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SMS 2.0 IT Intro

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Vice President of Information Security

SMS 2.0 –A Snapshot

- 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

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

OpenEdge 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

OpenEdge 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	17,280 KB
SKYWARD_119.d1	40,960 KB
SKYWARD_120.d1	12,544 KB
SKYWARD_121.d1	9,216 KB
SKYWARD_122.d1	512 KB
SKYWARD_123.d1	
SKYWARD_124.d1	
SKYWARD_125.d1	
SKYWARD_126.d1	

OpenEdge Database Structure

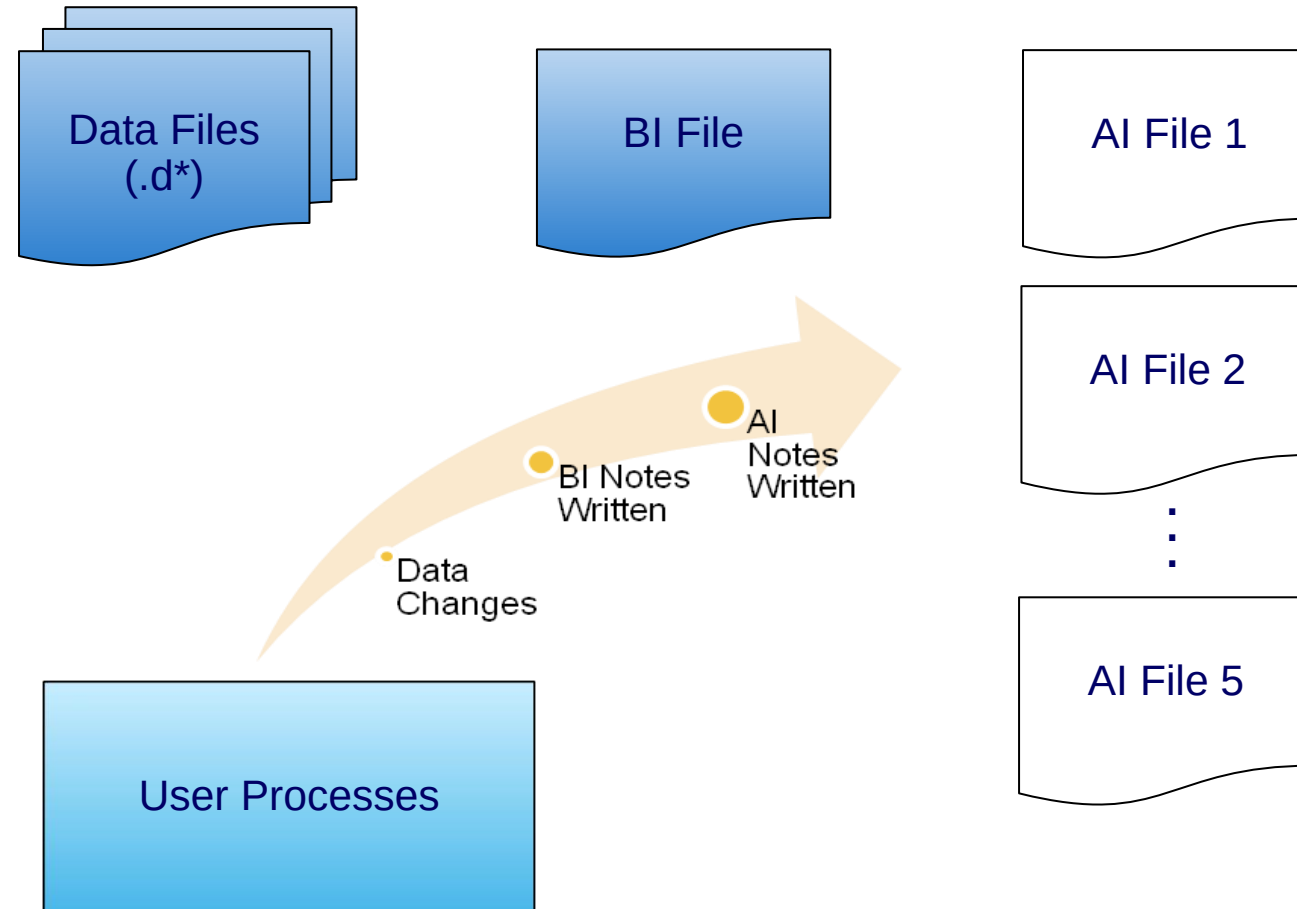
- **Extents – Individual database files used to store data**
- **Type 1 Storage:**
 - Formatted extents are formatted space on the hard drive.
 - Extents setup to a maximum size of 2Gb.

