What's New in ASPEN OneLiner V15.7

This maintenance release contains fixes for software bugs, plus some program improvements.

Run the OneLinerV15.7Setup.exe that you downloaded to update an existing *OneLiner*V15 installation or to create a new *OneLiner*V15.7 installation on your computer.

Note: This is a maintenance release; no new parameters for any network or relay objects were introduced. This means that the data files generated by OneLiner V15.7 are fully compatible with earlier releases of OneLiner V15.3 through V15.6. (More on differences between a maintenance release and a major release can be found on the last page of this document).

Please write to support@aspeninc.com in English (suporte@aspeninc.com in Spanish and Portuguese) or call us (650-347-3997) if you have questions.

Program Improvements between Versions 15.6 and 15.7

 Built-in client of the ASPEN Enterprise Module (EDX): The ASPEN Enterprise Module (EDX) is an add-on module of ASPEN OneLiner designed to facilitate network-model-data management and model-building collaboration in a system protection and control team and between power utilities companies with interconnected networks.

The EDX has in its core a relational database (EDB) hosted on an Oracle or Microsoft SQL Database Server, where all the network model data are stored for shared access by all team members. The data connection between the database and OneLiner and other clients is asynchronous, which allows OneLiner users to connect to the database to exchange the model data on the as-needed basis. A user who wants to perform a study has to first login to the EDB to acquire a suitable OLR model file and run the simulation in the traditional OneLiner GUI environment. Authorized uses can also submit the models they updated in OneLiner to the EDB using the program's built-in commit command. The updated models are made available to other users only after review and approval by a supervisor or peer. The software maintains a detailed journal of all changes made in the network model and relay parameters. Each journal entry includes a time-stamp, the user name, the "before" and "after" values, as well as user description, justification and data-source reference for the changes.

Users running OneLiner V15.7 can perform *EDX* commands: Commit, Get Latest and Version History on their *OneLiner* fields without having to install any additional software, provided that their machine has already been set up with the connection to the *EDX* database.

Users must obtain a separate license from ASPEN to install and use the EDX module.

- 2. EDX commands Commit, Get Latest, Version History Lite Mode: When the program is launched with a hardware key having no EDX module license, these EDX commands will be available with a reduced feature set. Users can only access a single EDX database located on the local machine when running in the EDX lite mode.
- 3. Updated the search text logic in the Find Bus and Place Bus command dialog boxes to look for the search string anywhere in the bus name.



- 4. Enhanced the Check Relay Coordination Using Stepped-Event command logic to correctly handle tapped transformers that are modeled as a two 2-winding transformers in series, with a zero-sequence shunt at the middle bus. The command now faults the bus at the very end of this combo, instead of at the middle bus.
- 5. **Introduced new attribute FILEPATHCFG** to the DIFFANDMERGE API.
- 6. **Updated relay import** from manufacturer file logic to enhance the coverage of the command.
- New distance relay method SEL300G for the backup distance protection of SEL-300G generator protection relay. This manufacturer specific distance relay method includes simulation of the relay transformer compensation logic.
- Enhanced distance relay methods SEL411P__, SEL411G__, SEL421P__, SEL421G__ to support new SEL-411 and SEL-421 fault detector settings: Z50G1-Z50G5 and Z50P1-Z50P5.
- 9. Enhanced VCCS (voltage-controlled current source) data anomaly checking logic to report units with abrupt current change.
- 10. New ability to specify the fault impedance R and X when running the Check | Primary/Backup coordination command.
- 11. Enhanced the scripting engine to support for additional data access tokens: BUS_nXfmrMidPoint, X3_nLTCside, X3_nLTCtype.

- 12. **New Network option:** Default name prefix for new buses. This option will help to avoid incorrect results in compare/merge *OneLiner* networks.
- 13. **New Tools | Search Network command**: This command allows you to find objects in the OneLiner network that contains the given search strings in the bus name and/or in the object's properties values. The command lets you open the selected object in the properties dialog box. And if the selected object is visible on the 1-line diagram, you can recenter the display to show it.

