

# NaturalONE

## Release Notes

Version 9.3.3

October 2025

This document applies to NaturalONE Version 9.3.3 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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# Preface

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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>.

### Product Training

You can find helpful product training material on our Learning Portal at <https://learn.software-ag.com>.

### Tech Community

You can collaborate with Software GmbH 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 GmbH 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 GmbH resources.

## Product Support

Support for Software GmbH 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 About these Release Notes

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These *Release Notes* pertain to the core functionality of NaturalONE, including Natural for Ajax and Ajax Developer.

For important last-minute information, see the readme file that is provided with NaturalONE.



**Note:** The Release Notes for the NaturalONE components which can be installed optionally are provided separately. If available, they can be found in the documentation for the corresponding component.



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## What's New in Version 9.3.3

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## Environment

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As of this version, NaturalONE has become a self-contained plugin on top of the standard Eclipse. The installation no longer includes the Software AG Designer package as well as other packages that NaturalONE does not require. This reduces the approximate hardware requirements for a full installation from 3GB to 1,7 GB.



### Notes:

1. The installation path has changed: the directory */Designer* has been renamed to */naturalone*.
2. The Software AG Installer navigation tree is showing **NaturalONE** on top level.
3. NaturalONE is installed with Eclipse 4.34 and Java 21.
4. The deprecated Navigator view (ResourceNavigator), no longer supported with Eclipse 4.34, has been removed.
5. EntireX has become an IBM product and is no longer installed via the Software AG Installer. See *Installation > Installing NaturalONE > Installing EntireX* for more information.

## License Handling

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NaturalONE's license handling has changed. License checking has been moved from the NaturalONE Eclipse IDE to the NaturalONE local runtime or remote Natural Development Server.

For the local runtime, a NaturalONE license file must be available in the *common/conf* directory of the NaturalONE installation directory.

For the local runtime, the license file is copied either during installation, if specified, or afterwards via the **Local Runtime License** preference page (see *Using NaturalONE > Setting the Preferences > Local Runtime License*).

For a remote Natural Development Server on Windows, the NaturalONE license file must be available in the *common/conf* directory of the Natural Development Server installation directory.

For a remote Natural Development Server on Linux or z/OS, no additional NaturalONE license file is required besides the Natural licenses in the environment.

## Enhancements

---

This section describes new features and enhancements in NaturalONE's basic functionality for Natural application development.

It covers the following topics:

- [Natural Source Editor](#)
- [Natural Profiler - Resource Files from Natural Server](#)
- [Natural Profiler Preferences](#)
- [OIDC Authentication](#)
- [Code Generation - Defining User Exits - Generate a WRITE-FIELDS user exit](#)

### Natural Source Editor

When you select a DDM field with a hyperlink which is part of a view definition or database search, the DDM editor is now opened and the field is selected. For more information, see *Using NaturalONE > Using the Natural Editors > Using the Source Editor > Opening Referenced Objects and Jumping to Variable and Internal Subroutine Definitions*

### Natural Profiler - Resource Files from Natural Server

It is now possible to download a Natural Profiler resource file from the Natural Server to a Natural project and open it in the workspace.

For more information, see *Using NaturalONE > Using the Natural Profiler > Opening a Natural Profiler Resource File*.

### Natural Profiler Preferences

New Natural Profiler preferences have been introduced that allow the profiling overhead to be reduced, allowing for more accurate results.

For more information, see the description of the new **Advanced Options** in *Using NaturalONE > Setting the Preferences > Profiler*.

## OIDC Authentication

OpenID Connect (OIDC) authentication is now supported in NaturalONE for connecting to Natural Development Servers running on Linux. When enabled, authentication uses OIDC. The identity provider configuration is managed in the security preferences, and the token is obtained through the default browser authentication flow. For more information, see *Using NaturalONE > Setting the Preferences > Security*.

## Code Generation - Defining User Exits - Generate a WRITE-FIELDS user exit

The WRITE-FIELDS user exit has been enhanced to support the same functionality as with Natural Construct on Natural for Mainframes.

The enhancements include support for local and parameter data areas, which additionally can be selected on object selection lists.

For additional information, see *Code Generation > Defining User Exits > Generate a WRITE-FIELDS User Exit*.

## Natural for Ajax / Ajax Developer

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- [New Responsive Control BMOBILE:ACCORDION](#)
- [New Responsive Control BMOBILE:FILEDOWNLOAD](#)
- [New Responsive Control BMOBILE:FILEUPLOAD](#)
- [New Responsive Control BMOBILE:GRID](#)
- [New Responsive Sidebar Controls](#)
- [New Bootstrap 5 Support](#)
- [New BMOBILE:FTEXT Control](#)
- [New BMOBILE:THEMESWITCH Control](#)
- [New Properties for BMOBILE:CHECKBOX](#)
- [New Properties for BMOBILE:RADIOBUTTON](#)
- [Floating Label Support for Responsive Input Controls](#)
- [New statusmessage Property for Responsive Input Controls](#)



- [NEWSFEED Control Removed](#)

### **New Responsive Control BMOBILE:ACCORDION**

BMOBILE:ACCORDION is a responsive grid control which supports organizing content into expandable accordion items, each toggled by clicking its header. As content, you can show arbitrary controls and containers. For details, see BMOBILE:ACCORDION.

### **New Responsive Control BMOBILE:FILEDOWNLOAD**

BMOBILE:FILEDOWNLOAD is a responsive media control which supports downloading a document from the Natural server when a button or link is clicked. For details, see BMOBILE:FILE-DOWNLOAD.

### **New Responsive Control BMOBILE:FILEUPLOAD**

BMOBILE:FILEUPLOAD is a responsive control for uploading all kinds of files from the client to the Natural server. It supports drag-and-drop and a browse dialog for a smoother, more modern user experience. For details, see BMOBILE:FILEUPLOAD.

### **New Responsive Control BMOBILE:GRID**

BMOBILE:GRID is a responsive grid control in which you can use input controls such as BMOBILE:FFIELD and BMOBILE:CHECKBOX. It also supports advanced features such as export functionality, filtering columns, and freezing columns to the left and right. For details, see BMOBILE:GRID.

### **New Responsive Sidebar Controls**

The new controls BMOBILE:OFFCANVAS, BMOBILE:OFFCANVASHEADER, BMOBILE:OFFCANVASBODY, BMOBILE:DYNCANVAS and BMOBILE:NAVMENU2 can be used to implement modern sidebars. These controls allow you to integrate contextual details and dynamic navigation without disrupting the main content of your pages. For details, see BMOBILE:OFFCANVAS, BMOBILE:DYNCANVAS, and BMOBILE:NAVMENU2.

### **New Bootstrap 5 Support**

Now Bootstrap 5 is also supported. For details and migration see section Bootstrap 4 and 5.

### **New BMOBILE:FTEXT Control**

A new form text control to show additional information related to form fields. See section [BMOBILE:FTEXT](#).

### **New BMOBILE:THEMESWITCH Control**

This control supports switching dynamically between dark and light mode at runtime for all Ajax pages of your web application. See section [BMOBILE:THEMESWITCH](#).

### **New Properties for BMOBILE:CHECKBOX**

Responsive checkboxes can now be rendered reverse and as toggle button. See section [BMOBILE:CHECKBOX](#).

### **New Properties for BMOBILE:RADIOBUTTON**

Responsive radio buttons can now be rendered reverse. See section [BMOBILE:RADIOBUTTON](#).

### **Floating Label Support for Responsive Input Controls**

All input controls now support floating labels. A floating label is a label that moves above the input field when the user clicks on, or types into the field.

### **New statusmessage Property for Responsive Input Controls**

The new `statusmessage` property supports display of additional help texts with specific rendering, depending automatically on the `statusprop` value.

### **NEWSFEED Control Removed**

The deprecated NEWSFEED control has been removed from the product.

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## What's New in Version 9.3.2

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## Enhancements

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This section describes new features and enhancements in NaturalONE's basic functionality for Natural application development.

It covers the following topics:

- [Natural Server Search](#)
- [Extended object properties in Server View](#)
- [Debug Attach Server Available on Linux](#)
- [SSL/TLS Security for Debug Attach Server](#)
- [Deployment](#)
- [Editing a Filter or Filter Pattern for the Natural Server View](#)
- [Downloading an Existing Library or Object from a Natural Server](#)
- [Collapse All Structures in Outline View](#)
- [Status Information of Natural Server](#)
- [Libraries with different Fuser in NSC can now be handled in one project](#)
- [Monitoring and Modifying Variables Using the Eclipse Memory View](#)
- [Changing the Value of Variables from the Editor Area](#)

### Natural Server Search

A full blown search functionality is now available for the Natural Development servers integrated into the Eclipse search framework. Search requests such as file search, text search either with and without replacements, as well as resource search can be executed.