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 using iOS and Android devices.

Web Access

School Business Suite

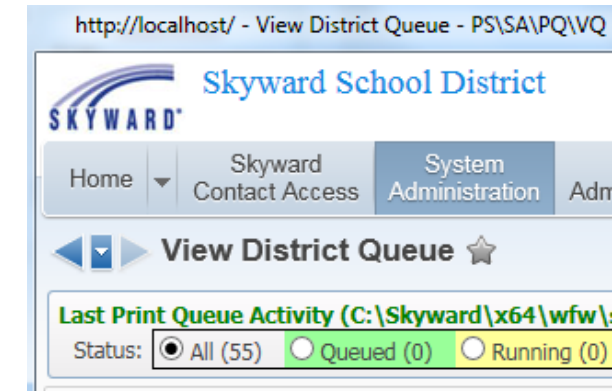
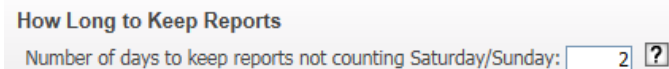
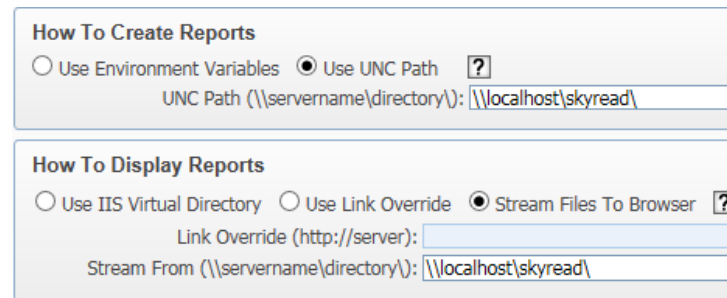
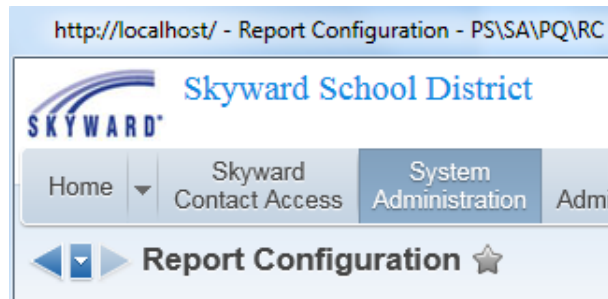
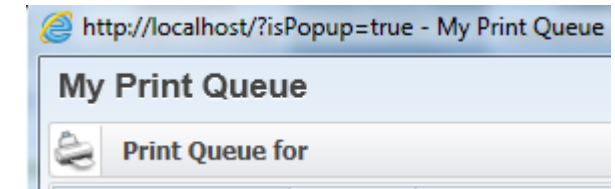
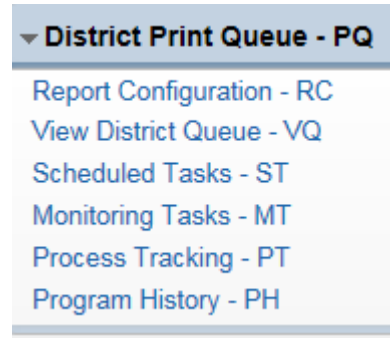
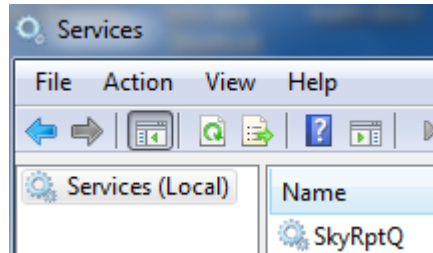
- **Employee Access** wsFin/seplog01.w
- **Fast Track** wsFin/rwamai01.w
- **SMSMobile** wsFin/mobile.w
- **SkyPort** wsFin/skyportlogin.w
- **TrueTime Quick Entry Portal** wsFin/rwetru09.w

