

# **ApplinX User Guide**

## **Release Notes**

Version 10.15

October 2022

This document applies to ApplinX Version 10.15 and all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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## About this Documentation

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## Document Conventions

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Convention	Description
<b>Bold</b>	Identifies elements on a screen.
Monospace font	Identifies service names and locations in the format <i>folder.subfolder.service</i> , APIs, Java classes, methods, properties.
<i>Italic</i>	Identifies:  Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
Monospace font	Identifies:  Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the   symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

## Online Information and Support

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### Product Documentation

You can find the product documentation on our documentation website at <https://documentation.softwareag.com>.

In addition, you can also access the cloud product documentation via <https://www.software-ag.cloud>. Navigate to the desired product and then, depending on your solution, go to “Developer Center”, “User Center” or “Documentation”.

### Product Training

You can find helpful product training material on our Learning Portal at <https://knowledge.softwareag.com>.

## Tech Community

You can collaborate with Software AG experts on our Tech Community website at <https://tech-community.softwareag.com>. From here you can, for example:

- Browse through our vast knowledge base.
- Ask questions and find answers in our discussion forums.
- Get the latest Software AG news and announcements.
- Explore our communities.
- Go to our public GitHub and Docker repositories at <https://github.com/softwareag> and <https://hub.docker.com/publishers/softwareag> and discover additional Software AG resources.

## Product Support

Support for Software AG products is provided to licensed customers via our Empower Portal at <https://empower.softwareag.com>. Many services on this portal require that you have an account. If you do not yet have one, you can request it at <https://empower.softwareag.com/register>. Once you have an account, you can, for example:

- Download products, updates and fixes.
- Search the Knowledge Center for technical information and tips.
- Subscribe to early warnings and critical alerts.
- Open and update support incidents.
- Add product feature requests.

## Data Protection

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Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.





## 2 Release Notes

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## What's New in Release 10.15

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- [Increased Platform Support](#)
- [Java Version 11 Support](#)
- [Docker Enhancements](#)
- [SSL Enhancements](#)

### Increased Platform Support

ApplinX now supports the following additional platforms:

- **Windows**  
Windows 11 and Windows Server 2022
- **Linux**  
Red Hat 9

### Java Version 11 Support

ApplinX now fully supports Java Version 11 (runtime and compile time).

### Docker Enhancements

Building a Docker image for ApplinX has been improved. See *Building and Running the ApplinX Docker Image*.

### SSL Enhancements

SSL handling for ApplinX has been improved. When you configure an ApplinX server and check the **Secured Port** check box, you can now upload an SSL server certificate. See Secured port in the Administration documentation.

See also note on using self-signed certificate in *Appendix B: Security in ApplinX*.

## What was New in Release 10.11

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- [Default Password Handling](#)
- [License Handling](#)
- [REST API Enhancements](#)
- [Security Enhancement](#)

- [Other Changes and Enhancements](#)

## Default Password Handling

For greater security, default password handling has been enhanced for Software AG products that are installed with the SAG Installer. On the **Administrator Password** panel, enter a default product administrator password for the products you are installing, and choose whether to require the password to be changed on first product login. See *Defining Passwords* in the ApplinX Administration documentation for details.



**Note:** If you are migrating from a previous install base, the password of this previous version applies, regardless of what you specify in the **Administrator Password** panel. We recommend you change this password as soon as possible.

## License Handling

- **Expiration**

For ApplinX licenses of type subscription or test, a daily message in server log will appear if there are less than 60 days to expiration date. In earlier ApplinX versions, this value was 8 days. See ApplinX License Keys for more information.

- **Enhanced Support**

With an Emergency License Key, Software AG Support is now able to offer immediate help to customers if they suffer from license key issues, until the problem has been identified.

## REST API Enhancements

You can now generate a page in Angular, and also execute a procedure (stateless or stateful) using the ApplinX REST APIs.

## Security Enhancement

Improvements to the existing hotfix script mean you can now update or replace a JAR file, making it easier to address security vulnerabilities.

## Other Changes and Enhancements

- **Japanese Composition Mode**

Japanese composition mode is now supported.

- **Supported Microsoft Visual Studio Versions**

ApplinX now supports Visual Studio 2019 in addition to 2017. Visual Studio 2015 is no longer supported.

**■ Eclipse Support in Designer**

ApplinX now supports Eclipse version 4.19 provided by the webMethods suite.