### Extended object properties in Server View

Extended object properties are displayed when you open the properties dialog of a Natural object in the Natural Server view. The properties displayed vary depending on the connected server platform (Mainframe or Linux) and the selected Natural object type.

The prerequisite for displaying the extended properties is the connection to an NDV server/NSC 9.2.3 or higher on the mainframe and 9.3.2 or higher on Open Systems.

## **Debug Attach Server Available on Linux**

The debug attach server is now available on Linux. The binary is delivered with the Natural for Linux installation.

For more information about using the debug attach server, see *Using NaturalONE > Using the Debugger > Using a Debug Attach Server*.

## **SSL/TLS Security for Debug Attach Server**

You can now start the debug attach server with SSL/TLS security. You can enable the SSL/TLS security in the Natural-specific preferences.

For more information about using the debug attach server with SSL/TLS, see *Using NaturalONE > Using the Debugger > Using a Debug Attach Server*.

## **Deployment**

The deployment procedure now can process user exits.

See *User Exits* in *Using NaturalONE > Deploying Natural Applications > Using the Deployment Wizard for Natural Applications*.

## **Editing a Filter or Filter Pattern for the Natural Server View**

When defining filters for the Natural server view, it is now possible to edit existing filters and filter patterns.

For further information, see *Filtering Libraries and Objects* in *Using NaturalONE > Working with Natural Objects in Natural Server Mode > Accessing a Remote Development Environment*.

## **Downloading an Existing Library or Object from a Natural Server**

When downloading a library from the Natural server into the workspace but any of the selected objects already exist in the workspace, you can choose to skip all the duplicate objects with the new "No to All" option. "No to All" skips all existing objects in the library and adds only the new objects without any further user interaction.

For more information about downloading Natural libraries and objects from a Natural server, see *Downloading an Existing Library or Object from a Natural Server*.

## **Collapse All Structures in Outline View**

You can now collapse all structures with the "collapse all" icon in the **Outline** view of the Natural Source editor, Map editor, and DDM editor.

## **Status Information of Natural Server**

You can now see the error and warning information about a selected node in the **Natural Server** view in the status bar of the NaturalONE perspective.

## **Libraries with different Fuser in NSC can now be handled in one project**

With Natural Security it is possible to define a Fuser for a library, which differs to the main Fuser. Up to now it was not possible to add such a library to a project, which has been created for other libraries on the main Fuser.

The following functionalities are added with the new NaturalONE version:

- The Fuser of a library is retrieved from the secured server when the library is added to a project.
- The library properties dialog will show the library's Fuser on the 'Natural > Security' page.

Moreover, the current Fuser of a library is also retrieved with the 'NaturalONE > Update Library Properties from Server' context menu of the library node.

This functionality requires at least NDV server/NSC 9.3.2 on Open Systems and 9.2.3 on Mainframe.

## **Monitoring and Modifying Variables Using the Eclipse Memory View**

You can now use the newly-supported Eclipse Memory View while debugging Natural applications.

The Eclipse Memory View enables you to monitor the values of variables in Memory View. The complete value of variables is displayed in hexadecimal representation, which is useful for large variables of the type A, B, or U. You can also modify variable chunks or add renderings to see values in ASCII or Unicode.

For more information, see *Using the Debug Perspective* in section *Using NaturalONE*.

## Changing the Value of Variables from the Editor Area

Now you are able to change the value of a variable from the Editor Area. To do this, place the cursor on the variable name, which you want to modify, invoke the context menu, and choose **Change Value**.

## Natural for Ajax / Ajax Developer

- Customization of Century Completion during Date Input
- Editing enhancements for ROWTABAREA, BMOBILE:TABPANE, and BMOBILE:VERTICALTABPANE
- Modernized Administration and Configuration Tools
- flushmethod in FIELD Control now supports JavaScript
- BMOBILE:ICON now supports popovers
- Enhanced error marking for BMOBILE:FIELD
- New version of Bootstrap Icons
- XCIPOPUPMENU Control: Field originatorquery has been removed
- BMOBILE:DROPDOWN and BMOBILE:DROPDOWNLIST now support Icons
- Responsive Contextmenus and Dynamic Menus Supported
- Enhanced Support for Bootstrap Icons
- BMOBILE:ALERT: New Property onclosemethod
- Single Sign-On (SSO) with OpenID Connect
- RCHART and RPIECHART Controls - chartjs 4.4.3
- New Ajax Configuration Parameter resetstatuspropfocus
- TEXT Control: New Property autowordwrap

### Customization of Century Completion during Date Input

When entering date input values, the automatic century completion can be customized. See the new *cisconfig.xml* setting `completedateinputrange`.

### Editing enhancements for ROWTABAREA, BMOBILE:TABPANE, and BMOBILE:VERTICALTABPANE

When editing the controls ROWTABAREA, BMOBILE:TABPANE, and BMOBILE:VERTICALTABPANE, Layout Painter now remembers the current tab when saving changes.

## **Modernized Administration and Configuration Tools**

The tools for administration and configuration of Natural for Ajax applications are modernized. The new package called "Runtime Tools" now contains the tools for Session configuration, Logging configuration, Monitoring, and a new Ajax Configuration Editor to edit `cisconfig.xml` settings.

### **flushmethod in FIELD Control now supports JavaScript**

Now you can also apply a JavaScript function as `flushmethod` in the FIELD Control.

### **BMOBILE:ICON now supports popovers**

Use the new property `popovertextid` and the new css classes `helpicon` and `helpicon-svg` to open popovers. See the *NaturalAjaxDemos* for samples.

### **Enhanced error marking for BMOBILE:FIELD**

The error marking of BMOBILE:FIELD in case of a wrong input has been enhanced. You can now mark the container of the input field as an error. See the *NaturalAjaxDemos* for samples.

### **New version of Bootstrap Icons**

More than 100 new icons available.

### **XCIPOPUPMENU Control: Field originatorquery has been removed**

The field `originatorquery` is not generated for the XCIPOPUPMENU anymore.

### **BMOBILE:DROPDOWN and BMOBILE:DROPDOWNLIST now support Icons**

Use the new properties `icon/iconprop` and `withicon` to add icons to your dropdowns. See the *NaturalAjaxDemos* for samples.

### **Responsive Contextmenus and Dynamic Menus Supported**

The XCIOPENPOPUP control is now also supported in responsive pages. It can be used to add right-click context menus or general dynamic menus with `button/icon` activation. See the *NaturalAjaxDemos* for examples.



**Enhanced Support for Bootstrap Icons**

In NaturalONE, you can now conveniently select an icon font and copy the corresponding html snippet to the Layout Painter editor or to your Natural editor. See chapter *Ajax Developer*.

**BMOBILE:ALERT: New Property `onclosemethod`**

You can now trigger an event in your Natural program when the end-user closes the alert.

**Single Sign-On (SSO) with OpenID Connect**

Natural for Ajax now supports single sign-on with OpenID Connect. For more information see *Configuring Single Sign-On (SSO)*

**RCHART and RPIECHART Controls - chartjs 4.4.3**

The chartjs version for RCHART and RPIECHART has been upgraded to chartjs 4.4.3. See the Migration Notes.

**New Ajax Configuration Parameter `resetstatuspropfocus`**

When using the statusprop values ERROR, FOCUS or FOCUS\_NO\_SELECT an automatic reset is now supported so that the focus setting is only set once. See Ajax Configuration.

**TEXT Control: New Property `autowordwrap`**

The TEXT control now supports the property `autowordwrap` in combination with `maxrowlength/maxrowlengthprop` and `maxrows/maxrowsprop`.



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## What's New in Version 9.3.1

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## Environment

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This section covers changes to prerequisites and requirements.

### Eclipse and Java Versions

The Eclipse and Java versions have been updated. NaturalONE 9.3.1 is released with Eclipse 4.25 and Azul Java version 17.

## Enhancements

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This section describes new features and enhancements in NaturalONE's basic functionality for Natural application development.

It covers the following topics:

- [Natural File Transfer for Linux](#)
- [DDM Editor](#)

### Natural File Transfer for Linux

NaturalONE now works as a client for Natural File Transfer for Linux. This includes support for the DOWNLOAD PC FILE and UPLOAD PC FILE statements. Additionally, to the basic download and upload functionality NaturalONE supports the 'SET PCFILE x DOWN/UP DATA' command clause.

### DDM Editor

- [Support for New SQL Databases](#)

### Support for New SQL Databases

Starting with Natural version 9.3, the MariaDB database type is supported. For more information about creating a DDM, see *Creating a DDM*.

