



DFR Downloader

Theo Laughner, PE
Presented at GPA User Forum
August 5, 2015



Overview

- Background
- Tool Overview
- Questions



Background

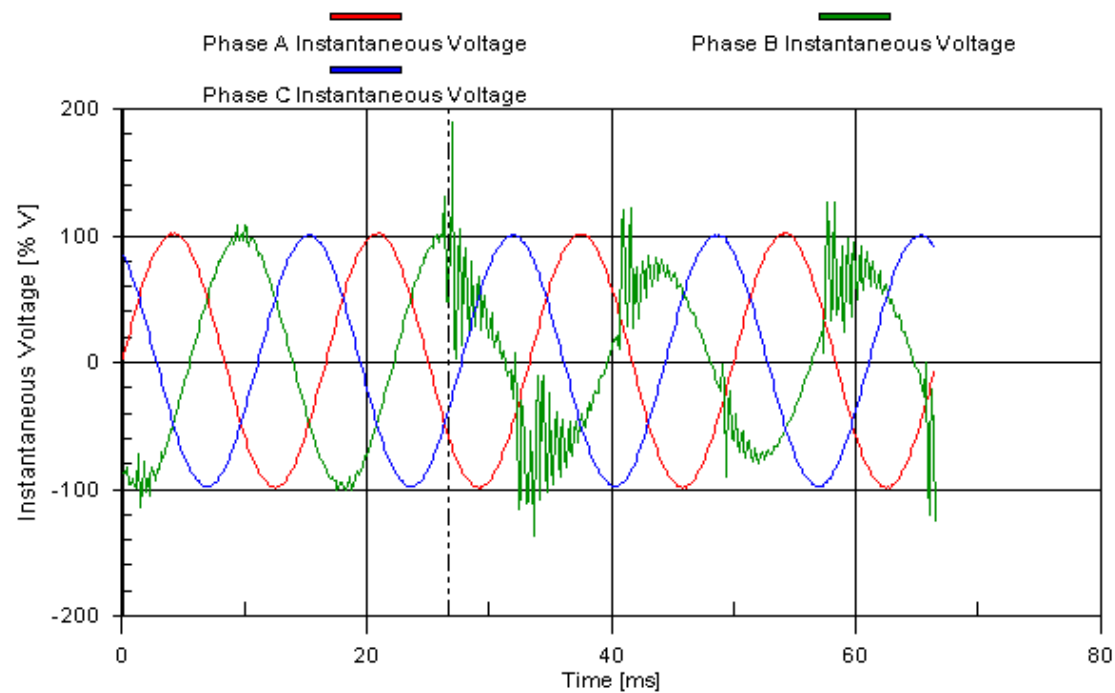
- ~1300 Metering Devices
 - DFR
 - PQ Meter
 - Revenue Meter w/PQ Capability
- Multiple Download Frequencies
 - Daily
 - Hourly
 - Sub-Hourly (every minute in some cases)