**■ Azul Support**

ApplinX runtime now supports Azul Java 11.

## What was New in Release 10.7

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**■ Deprecation of Solaris v.11.3**

The original provider of the operating system Solaris (Oracle) strongly recommends to upgrade from version 11.3 to 11.4 as of now. In order to provide for enough time for Software AG customers to react to the upgrade policy of Oracle for Solaris versions after v.11.3, production environments based on Software AG products of this October 2020 release will in general continue to work without the immediate need to upgrade. However, Software AG customer support will only handle issues for Software AG products that can be reproduced in a Solaris v.11.4 environment. All newer versions of Software AG products AFTER the October 2020 release will no longer work with Solaris v.11.3.

Software AG therefore strongly recommends to address necessary migration steps timely.

**■ Support of Natural-IO Protocol**

ApplinX support of the Natural-IO protocol enables you to create an SSL connection to a Natural Linux host without the need of a third-party component. See *Support of Natural-IO Protocol* under *Reference Guide > Appendix C - Natural for Linux and Cloud Installation*.

**■ New Host Key Pattern**

The new pattern, **TWO LINES**, is similar to the existing Natural patterns logic but is more customizable and allows you to change or add host keys and captions. See *Using Customizable Host Key Pattern TWO LINES*.

**■ Automatic Load of ApplinX Server deployed as WAR**

When you deploy an ApplinX Server as a Java Web Archive (WAR) in the application server, the web services defined in the application are now loaded automatically. (In earlier versions of ApplinX these services were not available until the application was first accessed.)

See *Deploying ApplinX Server as a WAR File (Java Web Archive)*.

**■ Web Services Stack**

The Web Services Stack is now always enabled. The option to disable WS-Stack is no longer provided.

- If you are using a SOA-based license, both the procedure group and the administrative web services are deployed.
- If you are using a web-based license, only the administrative web services are deployed.

See *Deploying a Procedure Group to WS-Stack*.

### ■ **Natural Screen Tester**

- The Software AG product Natural Screen Tester has now been incorporated in ApplinX. See *First Steps - Unit Test*.

### ■ **Administration using Batch Commands**

You can now perform various administration tasks from a command line using the tool `gxadminconsole.sh` (UNIX) or `gxadminconsole.bat` (Windows) in the ApplinX utilities folder. See *Administration using a Batch File*.

### ■ **ApplinX REST API**

You can now create and disconnect a session, and also get and update a screen using the ApplinX REST API. See *ApplinX REST API*.

### ■ **Printing with BaseObject API**

New classes in the ApplinX BaseObject API provides an additional means of activating a mainframe or AS/400 printer session. See *BaseObject API* under *Printing* in the Web Application Development documentation.

### ■ **ActiveX Support Dropped**

ActiveX technology is no longer supported by ApplinX. Features that relied on this technology have been reworked if necessary. See for example `Support type ahead` under *Emulation* in section *Web Application Configuration Parameters*.

### ■ **Doc Enhancements**

The documentation describing log files in ApplinX has been thoroughly reworked. See *Log Files in ApplinX*.

## What was New in Release 10.5

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### ■ **ApplinX Web Emulator as Part of the ApplinX Docker Image**

- The ApplinX docker image now contains an ApplinX web emulation. Here you can configure host connectivity and various application settings within the browser. In previous versions this was only possible using ApplinX Designer. See also recording



### ■ **Administration Improvements for the Natural-UNIX Host**

#### ■ **Better Correlation between the ApplinX Session and the Natural Process**

It is now easier to track the ApplinX session ID for a NATAPX process within the Natural environment, and the Natural user used by an ApplinX session within the ApplinX Administrator.

See also recording



### ■ **Health Check in a Docker Environment**

A utility is provided to check that all components (ApplinX server, ApplinX Natural daemon, Natural, Adabas) are functioning in a Docker environment. See *Building an ApplinX Docker Image*.

### ■ **Customized Startup of Natural Applications**

When you start a Natural application in ApplinX you can now specify additional information using the `CUSTOM` argument. See *Starting a New Natural Application*.

### ■ **Security Support under Natural for Linux and Cloud**

The following security models are supported in a Natural Linux environment:


- System.
- PAM. You can now configure PAM authentication (for LDAP/Kerberos integration) within the ApplinX Natural daemon.

See Authentication under *Configuration Files* in the *Appendix C: Natural for Linux and Cloud Installation*.