## Basic Functionality for Natural Application Development

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- [TQMARK Parameter](#)
- [Changes in the Details View Columns](#)

### TQMARK Parameter

NaturalONE now supports the TQMARK parameter when parsing sources in the Natural source editor. If you are adding projects from an NDV server environment, the TQMARK parameter is also downloaded to the Natural project properties.

### Changes in the Details View Columns

The **Mode** and **Server Encoding** columns of the **Details** view of NaturalOne are no longer shown by default. These columns can be switched on and off by opening the **View** menu and toggling the menu items **Show Column Mode** and **Show Column Server Encoding**.

## Natural for Ajax / Ajax Developer

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- [Xalan Replaced by a New Implementation](#)
- [Using Private-mode Libraries in Workplaces](#)
- [Removed Controls: LINECHART, NETMEETING and SKYPECALL](#)
- [New Responsive Control BMOBILE:CARD](#)
- [BMOBILE:DATATREE: New Property openonselect](#)
- [New Responsive Control BMOBILE:LISTGROUP](#)
- [BMOBILE:SIMPLEGRID: Frozen Columns](#)
- [BMOBILE:SIMPLEGRID: Keyboard Focus](#)
- [BMOBILE:SIMPLEGRID: New Property triggersearchprop](#)
- [BMOBILE:SIMPLEGRID: New Property withkeyboardfocus](#)
- [ROWTABLEAREA2: Frozen Columns](#)
- [Support of custom dates in DATEINPUT2](#)
- [Bootstrap-Icons Upgraded to Version 1.10.5](#)
- [TAB Key for DISPLAY Input Controls](#)
- [Generation of Parameter Data Area Supported](#)
- [Enhanced Accessibility Support](#)

- [NaturalAjaxDemos with Search and Navigation](#)

## **Xalan Replaced by a New Implementation**

The 3rd party Xalan component is not part of the product anymore. It has been replaced by a new implementation that fully supports the functionality used in Natural for Ajax and NaturalONE. In case you have been using features beyond this functionality in your Java components and discover issues, you can switch on the original Xalan support via the setting `sdofullxpath` in *cisconfig.xml*. For details see General cisconfig.xml Parameters > `sdofullpath`.

## **Using Private-mode Libraries in Workplaces**

Using private-mode libraries in Workplace applications is now supported. For details see *Using Private-mode Libraries in Workplaces*

## **Removed Controls: LINECHART, NETMEETING and SKYPECALL**

The deprecated controls LINECHART, NETMEETING, and SKYPECALL have been removed from the product. Instead, use RCHART and RPIECHART for chart controls .

## **New Responsive Control BMOBILE:CARD**

BMOBILE:CARD ist a container control with options for headers, footers, images, text and more content. For details, see BMOBILE:CARD

## **BMOBILE:DATATREE: New Property openonselect**

Per default, tree nodes are opened when selecting the text of the corresponding node. Via the property `openonselect` you can customize this behavior. See BMOBILE:DATATREE.

## **New Responsive Control BMOBILE:LISTGROUP**

A list group displays a number of items as a vertical list. For details, see BMOBILE:LISTGROUP.

## **BMOBILE:SIMPLEGRID: Frozen Columns**

The responsive grid BMOBILE:SIMPLEGRID now supports to freeze columns to the left and to the right.

**BMOBILE:SIMPLEGRID: Keyboard Focus**

The responsive grid BMOBILE:SIMPLEGRID now supports keyboard navigation thru the single columns of the grid.

**BMOBILE:SIMPLEGRID: New Property triggersearchprop**

Via the new property `triggersearchprop`, you can now set search values and trigger a search from your Natural program. See BMOBILE:SIMPLEGRID.

**BMOBILE:SIMPLEGRID: New Property withkeyboardfocus**

Keyboard navigation for columns, rows and pages is now supported. Use the new property `withkeyboardfocus`. See BMOBILE:SIMPLEGRID.

**ROWTABLEAREA2: Frozen Columns**

ROWTABLEAREA2 with GRIDCOLHEADER controls now supports freezing columns to the left. The number of frozen columns can be defined at design time, or dynamically at runtime, and via click by the application's end-users. See section *ROWTABLEAREA2 - The Flexible Control Grid*

**Support of custom dates in DATEINPUT2**

DATEINPUT2 now supports special handling of custom dates. See *DATEINPUT2 – Custom Dates*

**Bootstrap-Icons Upgraded to Version 1.10.5**

Version 1.10.5 contains over 1800 icons.

**TAB Key for DISPLAY Input Controls**

The file *cisconfig.xml* now supports the new settings `displayallowtab`. Use this setting to configure whether tabbing into DISPLAY input controls is possible or not. See *Ajax Configuration* for details.

**Generation of Parameter Data Area Supported**

Optionally, you can now generate a Natural Parameter Data Area (PDA) for a layout. This PDA avoids manual updates of Local Data Areas in your Natural programs in case of layout changes.

The context is explained in *Natural Pages Development > Generating the Adapter*.

## **Enhanced Accessibility Support**

Many accessibility features have been added to the product, such as labels, language information, and roles. Corresponding samples are available in the NaturalAjaxDemos. See section *Accessibility*

## **NaturalAjaxDemos with Search and Navigation**

The NaturalAjaxDemos now come with search and navigation support to find and explore the samples.



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## What's New in Version 9.2.1

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## Security

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- [JDOM Removed](#)
- [Apache Log4j has been replaced with Apache Log4j 2](#)
- [Deletion of Natural Passwords](#)

### JDOM Removed

JDOM has been removed from the product.

### Apache Log4j has been replaced with Apache Log4j 2

For Code Generation the logging functionality is now based on Apache Log4j 2. For details, see *Code Generation > Using the Code Generation Component > Set Preferences > Set Logging Preferences*.

If you have any Natural Unit Test Ant scripts created with a previous NaturalONE version, you must migrate these scripts to the new format. For details, see *Application Testing > Creating Ant Scripts to Run Unit Tests > Migrate Existing Natural Unit Test Ant Scripts*.

When running Natural Unit Test Ant scripts from the Command Line, special requirements must be met. For details, see *Application Testing > Creating Ant Scripts to Run Unit Tests > Running the Natural Unit Test Ant Script from the Command Line*.

### Deletion of Natural Passwords

There is now a preference that the user can set which will cause all Natural passwords to be deleted from secure storage every time NaturalONE is shut down.

## Enhancements

---

This section describes new features and enhancements in NaturalONE's basic functionality for Natural application development.

It covers the following topics:

- [DDM Editor](#)

## DDM Editor

- [Additional Option for VSAM DDMs](#)
- [Support for New SQL Databases](#)

### Additional Option for VSAM DDMs

Starting with Natural Mainframe version 9.2, extended ISNs are supported for VSAM DDMs. A new file attribute `Extended file` can be specified for this purpose. See *Using the DDM Editor > About the DDM Editor > Properties View* for further information.

### Support for New SQL Databases

Starting with Natural Mainframe version 9.2, the MySQL and PostgreSQL SQL database types are supported. See *Using NaturalONE > Using the Natural Editors > Using the DDM Editor* for further information about creating a DDM.

## Basic Functionality for Natural Application Development

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- [List Natural Mainframe Libraries in the Natural Server View Using the Hyperdescriptor H2](#)

### List Natural Mainframe Libraries in the Natural Server View Using the Hyperdescriptor H2

When many libraries are available on the Natural system file, the listing of these objects in the Natural Server view can take a long time. Starting from Natural for Mainframes version 9.2.1 on z/OS, a new hyperdescriptor H2 is provided to significantly improve the database access required for this purpose.

See *NaturalONE in a Nutshell > Performance Aspects > Improve Mainframe Access* for further information about the available hyperdescriptors.

## Natural for Ajax / Ajax Developer

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- [Java 11 Required](#)
- [Support for Tomcat10 and JBoss EAP](#)
- [Long Username Support for Natural on Linux](#)
- [New Responsive Tutorial](#)
- [Customization of Whitespace handling for PDF Generation](#)
- [Layout Painter: Support for Responsive Style Classes](#)

- DATEINPUT2 and BMOBILE:DATEINPUT2: new properties serverformat, clientformat, firstdayinweek
- FIELD: new property placeholder
- ROWTABLEAREA2: Export of Headers
- TEXTGRIDSS2: new property cursormgtprop
- Customization of Responsive Style via SASS now Supported
- New Ajax Configuration Parameter notifyparentonpopupclosed
- Support PROCESS PAGE MODAL in Responsive Pages
- New Responsive Control: BMOBILE:DATATREE
- Support for <ctrl><enter> in BUTTON controls
- Removal of Deprecated Controls: BMOBILE:SIDENAV, BMOBILE:NAVTREE, BMOBILE:SIDENAV-CONTENT
- NEWSFEED Control Deprecated
- Using Bootstrap 3 is Deprecated
- Deprecated: SWT Preview in Layout Painter
- Dependencies View now supported for Ajax Layouts
- New Configuration Settings for Natural for Ajax Updates

## Java 11 Required

Java 11 is now required for development and production environments.