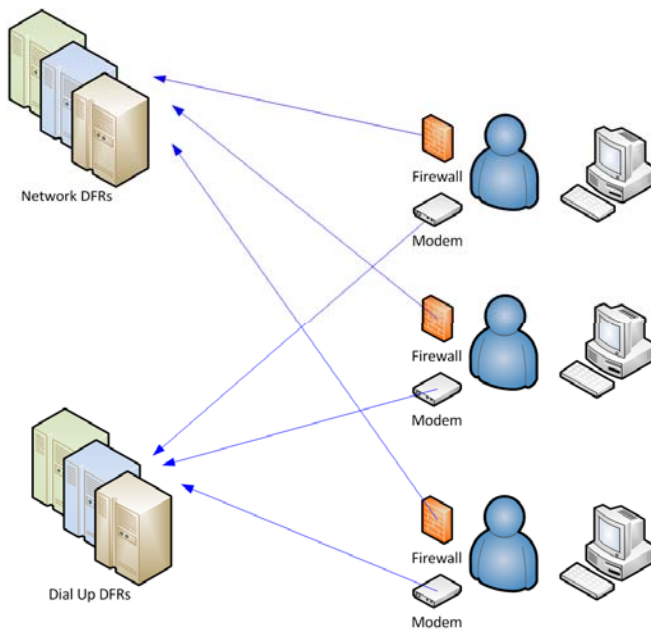
Data Quantity

- DFR
 - 251 Devices
 - ~80 Channels / Dev
 - ~3 MB / Event
 - 1 Event / Day
 - > 750 MB / Day
 - > 20k Channels
- PQ / Revenue Meter
 - 1069 Devices
 - 474 Trends / Dev
 - ~3 MB / Day
 - 144 Points / Day
 - > 3200 MB / Day
 - > 506k Trends / Day

Data Comes In Only When There Is An Event

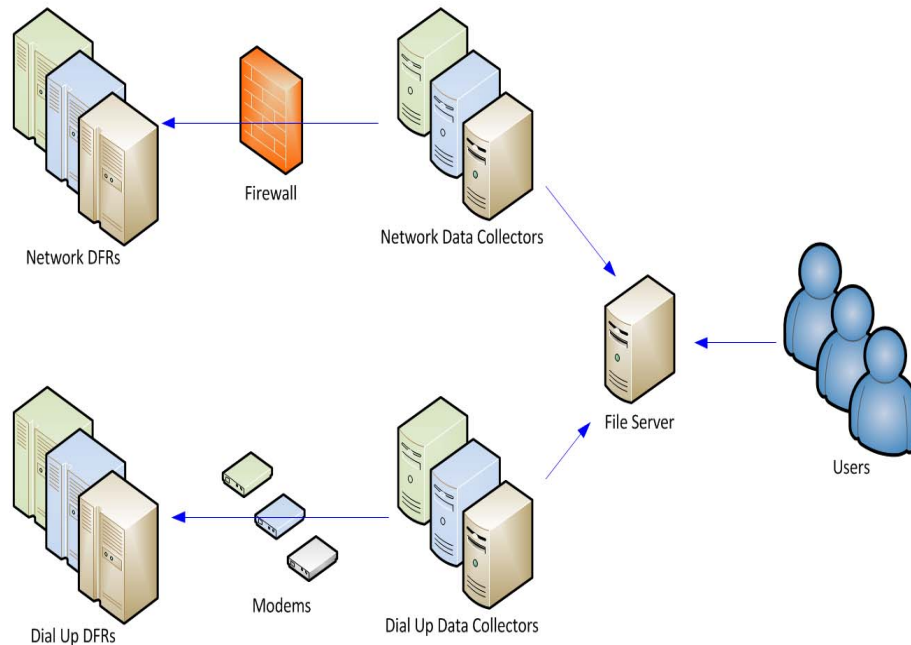


Data Flow – State 1



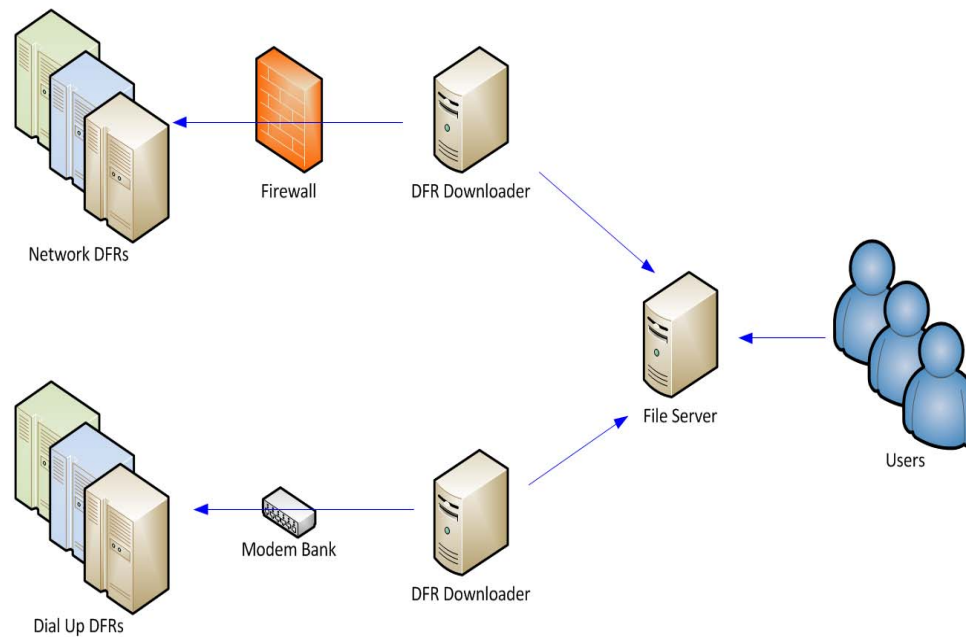
- Every stakeholder is downloading the data.
- Every stakeholder needs connectivity to the monitor.
- Every stakeholder needs the software to view the records.
- Every record is duplicated on each stakeholder's computer.