See also recording



### ■ **Copy Session ID**

- The ApplinX session ID is visible in the Administrator session view. You can copy this ID to your clipboard with CTRL+C, the context menu or by pressing the Copy icon .

### ■ **New Platform Support**

- Visual Studio 2017
- Designer plug-in environment based on Eclipse 4.11
- Log4J version 2.x

### ■ **Documentation**

- New section on setting up your ApplinX environment for High Availability with container orchestration has been added. See *High Availability with Container Orchestration*.

## What was New in Release 10.4

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### ■ Font Size

You can now determine the font size to be used in the web application for each screen resolution. With class `GXBasicContext.java` (or `GXBasicWebForm.cs` in .NET application) you can add a method called `getColumnMappingPerResolution` where you can create a map for font size per resolution and number of columns of the screen. See *Determining Font Size per Resolution and Number of Columns*.

### ■ Other

Various bug fixing and usability enhancements.

## What was New in Release 10.3

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### ■ Docker Support

You can now build an ApplinX Docker image and run the Docker container using scripts provided with ApplinX. See *Building an ApplinX Docker Image* under *Getting Started*.

### ■ Customizing the Application to Pass Natural Parameters Dynamically

You can specify different parameters at runtime (for example NATPARM) depending on the business rule you choose. See *Customizing the Application to Pass Natural Parameters Dynamically* under *General Application Customization* in the *Web Application Development* documentation.

### ■ License Metering using Command Central

ApplinX now supports the license metering functionality provided by Command Central. License metering depends on license manifest files. Each license manifest file issued by Software AG contains all contracts for one location of your organization. If you received license manifest files from Software AG, you can generate or view a report of the current state of your landscape. For details see *Creating and Viewing License Metering Reports* in the Command Central Online Help.

## What was New in Release 10.2

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### ■ Sort Function for List of Field Mappings

You can sort the contents of a **List of Field Mappings** table by field name or by any other column. Click the header of the column by which you want to sort. The contents are sorted in ascending order. Click again to sort in descending order. This feature is useful when detecting duplicate field entries. The sort will be cancelled when you close the screen entity.

### ■ **Single Sign-on under AS/400**

ApplinX now supports a single sign-on using a Kerberos ticket on the platform AS/400. A corresponding start-up response code is given. See *Single Sign-on under AS/400* and *Start-up Response Record* in the *Reference Guide*.

### ■ **Other Changes and Enhancements**

- Pop-up window handling has been enhanced.
- Multiple usability enhancements have been made.

## What was New in Release 10.1

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### ■ **Support of Windows Server 2016**

ApplinX now supports the operating system Windows Server 2016. This includes support for the following:

- IIS 10
- .NET Framework 4.6

### ■ **Single Sign-on under AS/400**

ApplinX now supports a single sign-on using a Kerberos ticket on the platform AS/400. A corresponding start-up response code is given. See *Single Sign-on under AS/400* and *Start-up Response Record* in the *Reference Guide*. This functionality was provided with a fix after the original release of version 10.1.

## What was New in Release 10.0

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### ■ **Support of Visual Studio Version 2012 and 2015**

ApplinX now supports Visual Studio versions 2012 and 2015. Versions 2008 and 2010 are no longer supported. See ApplinX Visual Studio .NET Add-In.

### ■ **Exclude connection information sets when importing applications**

A new option is provided in the **Import Entities** wizard. This enables better transition from development to test and production environments. If you check **Do not overwrite existing Connection Information Sets**, you can import an application without its connection information sets. See *Importing an Application's Entities*.

### ■ **Enhanced Search Options in Software AG Designer**

In earlier ApplinX version you could search for entity names and referring entities, but it was not possible to search inside the entities themselves. With this version you can now search for the following components of each entity:

- Screens and screen groups
- Session data and date structure



- Path and flow procedures

See Searching Applications in the Software AG Designer under *Developing an ApplinX Application*.

- **Template Handling**

- Template handling when creating an ApplinX Web application has been streamlined. See *Creating an ApplinX Web Application*.
- Obsolete templates are no longer provided.

## What was New in Release 9.12

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- **Start/Stop Connection Pools from Designer**

You can now start and stop connection pools from the context menu of a selected pool in the Software AG Designer. See Managing Connection Pools.