## Support for Tomcat10 and JBoss EAP

Tomcat10 and JBoss EAP are now supported

## Long Username Support for Natural on Linux

Long usernames support of Natural on Linux can now be used with Natural for Ajax.

## New Responsive Tutorial

A responsive tutorial to develop a responsive mini-application is available. See First Steps Responsive Pages.

## Customization of Whitespace handling for PDF Generation

You can now customize the whitespace handling in CISFO:\* and REPORT\* controls. For more information see the chapter *Working with PDF Documents > Advanced Data Binding and Rendering > Whitespace Handling*.

## Layout Painter: Support for Responsive Style Classes

Layout Painter has extended the support for adding styleclasses on responsive pages. A corresponding dialog allows convenient selection among the most popular classes for a control. A help text explains the usage for each class.

## DATEINPUT2 and BMOBILE:DATEINPUT2: new properties serverformat, clientformat, firstdayinweek

As of this version, the client date format (Browser), the server date format (Natural), and the first day of the week, can be controlled via design-time properties.

All details are documented here:

Natural for Ajax > Working with Controls > DATEINPUT2 > Customizing Date and Calendar Formats

Natural for Ajax > Responsive Page Layout and Controls > BMOBILE:DATEINPUT2 > Customizing Date and Calendar Formats

## FIELD: new property placeholder

In FIELD controls you can now add an initial placeholder text.

See Natural for Ajax > Natural Page Layout > Working with Controls > FIELD.

## ROWTABLEAREA2: Export of Headers

Exporting the grid headers is now supported. It can be activated and deactivated dynamically. Refer to *Natural for Ajax > Working with Grids > ROWTABLEAREA2 - The Flexible Control Grid*.

## TEXTGRIDSSS2: new property cursormgtprop

You can now dynamically reset the keyboard cursor of the grid from within your Natural program.

## Customization of Responsive Style via SASS now Supported

You can now easily customize your responsive style via SASS variables. See *Natural for Ajax > Responsive Natural Page Layout > Styling a Responsive Page*.

## **New Ajax Configuration Parameter `notifyparentonpopclosed`**

You can now customize whether or not a Natural program receives a "nat:page.default" event when a pop-up is closed. .

## **Support `PROCESS PAGE MODAL` in Responsive Pages**

Responsive pages now also support opening pop-ups dynamically via the Natural statement `PROCESS PAGE MODAL`. For details, see section *Natural for Ajax > Pop-Ups - Responsive Pages*.

## **New Responsive Control: `BMOBILE:DATATREE`**

The `BMOBILE:DATATREE` control is a responsive tree control, which supports levels deeper than 2 and dynamic loading of subtrees.

For details, see section *Natural for Ajax > Responsive Natural Page Layout > Responsive Controls*

## **Support for `<ctrl><enter>` in `BUTTON` controls**

Responsive and non-responsive `BUTTON` controls now support the activation via `<ctrl><enter>`. This can be switched on for all buttons on a page. See the `buttonctrlenter` property in the `NATPAGE` control.

This property can be switched on for all pages in the application. See the `buttonctrlenter` property in the `cisconfig.xml` file [!link](#).

## **Removal of Deprecated Controls: `BMOBILE:SIDENAV`, `BMOBILE:NAVTREE`, `BMOBILE:SIDENAVCONTENT`**

The deprecated controls `BMOBILE:SIDENAV`, `BMOBILE:NAVTREE`, and `BMOBILE:SIDENAVCONTENT` have been removed. Use `BMOBILE:SIDEBAR*`, `BMOBILE:HORIZONTALBAR`, `BMOBILE:CONTENT`, and the new `BMOBILE:DATATREE` control instead.

## **NEWSFEED Control Deprecated**

The `NEWSFEED` control is now deprecated. It requires `rome-0.9.jar`. The `rome-0.9.jar` is not packaged with Natural for Ajax anymore. The `rome-0.9.jar` uses JDOM

JDOM has been removed from Natural for Ajax.

## Using Bootstrap 3 is Deprecated

Responsive pages per default use Bootstrap 4. Using Bootstrap 3 in responsive pages is deprecated.

## Deprecated: SWT Preview in Layout Painter

The SWT preview in the Layout Painter has been deprecated. Use the HTML preview instead.

## Dependencies View now supported for Ajax Layouts

You can now easily switch between a Natural program and the corresponding Layout via the Dependencies View. For details, see *NaturalONE > Natural for Ajax > Developing the Application Code*.

## New Configuration Settings for Natural for Ajax Updates

Natural for Ajax Updates are now included in NaturalONE fixes. Configuration settings are available to customize whether:

- updates are always or never applied automatically
- corresponding message boxes are shown.

For details, see section *NaturalONE > Ajax Developer > Getting Started with Ajax Developer > Runtime Environment Updates*.





# 7

## What's New in Version 9.1.4

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## Security

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- [Long User Ids](#)
- [JDOM Vulnerability](#)

### Long User Ids

In order to support security systems such as LDAP it is now possible to add up to 32 characters in the User ID field of the Map Environment Dialog. If such a configuration is in place the entered 'Login-Id' will be mapped on the server side to the corresponding 8 Byte User Id. In all other scenarios the normal User Id must be entered.

### JDOM Vulnerability

The version of JDOM included in NaturalONE 9.1.4 contains the following vulnerability:

An XXE issue in SAXBuilder in JDOM through 2.0.6 allows attackers to cause a denial of service via a crafted HTTP request.

<https://nvd.nist.gov/vuln/detail/CVE-2021-33813>

Within NaturalONE the vulnerable functionality from jdom 2.0.6 has been disabled. There are no functional differences to be experienced by the user.

For users who are running Natural and Natural for Ajax on different machines we highly recommend securing the Natural screen exchange by setting "Use SSL" in the session configuration. A secure connection is then established between Natural for Ajax and the Natural Web I/O Interface server that prevents attackers from exploiting this vulnerability. For more information see the documentation of Natural for Ajax on [Empower](#), *Natural for Ajax > Release Notes > Security*.

## Enhancements

---

This section describes new features and enhancements in NaturalONE's basic functionality for Natural application development.

It covers the following topics:

- [Batch Model Support](#)

## Batch Model Support

NaturalONE now supports the Batch Model of Natural Construct Code Generation. It allows to generate standardized batch applications using the new menu item **BATCH** of the sub menu **Code Generation > New Using Construct Model**.

For further details, see *Code Generation > Natural Construct Generation > Batch Wizard*

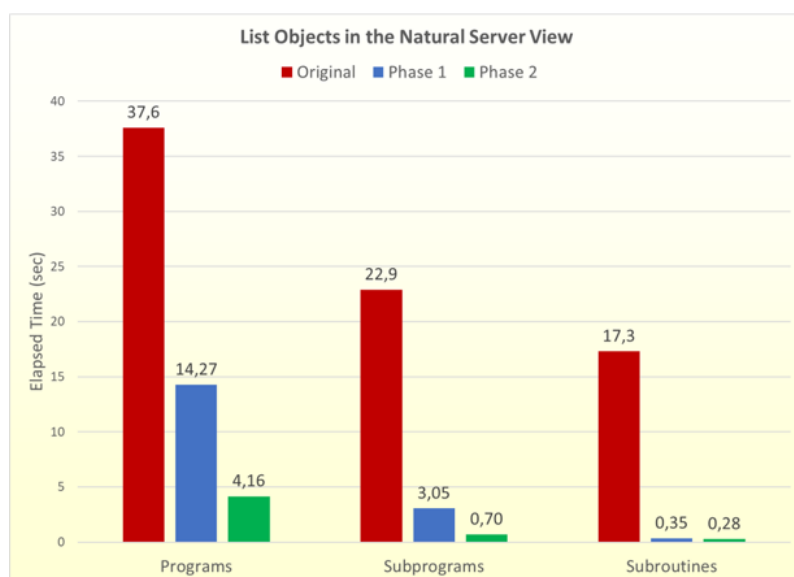
## Basic Functionality for Natural Application Development

- [List Natural Mainframe Objects in the Natural Server View Using the Hyperdescriptor](#)
- [List Natural Mainframe Objects in the Natural Server View Using Filters](#)

### List Natural Mainframe Objects in the Natural Server View Using the Hyperdescriptor

When a library contains a huge number of objects, listing these objects in the Natural Server view can take a long time. As of Natural for Mainframes version 9.1.2 on z/OS, a hyperdescriptor has been introduced that can significantly improve the database access required for this purpose (phase 1). As of NaturalONE version 9.1.4 and Natural for Mainframes version 9.1.2 CF4, the performance has been improved even further (phase 2).