Data Flow – State 2



- Single stakeholder is downloading the data.
- Single stakeholder needs connectivity to the monitor.
- Every stakeholder needs the software to view the records.
- No records are duplicated on each stakeholder's computer.

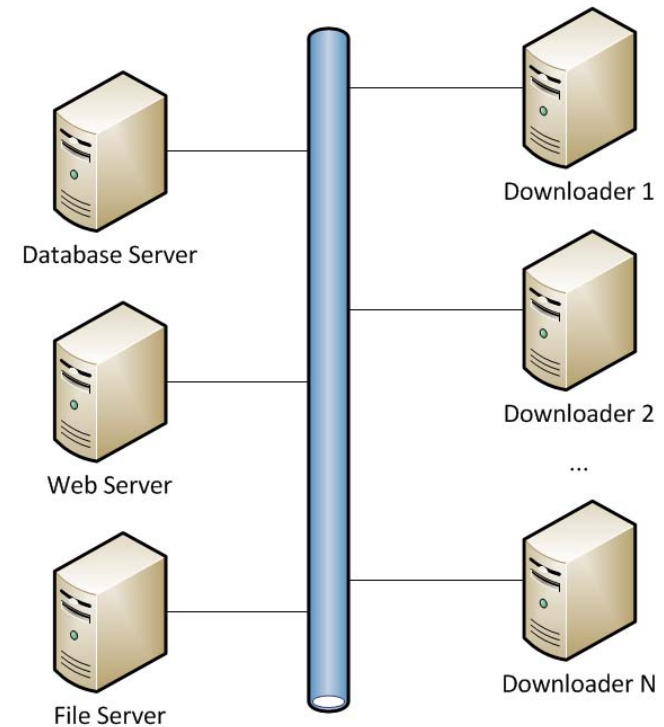
Data Flow – State 3



- Automated process is downloading the data.
- Multiple users can queue out of band downloads.
- Stakeholder needs only a COMTRADE file viewer to view the records.
- No records are duplicated.
- Automated processes can analyze files.

Tool Overview

- 4 Components
 - SQL Database
 - File server
 - Web based admin tool
 - Downloader (1 or more)

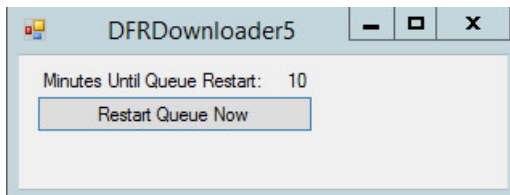




Tool Overview (Continued)