- **Replacement for Print Applet**

Applet technology will soon be deprecated or no longer supported in new browser versions. An alternative for host printing is provided using Java Web Start technology. See To test HostPrint in the Web application under *Getting Started with the ApplinX Printer*.

- **Usability**

Usability has been enhanced throughout the product and a troubleshooting guide has been added. See Error Messages.

- **Documentation**

Multiple documentation enhancements have been made, for example High Availability.

## What was New in Release 9.10

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- **Platform certifications**

ApplinX now supports the following:

- **Java 8**

The ApplinX code now compiles with Java 8, which means that customers can use Java 8 syntax in their ApplinX web applications.

- **Windows 10**

The Windows 10 platform is now supported.

- **Eclipse 4.5**

The ApplinX Designer Eclipse is now version 4.5.

- **Microsoft Edge**

Microsoft's Edge browser is now supported.

- **Updating to CentraSite**

You can now update an ApplinX application to CentraSite; this updates the assets that were changed since last registration/update. See *Update the Application to CentraSite*.

- **Font Size**

The following changes have been made to font size handling in this version:

- Default font size for web application is 'Dynamic by resolution' instead of 13px.
- In the `fontSize` combo box in the Configuration and Emulation windows, you can select font size from 10-24px (10, 12, 14, 16... 24px). See *The HTML Emulation Toolbar*.
- In the `fontSize` combo box in the Emulation window, the new option 'Default' allows you to use the font size defined in Configuration. This is the default value in the Emulation window.

See *Enabling the User to Control the Font Size*.

- **Rebranding**

ApplinX product and documentation have been updated to match the new Software AG look-and-feel.

- **DocType**

Parameter `DocType` is no longer applicable for Framework Configuration - all pages now have the HTML5 doctype.

However, the option was retained in the configuration window for reasons of backward compatibility. You can remove this obsolete option if you prefer.

## What was New in Release 9.9

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- **Comparing ApplinX Applications**

With the new function **Compare Application...** you can compare two ApplinX applications, typically two versions of the same application. In terms of application lifecycle management, being able to compare two different versions means you can perform impact analysis before deploying a new application version. For example, before deploying to your production environment you can compare your current test application with the production version to see what changes were made, make sure the new application version is complete and that all the included changes were intentional.

See *Comparing Applications* under *Developing an ApplinX Application*.

- **Invoking a Procedure, Using REST**

In addition to SOAP, ApplinX web services can now be invoked using REST. From the Procedure Group Entity Editor, select a procedure and choose the new option **Copy REST URL to clipboard**. See *Invoking a Procedure, Using REST API* under *Web Services* in section *Designing and Developing an Application*.

### ■ Upgrade to Tomcat Server 8.0

The ApplinX internal Tomcat server is now version 8.0.

### ■ Improved Performance for Large Send Sections

Performance for large send sections (for example Natural Data Transfer upload or the AS/400 save state feature) has been improved.

### ■ Enter Key Recognition

A distinction is now made between the two **Enter** keys (on numeric keypad and the main keyboard). The following line has been added to the *keyboardMapping.XML* configuration file:

```
<GXKeyboardMapping additionalKey="0" keyCode="numpadENTER" ↵  
targetFunction="[Function]"/> ↵
```



**Note:** This applies only to the following browsers: Firefox 29 and above; Chrome; Internet Explorer 11.

See Keyboard Mapping under *Client Side (JavaScript)* in the *ApplinX Development API References*.

### ■ Improved Usability in Flow Mappers

Links now show source / target index expressions (if any exist). Double clicking anywhere on a link opens the link properties dialog (if the link can have properties). If a target index exists, "Append" is now off by default.

## What was New in Release 9.8

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### ■ New Look and Feel for Web Applications

- The look and feel of the new ApplinX Web applications has been enhanced, in particular for applications specifically designed for easier use on mobile devices:

ApplinX HTML Emulation - Google Chrome  
localhost:8080/gxemulationjsp/z\_container.jsp

**software** ApplinX Web Emulation Size: 16px Style: black

27/07/08 Modify Customer


Customer ID .... : 22  
 Lastname ..... : von Grueningen  
 Firstname ..... : Robert

Main data (screen 1 of 3)

Person type .... : I

Title ..... : Prof. Dr.