Student Management Suite

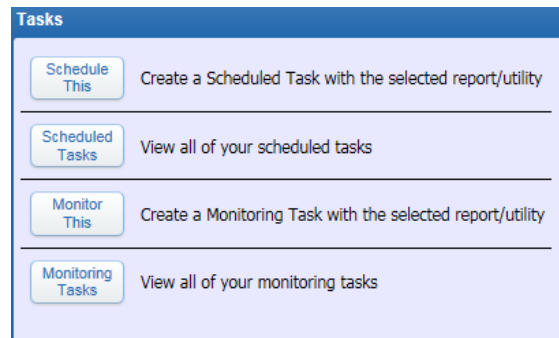
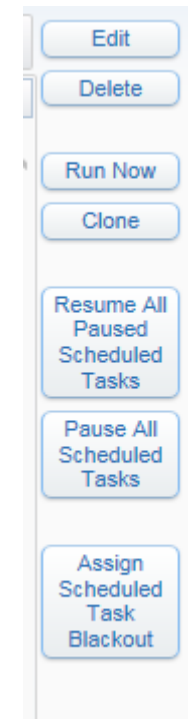
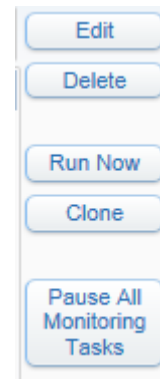
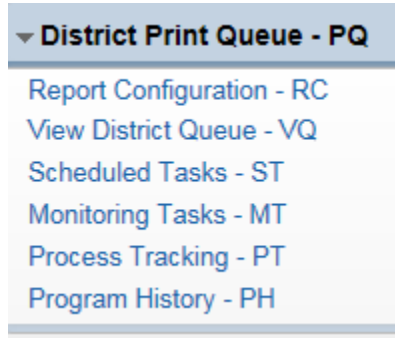
- **District Calendar** wsEAplus/districtcalender.w
- **Educator Access +** wsEAplus/seplog01.w
- **Family/Student/Teacher Access** wsEAplus/fwemnu01.w
- **New Student Online Enrollment** wsEAplus/skyenroll.w
- **SMSMobile** wsEAplus/mobile.w
- **SkyPort** wsEAplus/skyportlogin.w

<https://support.skyward.com/DeptDocs/Corporate/IT%20Services/Public%20Website/Technical%20Information/Administration/Web-Based%20Product%20URLs.pdf>