Search Network	
Buses (count=32) Sort by bus name Show additional	details
30 'ALASKA' 33 kV	
27 'ARIZONA' 33 kV	
28 'ARIZONA' 132 kV	
26 'CALIFORNIA' 33 kV	_
2 'CLAYTOR' 132 kV	
25 'COLORADO' 33 kV	
19 'DELAWARE' 33 kV	
'DOT BUS' 13.8 kV	
5 'FIELDALE' 132 kV	
24 'FLORIDA' 33 kV	-
Find text: CLAY Found: 1/1 Prev. Next	
(Ctrl+Enter to specify up to 3 search strings)	
Edit Properties Locate on 1-line Cancel	Help

14. Support for non-zero fault impedance in the Check | Primary/Backup coordination command: Users can specify desired fault impedance R and X values when running the Check | primary/backup coordination in this version.

•	
Check C Selected relay group Against its backupe Against its backupe C Coord, pairs in vicinity C Coord, pairs in area(s) C Doord, pairs in area(s) C Coord, pairs in area(s) C All coordination pairs Additional criteria KV range = 0.939 Tags= Coordination Types Checked C Backup / OC Primary (Multi-Point) Interm, fault increment %= 10. Interm, fault with end opened V Line-end fault V Remote bus fault V	Relay Types Checked Image: Ground Phase Check Using 3LG fault 1LG fault 2LG fault L-L fault Fault Z (ohm) = 0.0 +i 0.0 -i -i Outage lines and transformers Image: Simulate simultaneous outage of 2 lines Checking Report Image: Outage and transformers Image: Outage and Good Checking Report Image: Outage with CTI not between: Image: Outage of 3939. s Image: Flag cases with CTI not between: Image: Outage of a series Image: Outage outers outage of 2 lines Simulate Simultaneous outage of 2 lines Image: Checking Report Image: Outage outersImage: Outage outers Image: Outage outers Image: Outage outers Flag cases with CTI not between: Image: Outage: Outers Image: Outage: Outers Image: Outers Image: Outers Image: Checking Report Image: Outers Image: Outers Image: Outers Image: Outers Flag cases with CTI not between: Image: Outers Image: Outers Image: Outers Image: Outers Image: Outers Image: Outers Image: Outers Im
OK	Cancel Help

15. **New delay threshold** for the File | Preferences | Relay | Option of "Ignore instantaneous/DT unit in OC relays". This delay threshold was assumed to be zero in the previous *OneLiner* version.

16. **Python OlxObj version 3:** This new version of the Python OlxObj library includes additional *OneLiner* network and relay object types. The Add New Object operation is also supported in this version.

New and Updated Overcurrent Relay Curves

- ABB.RLY
 - Fixed fuse curves of PROLINK
- AREVA.RLY
 - ALSTOM IEC curves
- COOPER.RLY
 - Cooper 8.3, 15.5, 23.0 KV X-Limiter Full Range Parallel Mounted Fuse. Ref. No.: R240-91-112
 - Cooper Bay-O-Net Dual Element 108C fuse link In Transformer Oil. DOC NO. R240-91-57
- CUTLER_HAMMER.RLY
 - Cutler-Hammer Eaton CLE, HLE and HCL fuses. HLE Type Current Limiting Fuses 15.5kV. Reference: TC70548507 TC70548607
- EATON.RLY
 - Eaton Type T Silver Fuse Link. DOC NO. TC132002EN
- GE.RLY
 - GE Fuse: EJO-1, 28.5kV. Size C, D, DD. Reference No: GES-8114, GES8115
- HI_TECH.RLY
 - Trans-Guard OS Shorty 17.2kV Oil submersible back-up current-limiting fuse Catalog #HTSS142. Publication #FC-20a
- LITTLELFUSE.RLY
 - Littlelfuse POWR-GARD Products. Class J JLS Series Fuses. Voltage Rating: 600V. Rev.: 062617
- MERSEN.RLY
 - Mersen AMP-TRAP Class L fuse. CAT. NO. A4BY (AMP RATING). Rated Voltage: 600V
 - o Mersen Medium Voltage OSP Shortie. Control No.: 2098. Rev.: D. Folder No.: 56
- SIBA.RLY
 - Siba URS Fuse Size: SQB4. Class: aR. Rated Voltage: 690V
- S&C.RLY
 - S&C Trip Saver II cutout mounted recloser