Date of birth .. : 08-Sep-1930

Sex ..... : 

Marital status .. :  
 Nationality .... :  
 Occupation ..... :  
 Status ..... :

Enter changes

Buttons: Quit, Conf, <, >, Enter

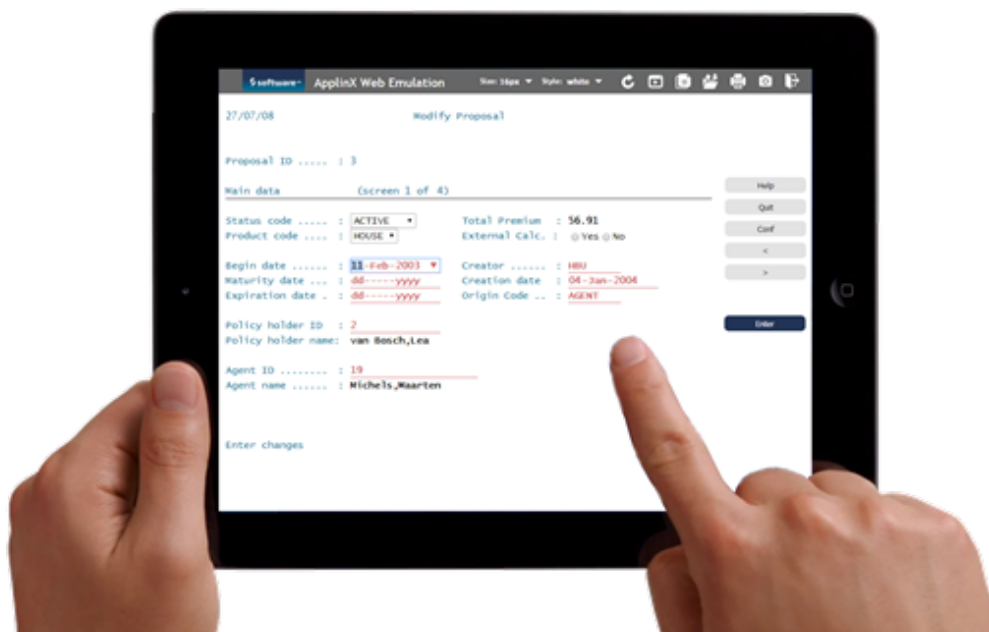
localhost:8080/gxnewjsp/: x  
localhost:8080/gxnewjsp/z\_container.jsp