The following image shows the elapsed times of the NDV server component. The library contains in total about 15,000 objects, including 10,000 programs, 1,500 subprograms, and 100 subroutines. Phase 1 and phase 2 use the hyperdescriptor.

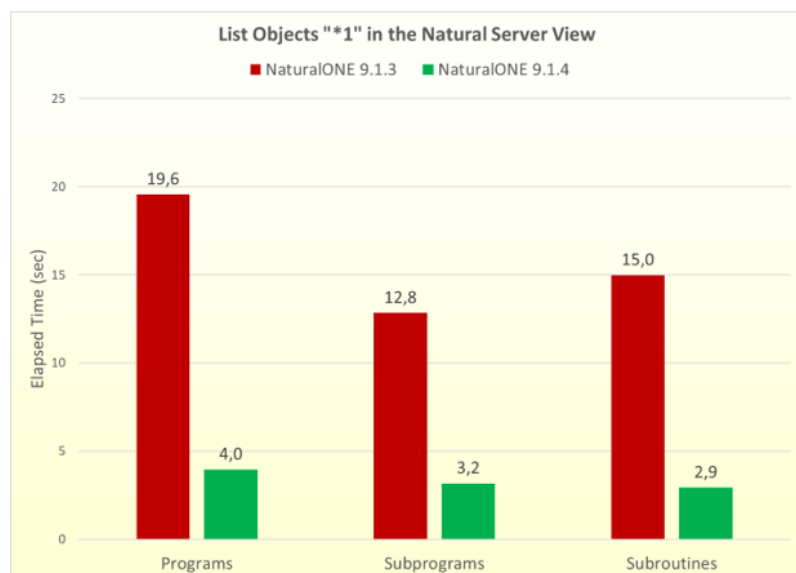


The installation of the hyperdescriptor is described in *NaturalONE in a Nutshell > Performance Aspects > Improve Mainframe Access*.

## List Natural Mainframe Objects in the Natural Server View Using Filters

In previous versions of NaturalONE a shorter response time could be achieved by using a filter with a fix prefix such as "A\*". With NaturalONE 9.1.4 any filter can be used to reduce the response time.

The following image shows a test of elapsed times for the NDV server component. The library contains a total of about 15,000 objects. The filter "\*1" lists all objects ending with "1", which delivers 705 of 10,000 programs, 101 of 1,500 subprograms, and 5 of 100 subroutines. For the subroutines, the long names must be determined, which also costs some time. Mind, this test was performed without using a hyperdescriptor. The reduction of elapsed time can be reduced even more by installing a hyperdescriptor.



## Changes to the UIs

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- [Project Explorer View](#)

- [Natural Navigator](#)

## Project Explorer View

In the Natural perspective, the deprecated Navigator view has been replaced by the Project Explorer view. The Project Explorer view supports all NaturalONE context menus and toolbar commands that were formerly supported by the Navigator view.

## Natural Navigator

The Natural Navigator view has been enhanced:

- The former 'character' tool bar buttons have been replaced with new icons
- The context menu items **Testing**, **Business Services** and **Code Generation** are now also available in the Natural Navigator view.

## Natural Tools and Utilities

---

This section describes new features and enhancements concerning Natural tools and utilities available in NaturalONE. It covers the following topics:

- [Natural Profiler Rich GUI](#)

### Natural Profiler Rich GUI

The Natural Tools and Utilities in NaturalONE offers a new rich GUI interface for the Natural Profiler. The Natural Profiler page lists all Profiler resources of a given library. For a selected Profiler resource, the properties and statistics of the profiling are displayed. Functions are available for consolidate or evaluate Profiler data, to analyze monitored programs, or to delete a resource file.

For more information, see *Using NaturalONE* > Using Natural Tools and Utilities > *Rich GUI Interface of the Natural Profiler*.

## Natural for Ajax / Ajax Developer

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- Edge Chromium Browser
- Bootstrap Icons Library
- New Responsive Controls: BMOBILE:COMBOFIX, BMOBILE:COMBODYN
- New Responsive Dropdown Controls
- Responsive Controls with new Properties straighttext
- Responsive Controls with new Properties titlestraighttext
- BMOBILE:SIMPLEGRID: Server-Side Scrolling and Sorting
- BMOBILE:FFIELD: new property withtogglepassword
- ITR with New Property inline
- REPORT and REPORT2 Controls with New Property nameprop

### Edge Chromium Browser

With this version of Natural for Ajax the Edge Chromium Browser is now supported.

### Bootstrap Icons Library

The Bootstrap Icons Library is now part of the Natural for AJAX product. It can be used in responsive and non-responsive controls in different ways. See section *Working with Icons*.

### New Responsive Controls: BMOBILE:COMBOFIX, BMOBILE:COMBODYN

The BMOBILE:COMBOFIX and BMOBILE:COMBODYN are light-weight selection controls.

For details, see section *Natural for Ajax > Responsive Natural Page Layout > Responsive Controls*

### New Responsive Dropdown Controls

The controls BMOBILE:DROPDOWN, BMOBILE:DROPDOWNLIST, BMOBILE:DROPDOWNHEADER, BMOBILE:DROPDOWNITEM, BMOBILE:DROPDOWNSEPARATOR support various dropdown functionality such as dropdown menus and dropdown forms.

For details, see section *Natural for Ajax > Responsive Natural Page Layout > Responsive Controls*

**Responsive Controls with new Properties straighttext**

All responsive controls with a `name/nameprop` property now also support a `straighttext` property. Via this property, the name value can be rendered either as html or as straight text.

**Responsive Controls with new Properties titlestraighttext**

All responsive controls with a `title/titleprop` property now also support a `titlestraighttext` property. Via this property, the tooltips can be rendered either as html or as straight text.

**BMOBILE:SIMPLEGRID: Server-Side Scrolling and Sorting**

The responsive grid `BMOBILE:SIMPLEGRID` now supports Server-Side Scrolling and Sorting.

**BMOBILE:FFIELD: new property withtogglepassword**

For password fields you can now add an icon to toggle the password visibility.

**ITR with New Property inline**

ITR controls now support inline rendering via the new `inline` property. This improves the rendering when zooming pages in Google Chrome or Edge Chromium browsers. See section *Natural for Ajax > Working with Containers> Positioning of Controls inside a Container > ITR in Google Chrome and Edge Chromium*.

**REPORT and REPORT2 Controls with New Property nameprop**

The REPORT and REPORT2 controls now also support to set the name dynamically at runtime via the property `nameprop`.





# 8

## What's New in Version 9.1.3

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## Installation

---

Software AG Designer 10.7, which includes NaturalONE, uses Eclipse Version 4.15. If you prefer to use NaturalONE in your existing Eclipse environment, see also *Using Your Own Eclipse* in the *Installation* documentation.

The selection of components during the installation has changed. For more information, see *Installing NaturalONE* in the *Installation* documentation.

### Deployment Package

After installing NaturalONE and applying all relevant fixes, you are now able to create a compressed package of NaturalONE for deployment on additional development stations. For more information, see *Preparing a Deployment Package* in the *Installation* documentation

## Basic Functionality for Natural Application Development

---

This section describes new features and enhancements in NaturalONE's basic functionality for Natural application development.

It covers the following topics:

- [DDMs in the Server View](#)
- [List Natural Mainframe Objects in the Natural Server View](#)
- [ECHECK](#)

### DDMs in the Server View

The preference **Display DDMs in library** is no longer available. Displaying DDMs in the Natural server view has been enhanced in the following way:

For Natural Development (NDV) servers which are protected with Natural Security, all DDMs which are accessible to the current user in a specific library are shown in a **DDMs** group node of this library, regardless of whether the DDMs are public or protected. The **DDMs** system file node is no longer available in this case.

If the NDV server is not protected with Natural Security, the DDMs will either be displayed below the DDMs system file (Mainframe server or servers with FDDM) or in the **DDMs** group node of the libraries (for Linux, or Windows environments without FDDM).

This new behavior is also described under *Working with DDMs* in section *Managing Objects Directly on a Natural Server*.

## List Natural Mainframe Objects in the Natural Server View

When a huge number of objects are contained in a library, the listing of these objects in the **Natural Server** view can take a long time. Natural for Mainframes Version 9.1.2 on z/OS provides a new hyperdescriptor that can significantly improve the database access required for this purpose. The installation of the hyperdescriptor is described in *Performance Aspects in NaturalONE in a Nutshell*.

