



SMS 2.0 – Technical Introduction

2019 User Group Conference

SMS 2.0 Technical Introduction

- Progress OpenEdge and Components
- SMS 2.0 Architecture
- OpenEdge Explorer
- Backups
- SMS 2.0 Updates
- IT Services Support

What is OpenEdge?

OpenEdge is a software development product of Progress, Inc. Skyward SMS 2.0 uses the ABL (fka 4GL) and WebSpeed languages to program the Skyward SMS 2.0 Applications.

Skyward SMS 2.0 uses the OpenEdge Enterprise Relational Database Management System to store the data.

OpenEdge Components

- **Database** - A database is a collection of files used to store data and indexes.
- **AppServer** - A Progress software product that allows processing to run using the resources of the server, rather than the client.
- **WebSpeed** - WebSpeed can be used for applications where users are accessing the application using a web browser, mobile device or a system making requests using XML and HTTP/S as the transport protocol.
- **Broker / Agent** - Brokers/Agents are used to communicate with the database.
- **NameServer™** - A Progress software product that controls access to the AppServer and WebSpeed processes.
- **Messenger** - The WebSpeed Messenger picks up incoming application service requests from WebSpeed clients and directs them to a WebSpeed broker that supports the application service; either cgiip program or ISAPI process.
- **Program Files** - Skyward writes and compiles program code. These program files are what is included in the Skyward Release, Addendum and RMA files.

SMS 2.0 Architecture

- Database Structure
- PaC Client vs. Web Client
- Report Queue Processing
- Task Processing
- ODBC Access

Database Structure

Before Image:

- Also known as BI. This is where the input data goes first. The database engine moves the data from here to the database extents. This file may have at least one formatted extent and one variable extent.
- .b files

After Image:

- Also known as AI. This is used for Type 2 database crash recovery. If this option is being used, all data that is written to the database is also written to the AI files. The AI files can be used to rebuild the Type 2 database to a more recent point in time than just using the nightly backup.
- .a files

Data:

- These are the database extents or permanent data files. This is where the b files permanently write data to. Each data area is home to the tables in the database.
- .d files

Database Structure

- **Extents – Individual database files used to store data**
- **Type 2 Storage v5:**
 - Made up of multiple storage areas and one extent for each area.
 - Multiple areas allow for storing specific data types in their own area, for quicker access.
 - Uses large file sizes.
 - Larger extents for larger tables.
 - More efficient than Type 1

Student/Combined database extents are located in the
?:\Skyward\data folder on database server

Finance database extents are located in the
?:\Skyward\data\skyfin folder on database server

SKYWARD.b1	128,256 KB
SKYWARD.d1	25,216 KB
SKYWARD	640 KB
skyward.db.lg	0 KB
SKYWARD.lg	2,988 KB
SKYWARD.lic	22 KB
SKYWARD.st	3 KB
SKYWARD_7.d1	512 KB
SKYWARD_8.d1	128 KB
SKYWARD_9.d1	17,920 KB
SKYWARD_10.d1	6,016 KB
SKYWARD_11.d1	34,816 KB
SKYWARD_12.d1	SKYWARD_119.d1
SKYWARD_13.d1	SKYWARD_120.d1
SKYWARD_14.d1	SKYWARD_121.d1
SKYWARD_15.d1	SKYWARD_122.d1
SKYWARD_16.d1	SKYWARD_123.d1
	SKYWARD_124.d1
	SKYWARD_125.d1
	SKYWARD_126.d1