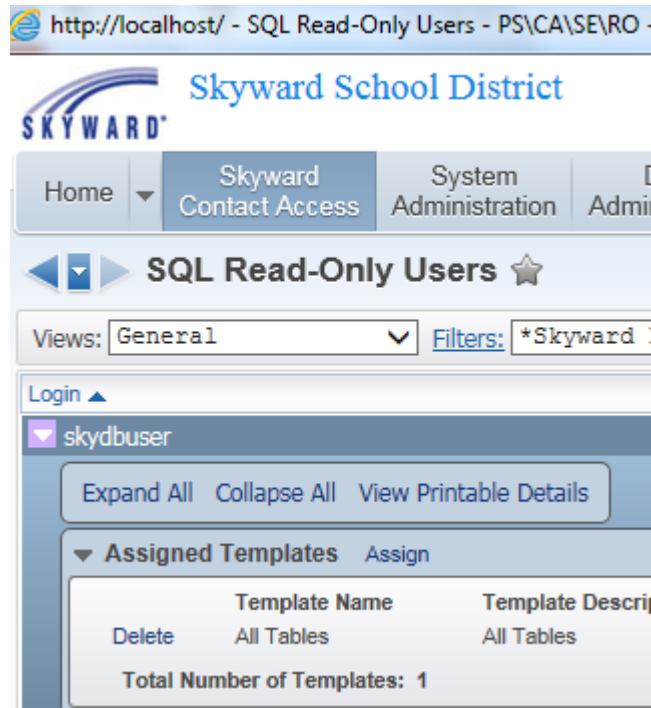
Report Queue Processing



Scheduled/Monitoring Task Processing



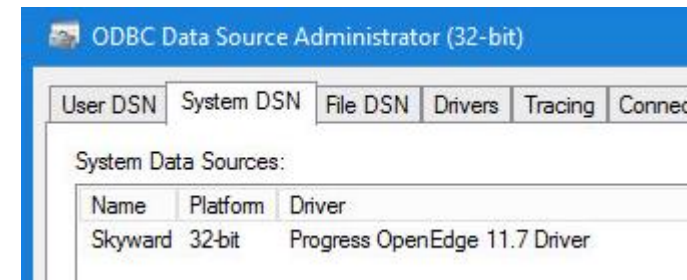
OpenEdge ODBC Database Access



SQL User:

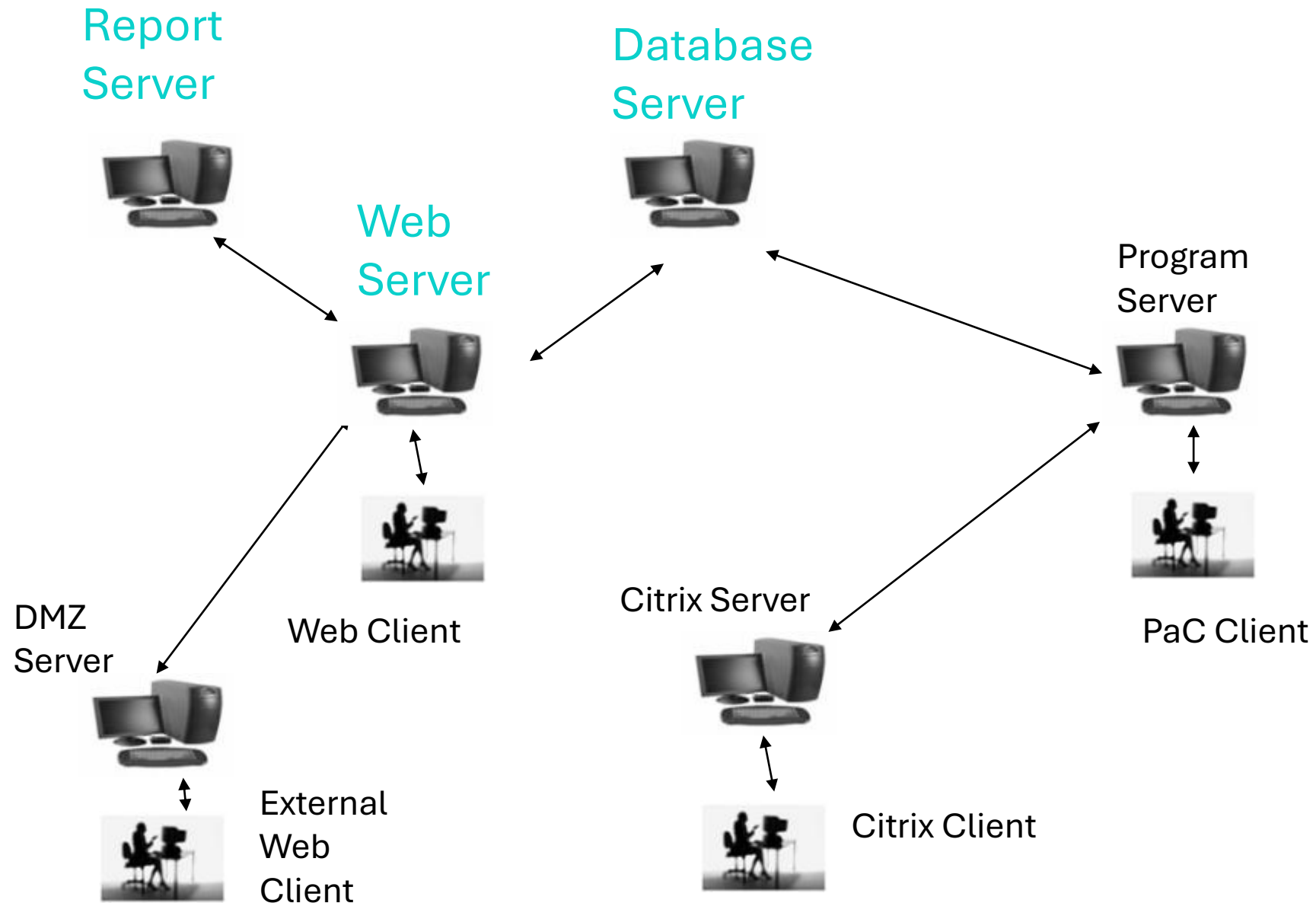
SQL Password:

