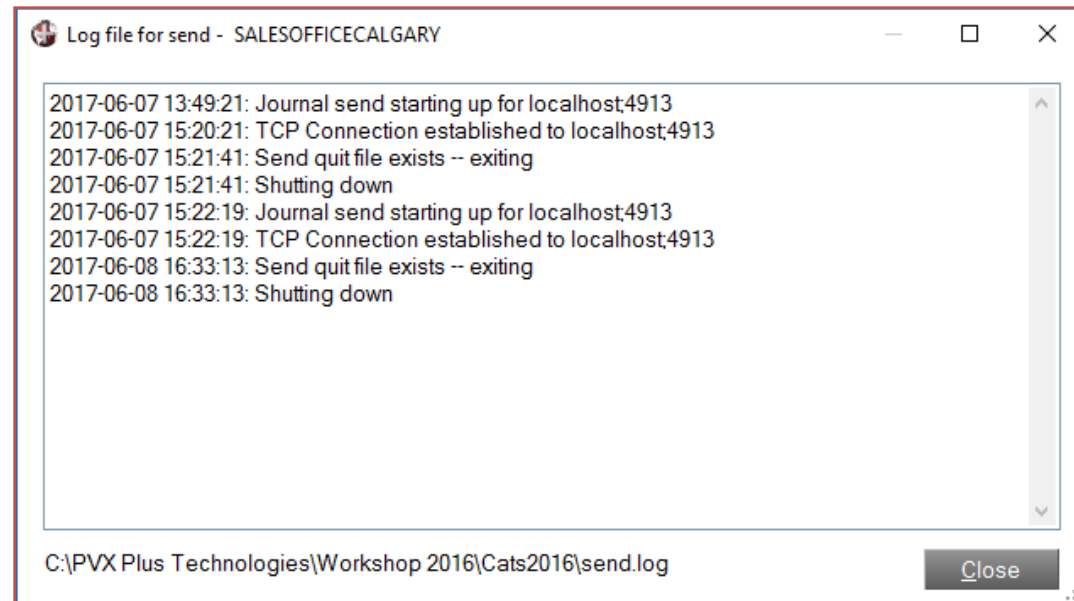
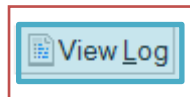
- Halts process
- Turns process status to red
- Releases background process



# Data Mirroring Configuration

## View Log

- Displays log for selected process



- Useful to troubleshoot issues

# Data Mirroring Configuration

## Maintenance



- **New**

- Create new process type
- Create process configuration text files

- **Edit**

- Edit a process and configuration text files
- Can only edit a process that is not running

- **Delete**

- Deletes a process
- Can only delete a process that is not running
- Optionally delete all configuration and log files

# Data Mirroring Configuration Files

## Adding/Maintaining Processes

- Accessible from **New/Edit** process buttons



A screenshot of a Windows dialog box titled "Data Mirroring Configuration - New Process". The dialog box contains the following fields and controls:

- Mirror ID:** A text box containing "SALESOFFICESEATTLE".
- Process Type:** A dropdown menu with "Send" selected.
- Description:** A text box containing "Seattle Sales Office".
- Home Directory:** A text box containing "C:\PVX Plus Technologies\Workshop 2016\Cats2016" with a folder icon on the right.
- Configuration File Name:** A text box containing "send.conf" with a file icon on the right.
- Buttons:** Three buttons at the bottom: "Write", "Clear", and "Exit".