Database Structure

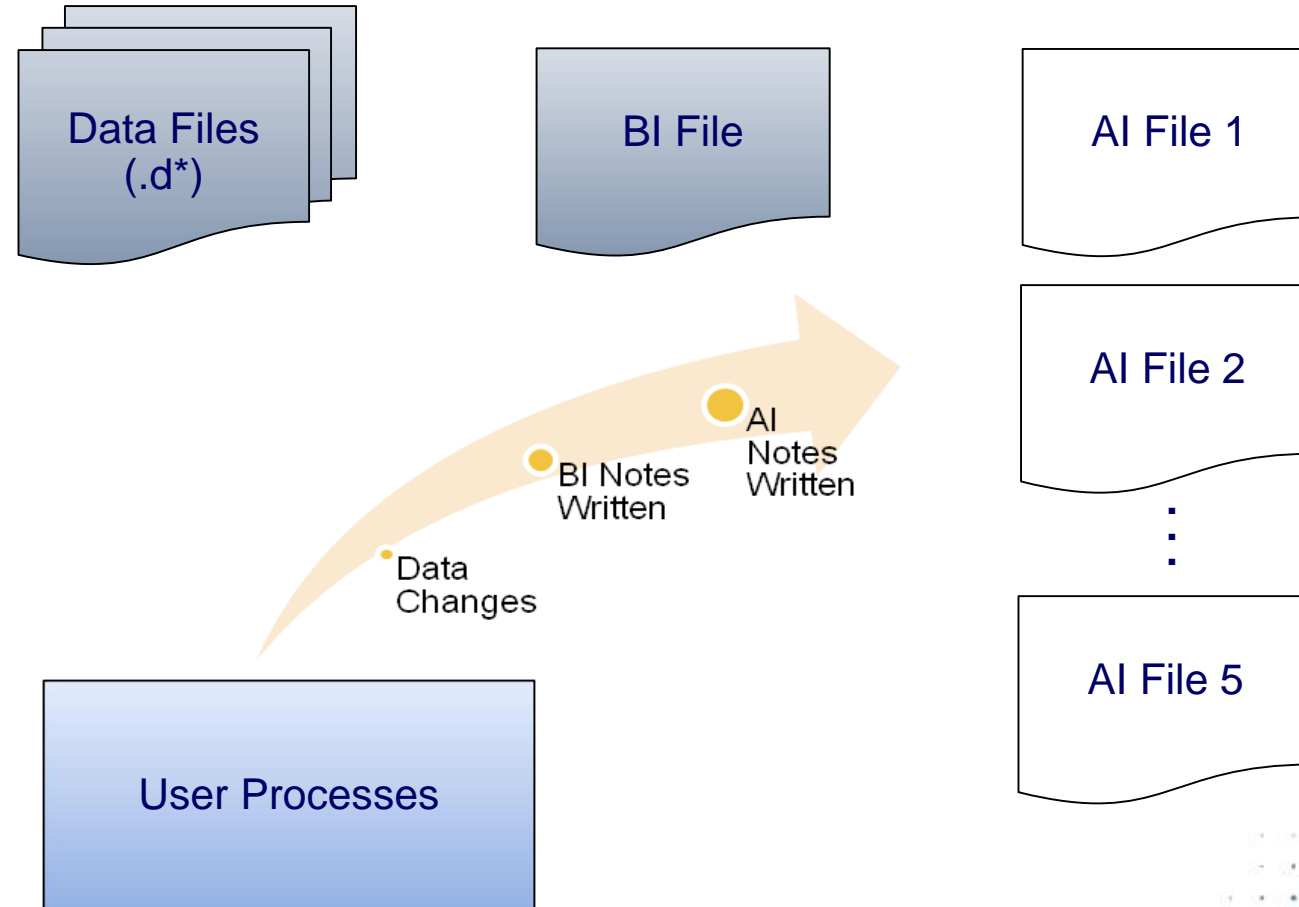
- **Extents – Individual database files used to store data**
- **Type 1 Storage:**
 - Formatted extents are formatted space on the hard drive.
 - Extents setup to a maximum size of 2Gb.

Student/Combined database extents are located in the
?:\Skyward\data folder on database server

Finance database extents are located in the
?:\Skyward\data\skyfin folder on database server

SKYWARD.b1	2,000,000 KB	B1 File
SKYWARD.b2	16 KB	B2 File
SKYWARD.conversion.lg	1,031 KB	LG File
skyward.d1	512,000 KB	D1 File
skyward.d2	512,000 KB	D2 File
skyward.d3	512,000 KB	D3 File
skyward.d4	512,000 KB	D4 File
skyward.d5	32 KB	D5 File
skyward.db	256 KB	Data Base File
skyward.db.lg	36 KB	LG File
skyward.lg	91,200 KB	LG File
skyward.lic	2,050 KB	LIC File
skyward.lk	1 KB	LK File
skyward.st	1 KB	ST File

After Imaging



PaC Client vs. Web Client vs. Mobile App

- Point and Click is a client /server connection to the Skyward database via the PaC Client that is installed on a workstation or server.
- A Web Client is a user connection through a web browser such as Internet Explorer, Edge, Chrome, Firefox, or Safari. Web connections can also be made via the Skyward Mobile App or the Web Browser on an Android, a Windows or an Apple i-device. Web Applications include Educator Access Plus, Teacher/Student/Family Access, or Employee Access.
- Mobile Access empowers students, parents, and employees in your district to take control of their data. With access to information such as grades, schedules, and attendance, parents and students will stay abreast of what is happening in class. Employees love SMS 2.0 Mobile Access for timekeeping, payroll history, and requisition approval.