SQL Port Number:



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

School Business Suite (SBS)
Student Management Suite (SMS)
Program Servers (SBS PaC only)
School Management System (SBS and SMS)

Server Anti-Virus Protection

- It is best practice to install Anti-Virus on the Skyward 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>

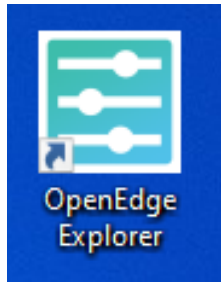
Web-based SkyScan Install Guide – Scanning Client for Skyward Web

<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



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



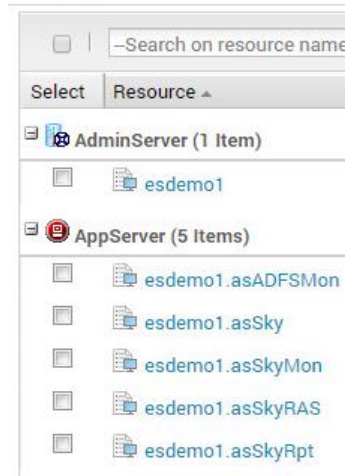
Login

Username

Password

Login

Resources



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

Resource status

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

OpenEdge 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.

Backup After Imaging Files

- AI Archive Files

- Archive files are created in timed increments from the after image files in the data folder
- The archive files should be copied to a remote location; usually a subfolder of where the nightly backup file is copied.
- The 'ai copy to remote' script can be used as a Windows Task set to run every xx minutes; schedule will be based on the timed increment of archive file creation.

Other Backup Products

- Third party products
 - Some customers use a backup software such as 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.

Skyward Updates

05 = *SIF* version number
.24 = The *Year* the Full Release was distributed (2024)
.06 = The *Month* the Full Release was distributed (June)
.00 = Increments with each *PMP* that is distributed after the Full Release
.06 = Increments for each *Addendum* after the PMP

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: V117d140.skyrel for June 2024– 117.)

Addendums

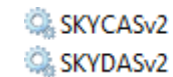
- Addendums are updates that can be applied when users are still in software unless otherwise noted.
- Users will be notified via email that an addendum is available and why it may be necessary.
- There may also, on occasion, be state or even site-specific addendums that will contain important software. Instructions for loading are included with the email (ex: V117d140a06.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.