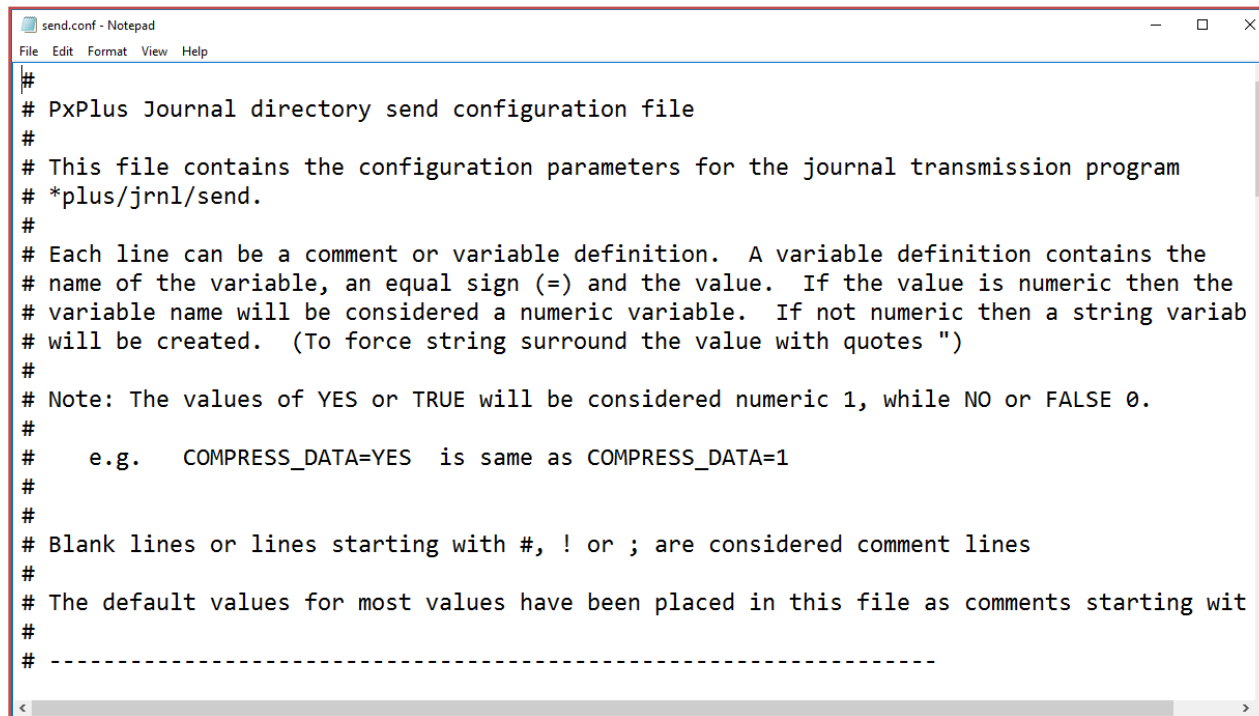
# Data Mirroring Configuration Files

- Each process type has a number of settings
- **Send** example:

PVX Plus TECHNOLOGIES LTD.		Send - SALESBOSTON - send.conf	
<b>General Information</b>	Directory to Hold Journal Files: <input type="text" value="jmis"/>	Log File Name for Error Messages: <input type="text" value="send.log"/>	ID to Uniquely Identify Control Files: <input type="text" value="send"/>
	Compress Data Being Sent: <input checked="" type="checkbox"/>		
<b>Connection Information</b>	IP Address / Name of Target System: <input type="text"/>	Port: <input type="text" value="4913"/>	
	TCP Options: <input type="text"/>		
	Password: <input type="text"/>		
	Seconds Before Checking for New Data: <input type="text" value="5"/>	Seconds Before Re-connect Attempt: <input type="text" value="30"/>	
	Seconds Before Checking Connection is Active: <input type="text" value="30"/>	Seconds Before Considering Response Lost: <input type="text" value="10"/>	
<b>Notification Information</b>	Email Address for Error Reporting: <input type="text"/>		
	SMTP Server: <input type="text"/>		
	Email From Address: <input type="text"/>		
<input type="button" value="View File"/>		<input type="button" value="Save"/>	<input type="button" value="Cancel"/>

# Data Mirroring Configuration Files

- View file button displays the text configuration file for the process



```
send.conf - Notepad
File Edit Format View Help
##
# PxPlus Journal directory send configuration file
#
# This file contains the configuration parameters for the journal transmission program
# *plus/jrnl/send.
#
# Each line can be a comment or variable definition. A variable definition contains the
# name of the variable, an equal sign (=) and the value. If the value is numeric then the
# variable name will be considered a numeric variable. If not numeric then a string variab
# will be created. (To force string surround the value with quotes ")
#
# Note: The values of YES or TRUE will be considered numeric 1, while NO or FALSE 0.
#
# e.g. COMPRESS_DATA=YES is same as COMPRESS_DATA=1
#
#
# Blank lines or lines starting with #, ! or ; are considered comment lines
#
# The default values for most values have been placed in this file as comments starting wit
#
# -----
```