**software** ApplinX Web Application

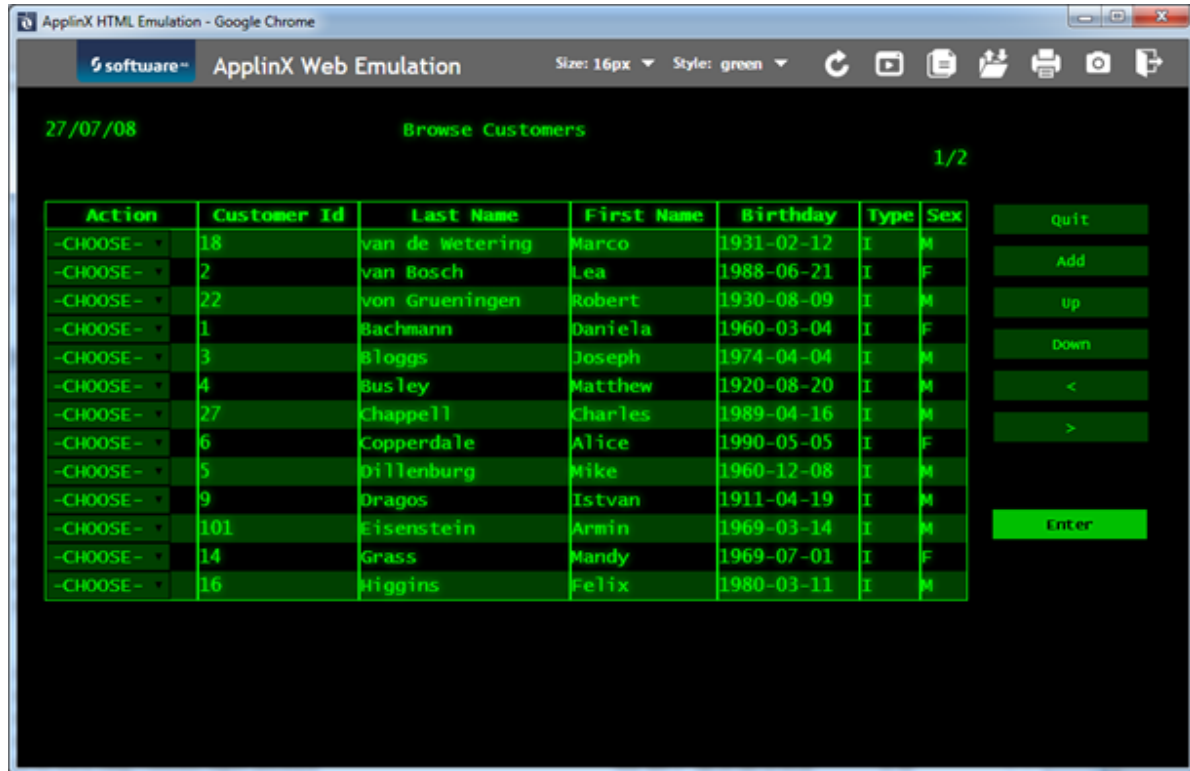
27/07/08 Browse Customers 1/2

Action	Customer Id	Last Name	First Name	Birthday	Type	Sex
-CHOOSE- ▼	18	van de Wetering	Marco	1931-02-12	I	M
-CHOOSE- ▼	2	van Bosch	Lea	1988-06-21	I	F
-CHOOSE- ▼	22	von Grueningen	Robert	1930-08-09	I	M
-CHOOSE- ▼	1	Bachmann	Daniela	1960-03-04	I	F
-CHOOSE- ▼	3	Bloggs	Joseph	1974-04-04	I	M
-CHOOSE- ▼	4	Busley	Matthew	1920-08-20	I	M
-CHOOSE- ▼	27	Chappell	Charles	1989-04-16	I	M
-CHOOSE- ▼	6	Copperdale	Alice	1990-05-05	I	F
-CHOOSE- ▼	5	Dillenburg	Mike	1960-12-08	I	M
-CHOOSE- ▼	9	Dragos	Istvan	1911-04-19	I	M
-CHOOSE- ▼	101	Eisenstein	Armin	1969-03-14	I	M
-CHOOSE- ▼	14	Grass	Mandy	1969-07-01	I	F
-CHOOSE- ▼	16	Higgins	Felix	1980-03-11	I	M

Buttons: Quit, Add, Up, Down, <, >, Enter



- The new Web applications can use HTML5 features such as the native calendar feature of the device where they are running. For example, if you are running on an iPad, you will get the native date picker control.
- A new "green" stylesheet for the Web emulation template has been added:



### ■ Usability Improvements

Creating new ApplinX applications has been simplified. You no longer need to define a repository, because the application now uses an internal one instead.

### ■ Performance Improvements

Performance has been improved. CPU usage has been optimized when using Natural host keys pattern, we have seen an average reduction of around 50 percent

### ■ Session Filtering

In the ApplinX Administrator you can now filter your sessions by Session ID, Application, Device Name, Duration, State, Connection Pool and Type. See *Filtering your Session* under *Current Activity* in the Administration documentation.

### ■ Detecting Use of ActiveX when Downloading a Natural File

When downloading a Natural file with method `gx_getNdtDefaultDownloadFileName` you can now use property `isUsingactiveX()`. This property indicates if the process is using ActiveX or not, and changes the logic accordingly.

### ■ Mobile Browser Support

ApplinX now supports mobile browsers, for example the Safari Browser. See Supported Browsers for full list.

### ■ **Checking Feature Support**

A new method `gx_isSupportedFeature` is provided on `GXBasicContext` (for Java) and `GXBasicWebForm` (for .NET) to indicate whether a particular feature is supported by the browser. Also, a new tag has been added to Java and .NET. See `gx_isSupportedFeature` for examples of using this method and the new tag.

### ■ **Modal Windows Support in Mobile Devices**

By default, modal windows are disabled for mobile devices such as iPad and iPhone. This behavior can now be overridden with the user exit `userExit.js`. See [Enabling Modal Windows for Mobile Devices](#).

## **ApplinX Supported Platforms**

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For a full list of platforms supported by ApplinX see *Product Version Availability* on the Empower website.

Software AG provides ApplinX support for the operating/teleprocessing system versions supported by their respective manufacturers. In general, when an operating/teleprocessing system provider stops supporting a version of an operating/teleprocessing system, Software AG will stop supporting that operating/teleprocessing system version.