Web Access

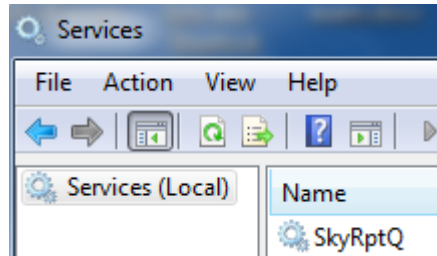
School Business Suite

- Employee Access wsFin/seplog01.w
- Fast Track wsFin/rwamai01.w
- SMSMobile wsFin/mobile.w
- SkyPort wsFin/skyportlogin.w
- TrueTime Quick Entry Portal wsFin/rwetru09.w

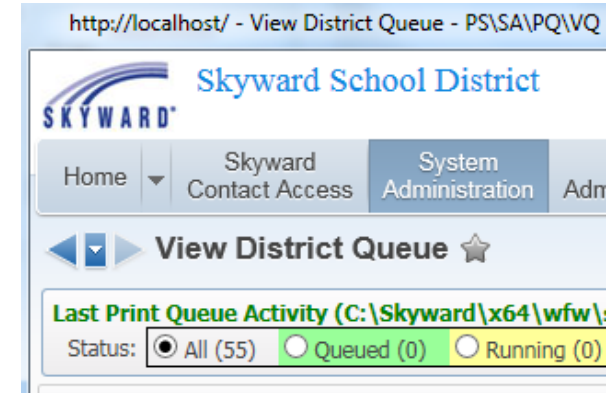
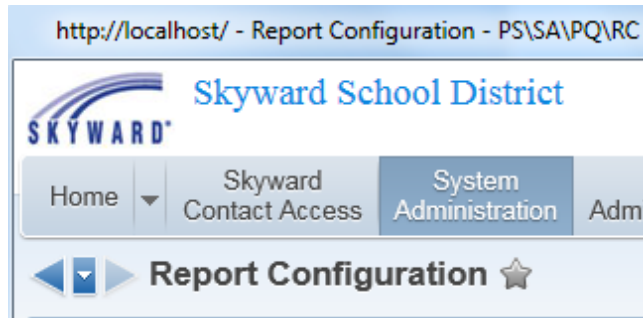
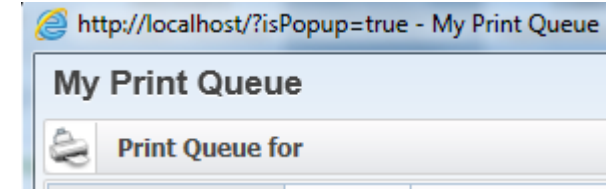
Student Management Suite

- District Calendar wsEApplus/districtcalender.w
- Educator Access + wsEApplus/seplog01.w
- Family/Student/Teacher Access wsEApplus/fwemnu01.w
- New Student Online Enrollment wsEApplus/skyenroll.w
- Pocket PaC wsEApplus/qwelog20.w
- SMSMobile wsEApplus/mobile.w
- SkyPort wsEApplus/skyportlogin.w

Report Queue Processing



- ▼ District Print Queue - PQ
 - Report Configuration - RC
 - View District Queue - VQ
 - Scheduled Tasks - ST
 - Monitoring Tasks - MT
 - Process Tracking - PT
 - Program History - PH



How To Create Reports

Use Environment Variables Use UNC Path
UNC Path (\\servername\directory\):

How To Display Reports

Use IIS Virtual Directory Use Link Override Stream Files To Browser
Link Override (http://server):
Stream From (\\servername\directory\):

How Long to Keep Reports

Number of days to keep reports not counting Saturday/Sunday:

Scheduled/Monitoring Task Processing

▼ **District Print Queue - PQ**

- Report Configuration - RC
- View District Queue - VQ
- Scheduled Tasks - ST
- Monitoring Tasks - MT
- Process Tracking - PT
- Program History - PH

Edit

Delete

Run Now

Clone

Pause All Monitoring Tasks

Edit

Delete

Run Now

Clone

Resume All Paused Scheduled Tasks

Pause All Scheduled Tasks

Assign Scheduled Task Blackout

Tasks

Schedule This Create a Scheduled Task with the selected report/utility

Scheduled Tasks View all of your scheduled tasks

Monitor This Create a Monitoring Task with the selected report/utility

Monitoring Tasks View all of your monitoring tasks

ODBC Access

http://localhost/ - SQL Read-Only Users - PS\CA\SE\RO -

SKYWARD Skyward School District

Home Skyward Contact Access System Administration Admin

SQL Read-Only Users ☆

Views: General Filters: *Skyward

Login

skydbuser

Expand All Collapse All View Printable Details

Assigned Templates Assign

	Template Name	Template Description
Delete	All Tables	All Tables

Total Number of Templates: 1

SQL User: SKYDBUSER

SQL Password:

SQL Port Number: 12501

ODBC Data Source Administrator (32-bit)

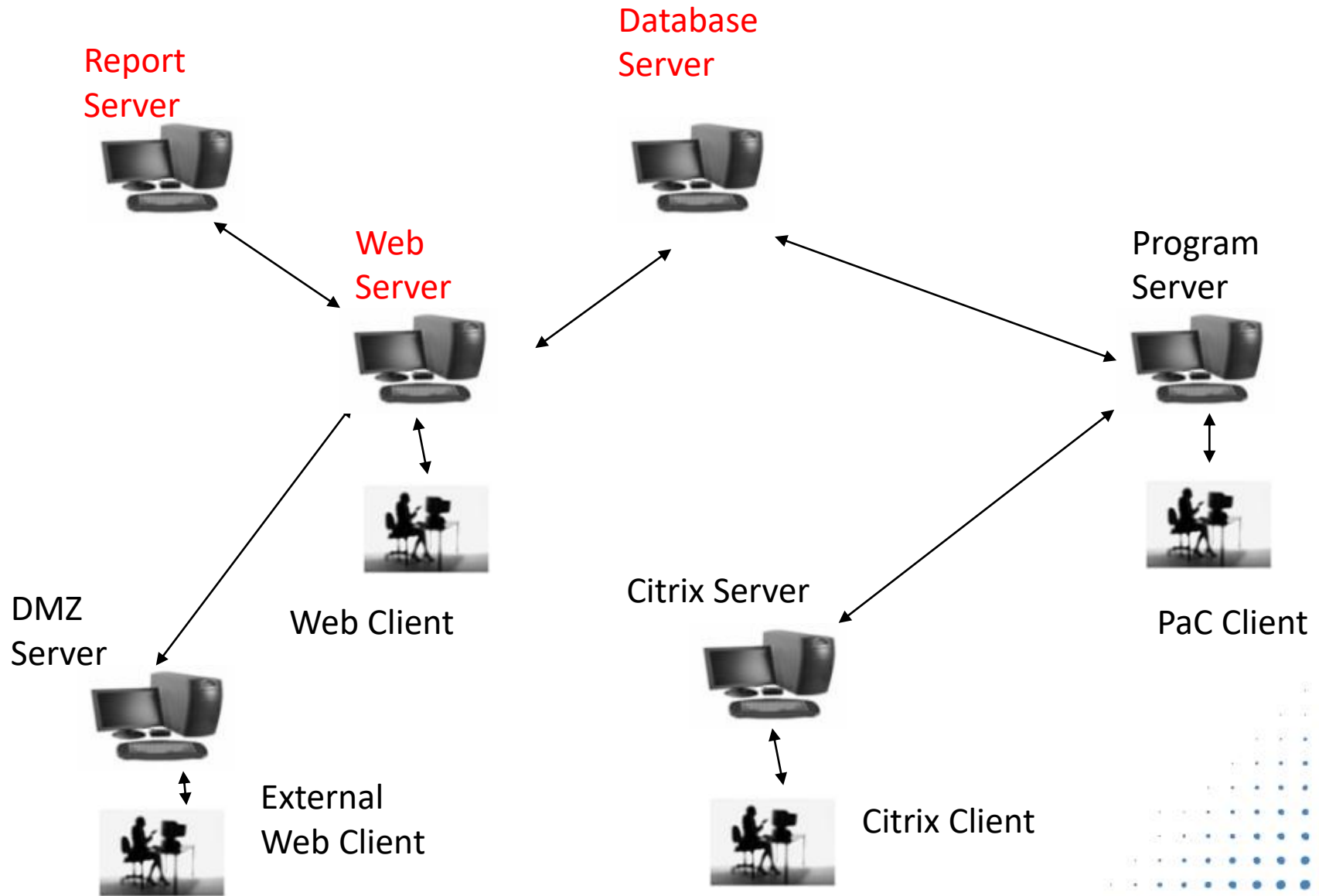
User DSN System DSN File DSN Drivers Tracing Connec