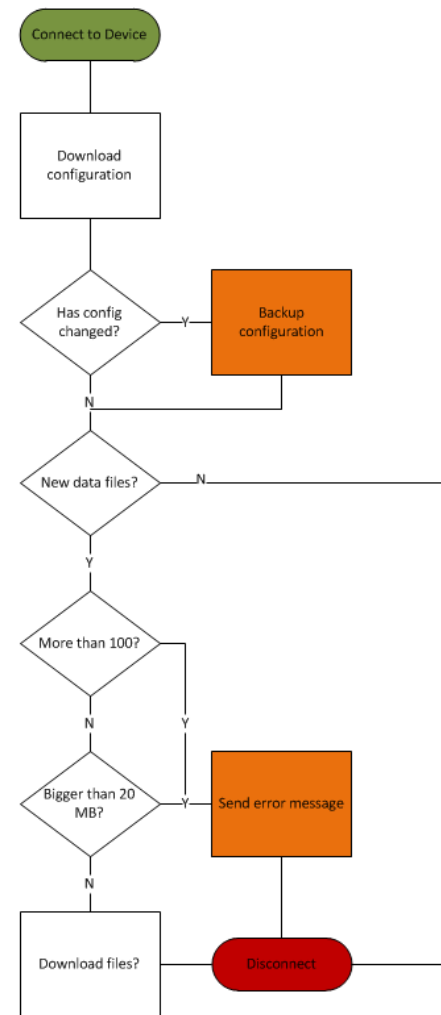
- Connects to Devices via dialup or Ethernet
- Once connected, the following occurs:
 - Downloads/Compares Configuration Files
 - Downloads new fault records
 - Converts files to COMTRADE
- DFR Compatibility:
 - APP 501/601
 - BEN 5000
 - EMAX FAXTRAX

Back End Interface

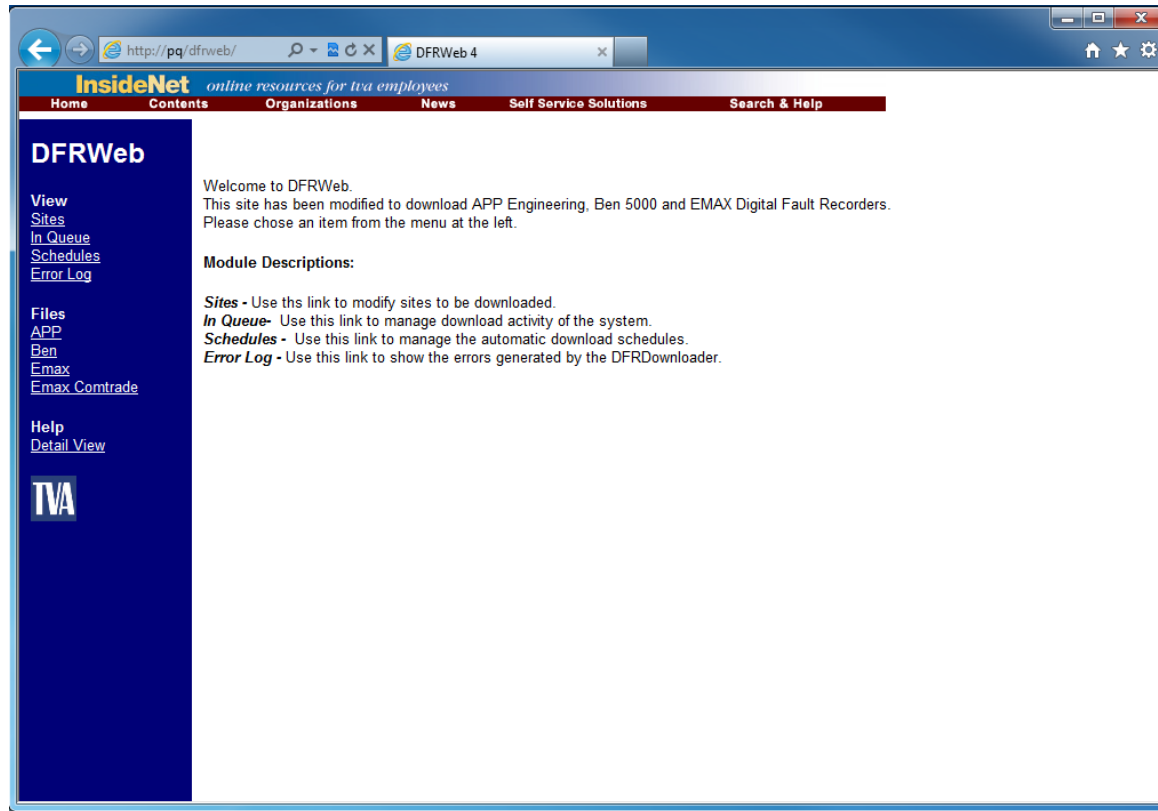


Performs The Following:

- Checks for new scheduled activities
- Checks for manually entered activities
- Connects to the devices
- Downloads the files
- Has watchdog to automatically restart, if necessary.



User Interface - Overview



Provides

- Configuration Mgt
 - Sites
 - Schedules
 - Queue
- Queue Status
- Error Log
- Quick Access To Files

User Interface - Sites

The screenshot shows the InsideNet DFRWeb interface. The main content area is titled 'DFR List' and contains a 'DFR Details' form and a table of sites. The form fields include Site Name, IP Address, Max Retries, User Name/Ben SN, Phone Number, Download Path, Password, Use DUN, Last File, Last Download, Export Comtrade, and Model. The table below the form lists several sites with columns for Edit, Delete, Download, Name, IP Address, Phone Number, Dial?, Last File, Last Date, and Model.

		Download	Name	IP Address	Phone Number	Dial?	Last File	Last Date	Model
Edit	Delete	<input type="checkbox"/>	Alberville AL			False	DATA3479.RCD	7/22/2015 10:48:00 AM	EMAX
Edit	Delete	<input type="checkbox"/>	Alcoa TN SS 1			False	DATA2272.RCD	7/22/2015 10:51:00 AM	EMAX
Edit	Delete	<input type="checkbox"/>	Alcoa TN SS 2			False	DATA7176.RCD	7/22/2015 10:52:00 AM	EMAX
Edit	Delete	<input type="checkbox"/>	Allen FP			False	F0020.inf	7/22/2015 10:52:00 AM	APP
Edit	Delete	<input type="checkbox"/>	Alpha GA			True	DATA2041.RCD	7/7/2015 11:06:00 AM	EMAX
Edit	Delete	<input type="checkbox"/>	Angeltown TN			False	DATA3483.RCD	7/22/2015 7:54:00 AM	EMAX
Edit	Delete	<input type="checkbox"/>	Apalachia HP			False	DATA1233.RCD	7/8/2015 1:57:00 PM	EMAX

Users can add or remove sites from the list.

Users can add sites to the queue for download.

User Interface - Queue

The screenshot shows a web browser window with the URL <http://pq/dfweb/>. The page title is "InsideNet online resources for tva employees". The navigation bar includes links for Home, Contents, Organizations, News, Self Service Solutions, and Search & Help. The main content area is titled "DFRWeb Activity" and displays a table of site queue items. A left sidebar contains navigation links for Sites, In Queue, Schedules, Error Log, Files, APP, Ben, Emax, Emax Comtrade, Help, and Detail View. The TVA logo is visible at the bottom of the sidebar.