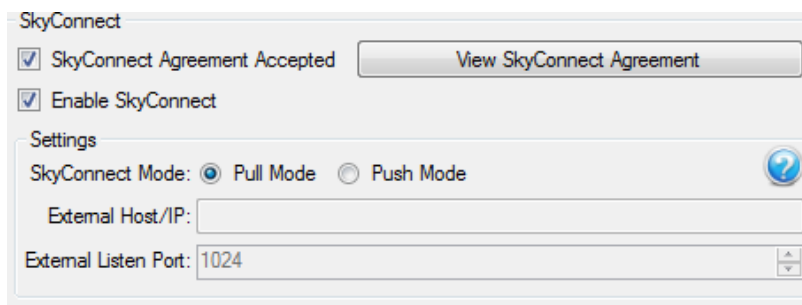
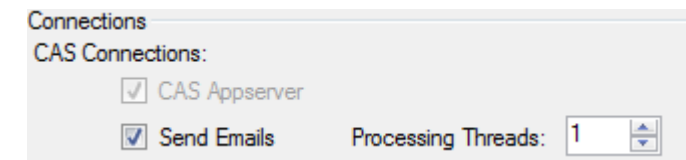
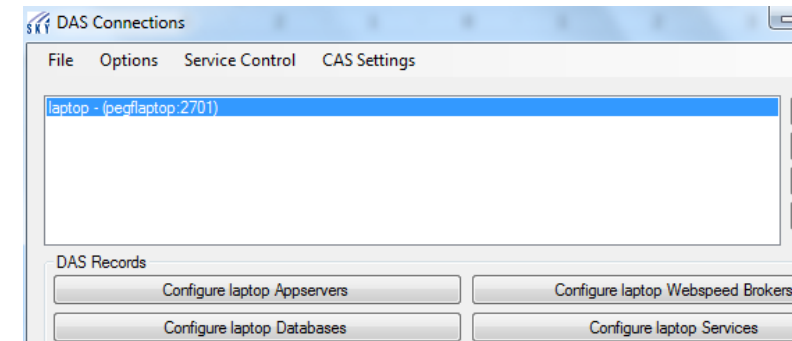
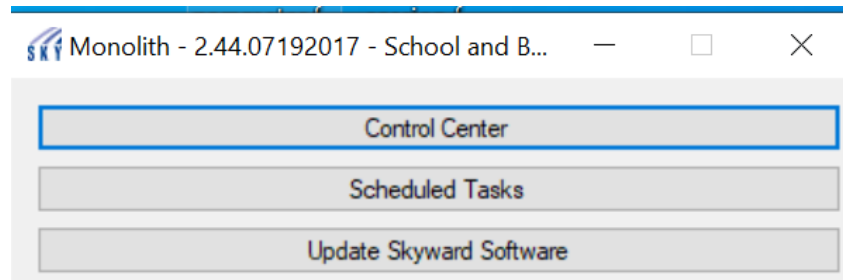
Monolith



Monolith 2



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 / TSH 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.



Skyward's IT experts have the latest knowledge on industry trends and developments to help keep your network running smoothly.

NETWORK CONSULTING

- Resilient Wired Network Infrastructure
- Complete Wireless Network Solutions
- Virtual Server Design and Support
- Storage Area Network Solutions
- IP Telephony Solutions

SUPPLEMENTAL IT STAFFING

- Onsite and Remote IT Support
- Network Assurance Services

ASSESSMENT SERVICES

- Network / Security
- Disaster Recovery
- Secure Cloud Computing

SKYWARD OPTIMIZATION

- Managed Services
- Database Tune-ups
- Remote Update Services
- System Admin Training

NETWORK SECURITY SOLUTIONS

- Intrusion Detection, Prevention, and Next Generation Firewalls
- Email Filtering, Archiving, and Security Solutions
- Internet Filtering and Monitoring Solutions
- On-Staff Security Experts

DISASTER RECOVERY SERVICES

- Skyward Disaster Recovery from ISCorp
- Onsite Data Center Disaster Recovery Solutions





THANK YOU!