## ECHECK

The `ECHECK` parameter is now supported in NaturalONE when parsing sources in the Natural source editor. When adding projects from an NDV server environment, the `ECHECK` parameter is also downloaded to the Natural project properties. This enhancement does currently not apply to NDV mainframe servers.

## Natural Tools and Utilities

---

This section describes new features and enhancements concerning Natural tools and utilities available in NaturalONE.

It covers the following topics:

- [Debugger](#)
- [Natural Profiler](#)
- [Natural Data Browser](#)

### Debugger

The debugger has been enhanced to show the complete value of a large or dynamic variable of the type A, U or B. See *Display Options* in *Setting the Preferences* and *Variables View* in *Debugging Natural Applications* for further information.

In order to provide the variable chunk support for large and dynamic variables, a Natural server change is necessary. This means that the functionality is only available with the most current versions of the Natural Development (NDV) servers on Linux and Windows that correspond to NaturalONE Version 9.1.3.

## Natural Profiler

A new drop-down list box which is shown at the top of the **Hot Spots** page allows switching between different built-in display layouts. See *Viewing the Profiler Output > Hot Spots* in *Using the Natural Profiler* for further information.

The default layout that is initially used can be set in the Natural preferences. See *Profiler > Hot Spots* in *Setting the Preferences* for further information.

## Natural Data Browser

The data browser now supports Adabas protected files. See *Creating a Report Template* in *Using the Data Browser* for further details.

In addition, to use the maximum number of occurrences for periodic groups and multiple fields in Adabas files, a new preference has been introduced. For details see *Displaying the Properties for a Field* in *Using the Data Browser* and *Data Browser* in *Setting the Preferences* for further details.

## Deploying Natural Applications

---

This section describes new features and enhancements in the NaturalONE deployment area.

It covers the following topics:

- [New Optional Batch Deploy in Predict](#)

### New Optional Batch Deploy in Predict

A new functionality has been added to Predict which allows you to deploy from a batch file. For more information, check *Managing Predict Components > Steps required in your Natural Project(s)*.

## Eclipse-Independent Application Testing

---

It is now possible to execute a Natural unit test bed with an Ant script outside the context of a NaturalONE/Eclipse environment. This is especially important for providing full DevOps support if you also want to execute test cases unattended in a lean command line environment. This extension will also simplify the integration of Natural unit test processing with continuous integration tools like Jenkins.

The functionality of writing Natural unit test cases is already covered by NaturalONE. However, this has now been extended with a new Natural unit test Ant Script wizard, which can be used to

generate Ant based testing scripts. These scripts support several targets like *checkout* for checking out a test project or *unittest* for executing a Natural unit test bed.

For testing purposes, you can now also execute a testing Ant script inside NaturalONE via the Eclipse built in **Run As Ant Script** functionality. The results of a test run will be displayed in the **Console** view.

Refer to *Creating Ant Scripts to Run Unit Tests* in the Application Testing documentation for further details.

## Natural for Ajax / Ajax Developer

This section describes new features and enhancements in Natural for Ajax and Ajax Developer.

It covers the following topics:

- [Responsive NatLogon and NatDisconnect Pages Supported](#)
- [Bootstrap 4 Supported in Responsive Pages](#)
- [Support for Natural-specific Properties like njx:natname in Responsive Controls](#)
- [PAGEBODY Container obsolete for Responsive Controls](#)
- [New Template for Responsive Pages with Sidebar](#)
- [Major Enhancements of Responsive Forms](#)
- [BMOBILE:COL: visisbleprop now supported](#)
- [Enhanced Testing Support for Responsive Controls](#)
- [New Responsive Containers: BMOBILE:SIDEBAR\\*, BMOBILE:HORIZONTALBAR, BMOBILE:CON-TENT](#)
- [Help IDs supported in Responsive Input Controls](#)
- [Enhanced Tooltip Support for Responsive Controls](#)
- [Page Pop-Ups Fit to Parent](#)
- [FIELD Control: New Value in Property formautocomplete Supported](#)
- [FIELD Control With New properties onclickmethod and ondbiclickmethod](#)
- [RPIECHART With New Property animateselection](#)
- [Several Responsive Modal Enhancements](#)

### Responsive NatLogon and NatDisconnect Pages Supported

Responsive and non-responsive NatLogon and NatDisconnect pages are now supported. In NaturalONE you can create your own custom NatLogon and NatDisconnect pages using the New layout wizard.

## Bootstrap 4 Supported in Responsive Pages

Bootstrap 4 is now supported for responsive controls. Bootstrap 4 is the default. If you still need to use Bootstrap 3, you can use the attribute `uselatestbootstrap` in *cisconfig.xml* to run all pages with Bootstrap 3 or use the property `uselatestbootstrap` in the NATPAGE control to run a single page with Bootstrap 3

See *Ajax Configuration* for details.

## Support for Natural-specific Properties like `njx:natname` in Responsive Controls

Most responsive controls now support Natural-specific properties like `njx:natname` in the same way as non responsive controls.

## PAGEBODY Container obsolete for Responsive Controls

The `PAGEBODY` tag is now obsolete for responsive controls. The templates for responsive pages do not contain the `PAGEBODY` tag anymore. Responsive pages with `PAGEBODY` tags are still supported but contain obsolete HTML code.

## New Template for Responsive Pages with Sidebar

The Layout Painter supports a new page template for development of responsive pages with sidebars. See also *Responsive Page Layout and Controls* for further details.

## Major Enhancements of Responsive Forms

A more flexible and lightweight `BMOBILE:FORM` container is now supported. The `BMOBILE-FORMGROUP` containers now supports horizontal and vertical forms. For the usage in bar controls - like the `BMOBILE:HORIZONTALBAR` and the `BMOBILE:SIDEBAR` - a `BMOBILE:FORMINLINE` container is supported. A `BMOBILE:FTEXTOUT` control has been added to support plain read-only text in forms.

## BMOBILE:COL: visisbleprop now supported

The `BMOBILE:COL` container now supports a `visisbleprop` property.

## Enhanced Testing Support for Responsive Controls

Most responsive containers and controls now support a `testtoolid` property.

### New Responsive Containers: `BMOBILE:SIDEBAR*`, `BMOBILE:HORIZONTALBAR`, `BMOBILE:CONTENT`

The new responsive containers `BMOBILE:SIDEBAR*`, `BMOBILE:HORIZONTALBAR` and `BMOBILE:CONTENT` support frequently used patterns for modern responsive pages.

Additional controls like `BMOBILE:TOGGLER`, `BMOBILE:SIDEBARGROUP`, `BMOBILE:BARTEXT` support corresponding functionality for flexible rendering.

## Help IDs supported in Responsive Input Controls

Responsive input controls like `BMOBILE:FFIELD` now support a `helpid` property in the same way as non-responsive controls.

## Enhanced Tooltip Support for Responsive Controls

Bootstrap 4 tooltip support is now used to render tooltips. The rendering can be customized via CSS style classes. All form controls now also support setting the tooltip text dynamically from within Natural. Use the property `titleprop` in the corresponding controls.

## Page Pop-Ups Fit to Parent

The file *cisconfig.xml* now supports the new settings `pagepopuponresize`, `pagepopuphorizontal` and `pagepopupvertical`. Use these settings to fit a page pop-up to its parent.

See *Ajax Configuration* for details.

## FIELD Control: New Value in Property `formautocomplete` Supported

The `formautocomplete` property of the `FIELD` and `BMOBILE:FFIELD` controls now supports the value `new-password`. In the current versions of Chrome, this can be used to prevent Chrome from autofilling form fields.

## FIELD Control With New properties `onclickmethod` and `ondblclickmethod`

Natural programs can now react to click and/or double click events. Refer to the description of the `FIELD` control properties for details.

## RPIECHART With New Property `animateselection`

Use the new `RPIECHART` property `animateselection` if you want to render the selected slice with a bigger radius (= move out effect).

## Several Responsive Modal Enhancements

A new `BMOBILE:HELPMODAL` dialog shows help texts for specified help IDs. All responsive modal dialogs - `BMOBILE:MODAL`, `BMOBILE:INTMODAL`, `BMOBILE:HELPMODAL` - are now draggable and resizable.

For `BMOBILE:MODAL`, the page URL can now be specified dynamically at runtime.

## Documentation

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The *NaturalONE in a Nutshell* documentation has been enhanced. A new section *Performance Aspects* has been added, providing information on what actions and best practices can improve the performance.

## Known Issues

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### Subclipse NullPointerException

If you are working with the SVN Repository Exploring Perspective or Views, it might happen that a dialog with a `NullPointerException` pops up. This problem has been observed especially, if you switch from the SVN perspective to the NaturalONE perspective.

This is a known Subclipse problem which is described in the following Subclipse issue: <https://github.com/subclipse/subclipse/issues/126>.

Even if it is annoying, you can ignore this exception.