System Data Sources:

Name	Platform	Driver
Skyward	32-bit	Progress OpenEdge 11.7 Driver

Server Configuration

- Servers
 - All-In-One Server
 - Program Server
 - DMZ Web Server
 - Multiple Server
- Specification
- Anti-Virus Protection



Server Specifications

<https://support.skyward.com/Page.ashx/ITServices/TechnicalInformation/SystemNetRequirements>

Current Requirements

Servers

- Data Warehouse
- ExComm SIF Agent
- School Business Suite (SBS)
- Student Management Suite (SMS)
- Program Servers (SBS PaC only)
- School Management System (SBS and SMS)
- OpenEdge Management

Server Anti-Virus Protection

- It is best practice to install Anti-Virus on your server.
- If installed, set the following real-time scanner exceptions:
 - ?:\skyward\data
 - ?:\skyward\wrk
 - ?:\skyward\archive
 - ?:\skyward\backup
- For the best performance set the real-time scanner to scan incoming files only.
- We highly recommend that Anti-Virus be installed on any server that acts as a Program Server for PaC Clients. The Program server will have a Skyward Network Share and with that, easy access to infect from workstation to server.

PaC and Web Clients

The PaC Client supports both 32 bit and 64 bit operating systems.

<https://support.skyward.com/Page.ashx/ITServices/TechnicalInformation/SystemNetRequirements>

Web-based Workstation Requirements

<https://support.skyward.com/DeptDocs/Corporate/IT%20Services/Public%20Website/Technical%20Information/Workstation%20Requirements/Web%20Based%20Workstation%20Requirements.pdf>

Web-based SkyScan Install Guide – Scanning Client for Skyward Web

<https://support.skyward.com/DeptDocs/Corporate/IT%20Services/Public%20Website/Technical%20Information/Workstation%20Requirements/Web%20Based%20SkyScan%20Install%20Guide.pdf>

Web Food Service SkySerial Install Guide – Dual Keypads and/or Queueing

<https://support.skyward.com/DeptDocs/Corporate/IT%20Services/Public%20Website/Technical%20Information/Workstation%20Requirements/Web%20Food%20Service%20SkySerial%20Install%20Guide.pdf>

OpenEdge Explorer Tool



Progress OpenEdge
Management

Login

Username

Password

LOGIN

Resource status

- Pass
- Fail
- Not Checked
- Not Running
- Disabled
- Inactive
- Offline

- AdminService
- Logging In
- Navigation
- Components
- Stopping
- Starting

Resources

Resources

[- Search on resource name]

Select Resource

- AdminServer (1 Item)
 - esdemo1
- AppServer (5 Items)
 - esdemo1.asADFSSMon
 - esdemo1.asSky
 - esdemo1.asSkyMon
 - esdemo1.asSkyRAS
 - esdemo1.asSkyRpt

Resources / OpenEdge / AppServer / asSky



AdminServer: esdemo1

AppServer: asSky

STOP APPSERVER

AdminServer:	esdemo1
Host:	ESDemo1
Broker:	ACTIVE
Operating mode:	State-reset
Broker statistics available:	True
Servers available:	1
Should register with NameServer:	True

Command and Control



Broker Control

Start or stop broker

Database Backup Overview

- How does the Database get Backed Up
 - Dbscan.bat file is the current backup batch file.
 - Runs the OpenEdge PROBKUP Utility.
 - The probkup utility checks the integrity and validity of all database blocks and copies them to a physical backup file.
 - If database blocks are found corrupt, the display message will indicate this and the backup file will not be created.
 - You can be emailed the backup log contents on a daily basis for notification of success or failure of the backup task.
- Other Backup Products
 - Some customers use a backup software like ArcServe/VEEam to create a backup of the Skyward server.
 - Even though many backup software packages have open file options, integrity of the database cannot be guaranteed when backing up the live database files in the \data folders.