# Data Mirroring Configuration Files


- View file button displays the text configuration file for the process

**PVX Plus**  
TECHNOLOGIES LTD.

Send - SALESBOSTON - send.conf

**General Information**

Directory to Hold Journal Files:

Log File Name for Error Messages:   ID to Uniquely Identify Control Files:

Compress Data Being Sent

**Connection Information**

IP Address / Name of Target System:  Port:

TCP Options:

Password:

Seconds Before Checking for New Data:  Seconds Before Re-connect Attempt:

Seconds Before Checking Connection is Active:  Seconds Before Considering Response Lost:

**Notification Information**

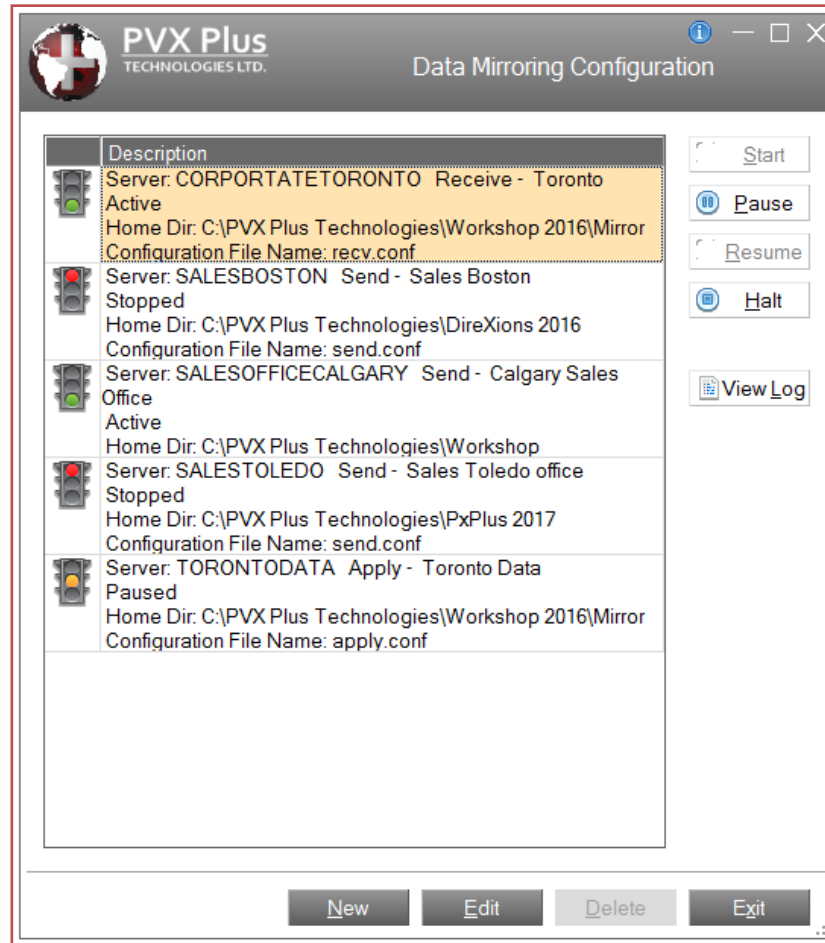
Email Address for Error Reporting:

SMTP Server:

Email From Address:

# Data Mirroring Configuration

## Demo



# Recap

- New Data Mirroring Configuration Utility
  - UI
  - Simplify Setup
  - Status 'At a Glance'

# Additional Resources

The help link(s) below refer to the current on-line help pages. The functionality may have been further updated since the PxPlus 2018 (version 15) release.

- [Data Mirroring](#)
- [File System Journalization](#)
- [Data Mirroring Configuration](#)