# 9

## What's New in Version 9.1.2

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## Basic Functionality for Natural Application Development

---

This section describes new features and enhancements in NaturalONE's basic functionality for Natural application development.

It covers the following topics:

- [Enhanced RTL Language Support](#)
- [SSL Support](#)
- [Support Old Internal Data Area Format](#)
- [Customizable Coloring in the Map Editor](#)

### Enhanced RTL Language Support

The support for right-to-left (RTL) languages has been enhanced. In particular, the bidirectional settings such as layout orientation, visual order and Arabic shaping are now maintained on a per-project basis. As such, they can be exported to a Natural project file (.natural) together with the other project properties and persisted in a user's source repository. In addition, these settings are initialized from the current server settings if possible, in order to reduce the time and effort required for configuration.

This is reflected in modified options when setting NaturalONE preferences and/or changing the properties of Natural projects in local mode. Refer to *Regional Settings* in *Setting the Preferences* and *Regional Settings* in section *Changing the Project Properties* of *Managing Natural Projects* for further details.

### SSL Support

It is now possible to establish SSL-secured connections to Natural Development (NDV) servers (running on version 9.1.2 or above).

This is reflected in modified options when setting NaturalONE preferences and/or changing the properties of Natural projects in local or server mode. Refer to *Using SSL* for further details.

### Support Old Internal Data Area Format



**Note:** The following only applies when Natural on Linux and Cloud Version 9.1.2 and above or Natural for Windows Version 9.1.2 and above are being used as a development server.

During upload or update to the server, all types of data area sources (local, parameter and global) will no longer be converted into the old internal data format but will be saved as defined with the NaturalONE Source Editor. Therefore the option **Support old internal data area format** will be ignored. For details refer to *Options* in section *Natural* under *Setting the Preferences* for details.

## Customizable Coloring in the Map Editor

It is now possible to customize the colors of specific syntax elements displayed in the map editor. Refer to *Map Editor* under *Setting the Preferences* for details.

## Natural Tools and Utilities

The list of Natural tools and utilities now also comprises the following:

Tool	Platform
Adabas Event Replicator	Mainframe
Adabas Online System	Mainframe
Adabas Review	Mainframe
Adabas Statistics Facility	Mainframe
Natural Ajax Demos	Windows
Natural Security	All
Predict Application Audit	Mainframe
Predict Application Control	Mainframe
zIIP Statistics	Mainframe

A tool is only shown if the corresponding application is installed.

- [Security Validation](#)
- [Setting Filters](#)

### Security Validation

If an entry in the list of Natural tools and utilities derives from an XML member delivered by Software GmbH (which are named `SAG-*.XML`), it will only be displayed in the list of tools if Natural Security (if used) allows you to log on to the given library and execute the given command.

### Setting Filters

If you add your own tools to the list of the Natural tools and utilities, you may specify filters so that the tool is only listed if certain conditions are met.

For further information, see *Extend the List of Tools and Utilities*.

## Natural for Ajax / Ajax Developer

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This section describes new features and enhancements in Natural for Ajax and Ajax Developer.

It covers the following topics:

- New Ajax Configuration Parameter `urlopenstreetmapgeocoder`
- **AUTOCOMPLETE** supports limiting the results shown in a drop-down box
- **DATEINPUT2** with new Properties `stylevariant` and `displayprop`
- New Control **REPORT2**
- New Ajax Configuration Parameter `maxserverlogage`
- Support for editable columns in **BMOBILE:SIMPLEGRID**
- **ROWTABLEAREA2** supports Export to Clipboard and File
- **ROWTABLEAREA2** supports Icon Bars
- Layout Generation Enhancements
- Switch off Server Logging
- New Responsive Control **BMOBILE:ICONCOL**
- Responsive Modal Controls
- Icon Support in Responsive Controls
- Layout Painter - Error Property Selection
- Ajax Developer Supported in Natural Navigator View
- Grouping of Objects Supported for Ajax Enabled Natural Projects

### New Ajax Configuration Parameter `urlopenstreetmapgeocoder`

You can now adapt the third party geocoder URL in the Ajax configuration file if needed.

### **AUTOCOMPLETE** supports limiting the results shown in a drop-down box

The **AUTOCOMPLETE** control now enables you to limit the results shown in the drop-down box. The **AUTOCOMPLETE** control now also has a new property `maxresults`. The **FIELD** control now has a new property `autocompleteresultsref`.

### **DATEINPUT2** with new Properties `stylevariant` and `displayprop`

**DATEINPUT2** now supports the properties `stylevariant` and `displayprop` in the same way as the **FIELD** control.

## New Control REPORT2

The REPORT2 control supports PDF report generation in responsive and non-responsive design. In difference to the REPORT control, it does not require to additionally render the data in the HTML pages.

## New Ajax Configuration Parameter maxserverlogage

Automatic cleanup of *ServerLog\*.log* files is now supported. You can configure the maximum storage age of *ServerLog\*.log* files in days in the Ajax configuration file.

## Support for editable columns in BMOBILE:SIMPLEGRID

BMOBILE:SIMPLEGRID now fully supports editable columns also on small devices.

## ROWTABLEAREA2 supports Export to Clipboard and File

In ROWTABLEAREA2, all or just the selected items can now be copied to the clipboard or exported to a file. See *Export to Clipboard and File* in the description of the ROWTABLEAREA2 control grid for further details.

## ROWTABLEAREA2 supports Icon Bars

ROWTABLEAREA2 supports the new controls ICONBAR, ICONBARLINE, TOCLIPBOARDICON, TOFILEICON and BLOCKSCROLLINGBAR. See *Icon Bars* in the description of the ROWTABLEAREA2 control grid for further details.

## Layout Generation Enhancements

Performance of Layout generation has been improved. Also the analysis of generation errors has been simplified. See the new attribute `htmlgeneratorlog` in the *Ajax Configuration* section.

## Switch off Server Logging

You can now switch off writing log information to the server log. See `loglevel` in the *Ajax Configuration* section.

## **New Responsive Control BMOBILE:ICONCOL**

BMOBILE:SIMPLEGRID now supports icon columns. See BMOBILE:ICONCOL for details.

## **Responsive Modal Controls**

A set of responsive modal controls has been added:

- BMOBILE:INTMODAL,
- BMOBILE:INTMODALHEADER,
- BMOBILE:INTMODALBODY,
- BMOBILE:INTMODALFOOTER.

## **Icon Support in Responsive Controls**

Many responsive controls now support icons as values for `name/nameprop` or as value for other text based properties. For examples see the Natural for Ajax Demos.

## **Layout Painter - Error Property Selection**

On double-click in the **Problems** view now not only the control but also the erroneous property is selected in Layout Painter.

## **Ajax Developer Supported in Natural Navigator View**

Ajax functionality is now supported in the Natural Navigator View.

## **Grouping of Objects Supported for Ajax Enabled Natural Projects**

The grouping of objects by object type is now also supported for Ajax enabled projects.

# 10

## What's New in Version 9.1.1

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## Using NaturalONE in Your Own Eclipse Environment

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The easiest and recommended way to install NaturalONE is to make use of the Software AG Installer. However, you may prefer to make use of your already existing Eclipse environment. A short description how to achieve this can be found in the section *Using Your Own Eclipse* in the *Installation* documentation.

## Installation

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The Software AG Designer 10.3, which includes NaturalONE, uses Eclipse Version 4.7.3a. If you prefer to use NaturalONE in your existing Eclipse environment, Eclipse Version 4.7.3a is required. In addition, Java 1.8 is required. See also *Using Your Own Eclipse* in the *Installation* documentation.

### Support of Windows 7 Professional Edition - x86-64

NaturalONE Version 9.1.1 under Windows 7 Professional Edition - x86-64 will be supported until January 31st, 2020.

## Basic Functionality for Natural Application Development

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This section describes new features and enhancements in NaturalONE's basic functionality for Natural application development.

It covers the following topics:

- [Renamed and Modified Option in the Runtime Execution Preferences](#)
- [Clean Project on Update from Repository](#)
- [File Transfer](#)

### Renamed and Modified Option in the Runtime Execution Preferences

The option **Expand Natural server view on reconnect** has been enhanced and renamed to **Restore Natural Server View**.

For further details please refer to *Runtime Execution* in *Setting the Preferences*.



## Clean Project on Update from Repository

When a Natural project in the workspace is updated from a repository location the *.natural* file of the project may also be modified.

Depending on the setting of the preference **Update project properties automatically on .natural file modification** in the Natural Project preferences, the new properties coming with the updated *.natural* file are propagated to the project and will immediately come into effect.