FTP a Backup File to Skyward

- What is the name of a backup file?
 - Student/Combined Database
 - SKYBACK.date/time
 - Business
 - SKYBACKFIN.date/time
- How do I manually run a backup
 - Dbscan.bat file is the current backup batch file
 - Shortcut on Desktop / Task Scheduler / Located in ?:\skyward\backup folder
 - Compress backup file; possibly into 4G files using compression software such as 7Zip
- Secure FTP to Skyward
 - Use a true FTP Client (ex: FileZilla Client)
 - [Sftp://ftp.skyward.com](sftp://ftp.skyward.com) / TCP Port 22
 - Skypac / NOLIMIT
 - Will be told folder name in \incoming folder

Skyward Updates

Releases

- Skyward posts a new release about three times each year, usually in February, June, and October (some exceptions will apply).
- This release file will contain enhancements and new features, as well as updated tables and reports if required.
- Releases are named for the release number (ex: V117d125.skyrel for June 2019 – 117.)

Addendums

- Addendums are updates that can be applied when users are still in software unless otherwise noted.
- Users will be notified via email that an addendum is available and why it may be necessary.
- There may also, on occasion, be state or even site specific addendums that will contain important software. Instructions for loading are included with the email (ex: V117d125a02.skysfs).

Note: The Skyward program current version number can be found on the blue Title bar of the Skyward client screen or beneath the login box on the Skyward Web logon page.

05.19.06.00.04

05 = SIF version number

.19 = The Year the Full Release was distributed (2019)

.06 = The Month the Full Release was distributed (June)

.00 = Increments with each PMP that is distributed after the Full Release

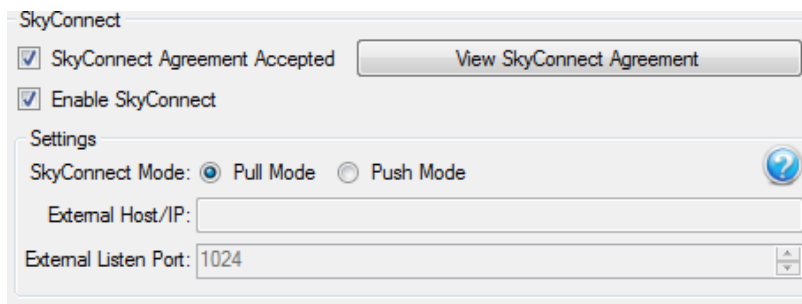
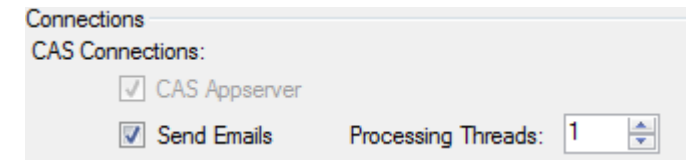
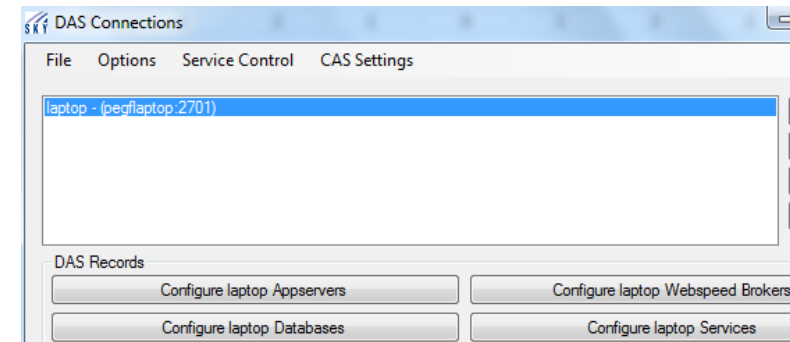
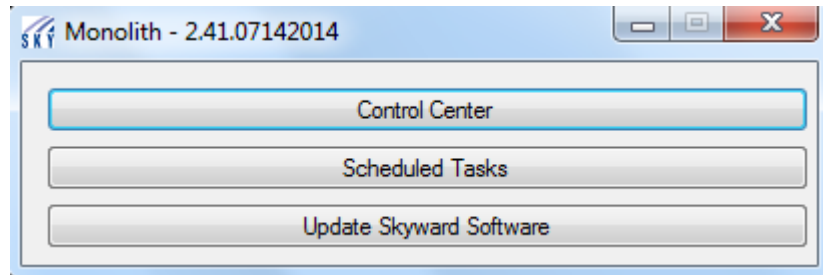
.04 = Increments for each Addendum after the PMP