New and Updated Distance Relay Type

• Generator Relay SEL-300G with transformer compensation logic

Bug fixes between Versions 15.6 and 15.7

- Fixed the File comparison scope logic to take into account value of zero in the zone, area and bus number.
- Fixed a flaw in the OlxAPI concurrency license checking logic, which prevented OlxAPI applications from making use of multiple seat license in a network key.
- Fixed a flaw in the HLNet license key logic which caused unexpected program behavior in the local access mode.
- Bug fix in the special color display logic: no color should be displayed when Black and White mode is active.
- Bug fix in the Data Browser edit logic: Hidden data columns must be taken into account.
- Bug fix in the copy/paste and import logic for DT element directional flag.
- Cosmetic fix in the CIR dialog boxes.
- Memory bug fix in the DS relay import logic.
- Bug fix in the fault locator signal viewer scroll logic.
- Fixed bug in the OlxAPI engine logic for Cx_nTMultAppl data tokens.
- Fixed bug in the FLT file logic to correctly handle cases where referenced equipment is not in service.
- Fixed a bug in OIxAPI OLR file read logic for updating curve data to match the extrapolate to x1 pickup flag
- Bug fix in the typical X/R of reactor (fXR4) logic
- Bug fix in the relay checking parameters load from file logic.
- Cosmetic fix in the breaker dialog box
- Fixed non-dot decimal point logic in: Data browser edit mode, ground current calculator, phasor excel link.
- Enhanced responsiveness of the phasor probe option screen
- Bug fix in OIxAPI fault simulation
- Bug fix in the OC window command trial adjustment for OCG relay located on transformer tertiary.
- Bug fix in the File | Save copy for new study date command.
- Fixed a bug in ADX logic to avoid creating bus with both VCCS and GenWx, which is a data anomaly.
- Bug fix in PSS/E export: Replace cc code 18 with 21 for autotransformer
- Bug fix in the fault locator API.
- Bug fix in the GetObjGUID() API
- Bug fix in the SetShuntParam() API
- Bug fix in the SetData() API logic for TOK_RDB_OC_DIR
- Bug fix in the read file logic for UDF template
- Bug fix in the OLX read cDelimiter logic
- Bug fix in the SetData API for the bus object
- Bug fix in CHF file Change Bus Name logic
- Bug fix in the GetRelayTime() API logic
- Cosmetic fix in PRC023 checking CSV report

- Bug fix in the scripting engine API GetEquipment() and GetSCCurrent() for GenWx and VCCS objects.
- Bug fix in the CHF file logic for deleting device.
- Cosmetic correction in the Case builder file processing logic
- Bug fix in On/OffDate validation logic
- Bug fix in Data browser edit mode
- Bug fix in the fault simulation logic to avoid program crash in network having large number of VCCS with voltage measurement on grid side bus of the GSU.
- Bug fix in Type-3 wind generator pre-fault calculation
- Bug fix in the read logic for Type-3 wind generator
- Bug fix in the import network logic
- Fixed bug in the file comparison logic for 2-winding transformer and LTC

OneLiner Version and Build numbers

OneLiner's version number consists of two integers separated by a period. The program build number is a single integer. The *OneLiner*'s "Help | About this program" dialog box in the picture below shows version V15.6 Build 23400.

ASPEN OneLiner and Power Flow			
ASP Prod	EN OneLiner and Pov Juction Version	wer Flow <mark>V15.6 Wit</mark> h Breaker Rating Build: 23400 (2022.07.21)	Software Update
Access Sentinel sector of HL-Net key S/N B518 Key Info			

Major version number, 15 in the above example, is incremented between major software releases, when major changes in program features, network and relay models happen.

Minor version number, 6 in the above example, is incremented between maintenance software releases. Maintenance releases consist of mostly fixes for software bugs, and also some new and enhanced program features. However no new parameters are introduced for any network or relay objects in maintenance releases. *This means that the OLR data files generated by OneLiner releases having the same major version number are 100% compatible.*

ASPEN regularly creates new builds of the program with fixes for software bugs when they are found and makes them available to users on demand. Both major and minor version numbers are kept unchanged in these builds. Only program build number, 23400 in the above example, is incremented.

Backward and Forward OLR files compatibility between major version releases

Backward compatibility: *OneLiner* can read olr data files generated by previous versions (3.1 or later) with no loss of information. Version 3.1 was released in 1990.

Forward compatibility: *OneLiner* can read olr files generated by future versions. For example, *OneLiner* V14 can read olr files generated by V15, except new objects and new parameters not available in V14 will be omitted by the V14's read-file logic.

Backward and Forward Compatibility of DXT files

Text data files with extension DXT were intended to be a medium of data transfer between data conversion programs and *OneLiner* of the same major version. Due to popular demand, *OneLiner* V15 can read DXT files generated by *OneLiner* v14. This is the only exception.