			Queue	IP	Site	Status	Priority	Attempt #	Max Retry	Last File
View Site	Edit	Delete	108		Hiwassee TN 2	In Progress	10	0	3	F0823.inf
View Site	Edit	Delete	100		Apalachia HP	In Progress	10	0	3	DATA1233.RCD
View Site	Edit	Delete	102		Sebastopol MS	In Progress	10	0	3	DATA1543.RCD
View Site	Edit	Delete	103		Roane TN 2	In Progress	10	0	3	DATA2245.RCD
View Site	Edit	Delete	100		Hiwassee TN 1	In Progress	10	0	3	DATA6519.RCD
View Site	Edit	Delete	2		Cherokee HP	In Progress	10	0	3	DATA1084.RCD
View Site	Edit	Delete	107		Wolf Creek HP	In Progress	10	0	3	DATA1737.RCD
View Site	Edit	Delete	104		West Ringgold GA	In Progress	10	0	3	DATA9756.RCD
View Site	Edit	Delete	110		Lawrenceburg TN	In Progress	10	0	3	DATA3491.RCD
View Site	Edit	Delete	111		Cullman AL	In Progress	10	0	3	F0369.inf
View Site	Edit	Delete	102		Smyrna TN	In Progress	10	0	3	DATA2184.RCD
View Site	Edit	Delete	101		Lowndes MS 1	In Progress	10	0	3	DATA2579.RCD
View Site	Edit	Delete	104		Browns Ferry NP 2	In Progress	10	0	3	DATA9386.RCD
View Site	Edit	Delete	106		Cumberland FP 2	In Progress	10	0	3	DATA2225.RCD
View Site	Edit	Delete	101		Montgomery TN 1	In Progress	10	0	3	F0074.inf
View Site	Edit	Delete	109		Cordova TN 3	In Progress	10	0	3	DATA8521.RCD
View Site	Edit	Delete	107		Athens AL	In Progress	10	0	3	DATA7219.RCD
View Site	Edit	Delete			Colbert FP 2	Queued	10	0	3	5593
View Site	Edit	Delete			Fort Loudoun HP	Queued	10	0	3	1801
View Site	Edit	Delete			Gallatin FP 1	Queued	10	0	3	1708
View Site	Edit	Delete			Raccoon Mountain PS 1	Queued	10	0	3	3324
View Site	Edit	Delete			Bradley TN	Queued	10	0	3	5348
View Site	Edit	Delete			Albertville AL	Queued	10	0	3	DATA2470.RCD

Users can add or remove sites from the queue.

Users can modify the priority of items in the queue.

User Interface - Schedule

InsideNet *online resources for tva employees*

Home Contents Organizations News Self Service Solutions Search & Help

DFRWeb

View
Sites
In Queue
Schedules
Error Log

Files
APP
Ben
Emax
Emax Contrade

Help
Detail View

TVA

Schedules

Add Schedule

Schedule Description:

Parameters:

			Description	Parameters
Download	Edit	Delete	Dialup DFRs (Every 1hrs)	*!*+60
Download	Edit	Delete	Network DFRs (Every 5min)	*!*+5

Users can create a schedule.

Users can select DFRs for one or more schedules.

User Interface - Files

The screenshot shows a web browser window with the URL <http://pq/dfweb/>. The page title is "InsideNet online resources for tva employees". The navigation menu includes Home, Contents, Organizations, News, Self Service Solutions, and Search & Help. The main content area displays a list of files and folders under the heading "DFRWeb".

Name	Date modified	Type	Size
Allen FP	7/22/2015 11:52 AM	File folder	
Bethel Valley TN	7/22/2015 11:53 AM	File folder	
Center Point GA 2	7/22/2015 11:53 AM	File folder	
Cullman AL	7/22/2015 11:52 AM	File folder	
Gallatin FP Scrubber Yard	7/22/2015 11:52 AM	File folder	
Hiwassee TN 2	7/22/2015 11:52 AM	File folder	
Lagoon Creek TN SS	7/22/2015 11:57 AM	File folder	
Loudon TN	7/22/2015 11:52 AM	File folder	
Montgomery TN 1	7/22/2015 11:56 AM	File folder	
Pin Hook TN 1	7/22/2015 11:53 AM	File folder	
Pin Hook TN 2	7/22/2015 11:53 AM	File folder	
Rutherford TN 1	7/22/2015 11:53 AM	File folder	
Rutherford TN 2	7/22/2015 11:53 AM	File folder	
South Nashville TN	7/22/2015 11:53 AM	File folder	
West Centerville TN	1/29/2015 9:54 AM	File folder	
APPchannel.ini	11/24/2014 11:08 ...	Configuration sett...	11 KB

Users can navigate to the file server where downloaded files are stored.



Future Work

- Check clock synchronization
- Turn back end into a service



Questions?