Monolith

Monolith 2

SKYCASv2
SKYDASv2

Skyward Monolith CAS Service
Skyward Monolith DAS Service



Scheduled Tasks

Status: Pending In Progress Success Error

Task Type	Occurrence	Start Date	Run On
Update Read Only Us...	Daily	09/10/2015 04:47 PM...	DB: School (Stu) ...
Run DBTool	Weekly	09/12/2015 10:35 AM...	DB: School (Stu) ...
Update Statistics	Weekly	09/13/2015 10:36 AM...	DB: School (Stu) ...

IT Services Support

- Support Included in Annual License Fee
- After Hours Support
- Billable Work
- Managed Services
- Live Chat

IT Services or Hardware Call

- Regular support hours is available Monday through Friday from 7:00 AM to 5:00 PM CST.
- As part of Annual License Fee, users are identified as being able to create 'issues' with the Software group and the IT Services group.
- The users can create the issues using the F1 key in the software if their security record in Skyward has been setup to allow Customer Access and their contact number has been entered.
- These types of calls have to do with the Skyward software or hardware.
- The users are also able to create the issues by calling 1-800-236-0001 or going online to support.skyward.com and entering the call.

After Hours Support Call

- After Hours Support is available:
 - Monday – Friday 5pm – 9pm CST
 - Saturday 8am – 5pm CST
 - Sunday noon – 5pm CST
- Contact can be made to IT Services by calling 1-800-236-0001 and pressing 6.
- The contact person will leave a message and it will be dispatched to the primary engineer on-call.
- The contact person will be called within one hour.
- The billing will be 1.5 x Monday – Thursday and 2 x Friday – Sunday.
- After Hours Support is intended for emergency use to assist District IT departments with issues that occur outside regular support hours.

Network Consulting (Billable Support)

- A billable support issue is placed in the call queue the same way as a non-billable support issue.
- A billable support issue would be one where the Skyward Engineer would work on something other than Skyward software setup or Skyward hardware. Ex: Email server or firewall or content filter or migrating a server or virtual server config changes.
- The IT Services engineer will tell you when that line is being changed from non-billable to billable, if applicable.
- The District can purchase Technical Support Hours to cover these billable issues by contacting their Account Rep.
- A Service can be considered billable such as Tune-up Service or a Skyward Update.

Managed Services Call

- A call entered by a Managed Services customer is identified differently in the call queue.
- Most Managed Services calls are taken care of by an IT Services engineer without contacting the contact person as we have remote access to the Skyward server(s).
- Managed Services contact person is contacted via email or phone once the issue has been resolved.

Live Chat Call



- Live Chat calls are an option for customers.
- The end user needs to choose the Live Chat button when entering a call.
- The end user will then enter the live chat queue and the call will be accepted as soon as someone is available.
- The IT Services engineer may find the need to change the Live Chat call to an IT Services or Hardware call if the issue cannot be resolved by live chat messaging.

Unitrends

Microsoft
GOLD CERTIFIED
Partner

PROGRESS
SOFTWARE

ISCORP
Integrated Systems Corporation

CISCO SYSTEMS

TEA
TEXAS EDUCATION AGENCY

symantec

SKYWARD
IT Services

Hewlett Packard
Enterprise

SONICWALL

propalms
terminal services edition

GeoTrust

vmware

BARRACUDA
NETWORKS

MICRO FOCUS
Novell

arcserve

VEEAM

Lightspeed
Systems Partners

TOOLS4EVER
IDENTITY GOVERNANCE & ADMINISTRATION

Thank you for attending!