On changes of the runtime properties, the project's server environment may possibly no longer be in synch with the project's builder information, e.g. Natural objects existing in the project in the workspace may be missing in the new server environment. This may lead to Natural errors on the project's build, update or upload functions. Executing the function **Clean** function in a project ensures that the project in the workspace will be in synch with the server environment.

The **Clean** function is now executed automatically for a project when one of the following properties is changed in the *.natural* file:

- Host Name
- Port Number
- Session Parameters
- FUSER

### Prerequisite

The preference **Update project properties automatically on .natural file modification** must be checked in the Natural Project preferences.

### Properties Dialog

The automatic **Clean** of a project is not performed when the projects server environment is modified using the **Properties** dialog. Here the user must take care on his own and issue the **Clean** function for the project manually when the modifications have been done.

For further details on the **Clean** function see also *Understanding the Behavior of the Natural Builder, Builder* in the Natural preferences and *Modifying Objects in the Natural Environment or in the Repository*.

## File Transfer

NaturalONE now supports File Transfer. This functionality is currently only available when executing applications on mainframe-based NDV (Natural Development) servers.

Refer to *File Transfer* in section *Setting the Preferences* for details.

## Deploying Natural Applications

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This section describes new features and enhancements in the NaturalONE deployment area.

It covers the following topics:

- [Switching the Security Mode](#)
- [Using Project References](#)
- [Scratching Objects on the Server](#)
- [Writing a History Log File](#)
- [Creation of SYSOBJH Workplans](#)
- [Recognition of the FNAT SYSTEM Library](#)
- [Handling of Upload Errors](#)
- [Performance of the NaturalONE Deployment Run](#)
- [Starting the Deployment from the Command Line](#)

### Switching the Security Mode

The security mode used in the NaturalONE deployment wizard can now be switched independently from the mode set in the Natural server environment. Refer to the description given under *Steplibs* in the section *Using the Deployment Wizard for Natural Applications* for details.

### Using Project References

References between NaturalONE projects can now be handled also in the NaturalONE deployment scripts. See section *Project References* in the section *Using the Deployment Wizard for Natural Applications* and *Project References Handling* for detailed information.

## Scratching Objects on the Server

The NaturalONE deployment scripts can now record the deletion of objects in the workspace and scratch the corresponding objects on the server during the next deployment run. See the description for the option **Scratch server objects** description under *General Settings* in the section *Using the Deployment Wizard for Natural Applications*.

## Writing a History Log File

The NaturalONE deployment scripts can be enabled to write history log files during processing. For more information refer to *Logging* in the section *Using the Deployment Wizard for Natural Applications*.

## Creation of SYSOBJH Workplans

The NaturalONE deployment scripts can be enabled to generate SYSOBJH workplans which can be used to replay the actions performed by the NaturalONE deployment scripts in pure server environments. For more information refer to *Logging* in the section *Using the Deployment Wizard for Natural Applications*.

## Recognition of the FNAT SYSTEM Library

The NaturalONE deployment scripts can now handle the special file number "-2" which can be used to refer to the SYSTEM library in FNAT. See *Steplibs* in the section *Using the Deployment Wizard for Natural Applications* for details.

## Handling of Upload Errors

Upload errors that occur during the NaturalONE deployment run are now handled similar to catalog or stow errors so that the corresponding object is marked for a retry during the next deployment run.

## Performance of the NaturalONE Deployment Run

During NaturalONE deployment runs with incremental mode enabled the objects that need to be processed have to be calculated depending on the scope level that has been selected (see *Controlling the Scope of Files to be Processed* for details). The performance of these calculations has been enhanced, especially for large applications with many objects and especially for the initial (first) deployment run.

## Starting the Deployment from the Command Line

In addition to the already required JAR files for running the deployment script, another new JAR file is required now. For more information refer to *Prerequisites* in the section *Starting the Deployment from the Command Line*.

## Natural for Ajax / Ajax Developer

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This section describes new features and enhancements in Natural for Ajax and Ajax Developer.

It covers the following topics:

- [Responsive Tab Controls](#)
- [BMOBILE:ALERT](#) with new Property duration
- [BMOBILE:PANEL](#) with new Property foldedprop
- [BMOBILE:FORMAREA](#) with new Properties legendprop, visibleprop and invisiblemode
- [BMOBILE:FORMAREA](#) with new Properties textid and nameprop
- [BMOBILE:FORMGROUP](#) with new Properties visibleprop and invisiblemode
- [BMOBILE:CHECKBOX](#) with new properties
- [New Responsive Control BMOBILE:RADIOBUTTON](#)
- [New Responsive MEDIA Controls](#)
- [New Responsive Side Navigation Controls](#)
- [BMOBILE:NAVBAR](#) with new Property brandstraighttext
- [BMOBILE:SIMPLEGRID](#) with Editable Columns
- [DATEINPUT2: Custom Holiday Rendering](#)
- [DATEINPUT2](#) with new Property popuponF4F7
- [DATEINPUT](#) and [DATEINPUT2](#) support Property testtoolid
- [NaturalAjax Samples](#)
- [PDF Reports - Upgrade to Version FOP 2.2](#)
- [CSVCOLUMN](#) supports Properties njx:natname and njx:natstringtype
- [Responsive Style Guide](#)

### Responsive Tab Controls

A set of responsive tab controls has been added:

- [BMOBILE:TABPANE](#),
- [BMOBILE:VERTICALTABPANE](#),
- [BMOBILE:TAB](#),
- [BMOBILE:TABSUBPAGES](#),
- [BMOBILE:VERTICALTABSUBPAGES](#),
- [BMOBILE:STRAIGHTTAB](#),

■ BMOBILE:PAGER.

**BMOBILE:ALERT with new Property duration**

For the BMOBILE:ALERT control, you can now define the duration after which the alert box will disappear.

**BMOBILE:PANEL with new Property foldedprop**

For the BMOBILE:PANEL container, you can now control the folded state dynamically from your Natural program.

**BMOBILE:FORMAREA with new Properties legendprop, visibleprop and invisiblemode**

For the BMOBILE:FORMAREA container, you can now control the visible state and the name of the legend dynamically from your Natural program.

**BMOBILE:FORMAREA with new Properties textid and nameprop**

For the BMOBILE:FORMAREA container, you can now dynamically define the name from your Natural program and from multilanguage files.

**BMOBILE:FORMGROUP with new Properties visibleprop and invisiblemode**

For the BMOBILE:FORMGROUP container, you can now control the visible state and the name of the legend dynamically from your Natural program.

**BMOBILE:CHECKBOX with new properties**

Some advanced properties have been added to the BMOBILE:CHECKBOX control.

**New Responsive Control BMOBILE:RADIOBUTTON**

A responsive radio button control BMOBILE:RADIOBUTTON is now available.

## **New Responsive MEDIA Controls**

The responsive controls BMOBILE:VIDEO, BMOBILE:MEDIAUPLOAD, and corresponding sub-controls have been added to integrate and upload media objects.

## **New Responsive Side Navigation Controls**

The controls BMOBILE:SIDENAV, BMOBILE:NAVTREE and BMOBILE:SIDENAVCONTENT support the implementation of responsive side navigation using a responsive navigation tree.

## **BMOBILE:NAVBAR with new Property brandstraighttext**

For the BMOBILE:NAVBAR control, you can now set text and images as value of the brandprop property. Via the new property brandstraighttext you can distinguish between the representation.

## **BMOBILE:SIMPLEGRID with Editable Columns**

The BMOBILE:SIMPLEGRID control now supports editable columns. See the corresponding sample in the Natural Ajax Demos for details.

## **DATEINPUT2: Custom Holiday Rendering**

Support to render custom holidays in different style has been added to the DATEINPUT2 control. For details, please refer to the new properties HOLIDAYS\* and the corresponding sample in the Natural Ajax Demos.

## **DATEINPUT2 with new Property popuponF4F7**

For the DATEINPUT2 control, you can now customize whether or not the calendar should open on using the F4 or F7 key.

## **DATEINPUT and DATEINPUT2 support Property testtoolid**

The DATEINPUT and DATEINPUT2 controls now support the property testtoolid.

## **NaturalAjax Samples**

The samples now contain an additional user interface component with performance hints for non-responsive layouts and containers.

## PDF Reports - Upgrade to Version FOP 2.2

FOP 2.2. is now used for the PDF report generation in Natural for Ajax. This version requires more Java memory. When using this feature you might have to increase the configuration settings for Java memory in your web application server.

For details concerning Java memory settings, please refer to the documentation of your web application server.

## CSVCOLUMN supports Properties `njx:natname` and `njx:natstringtype`

The CVSCOLUMN control now supports the properties `njx:natname` and `njx:natstringtype`.

## Responsive Style Guide

For responsive pages a style guide is now available. You find the latest version in the NaturalAjaxDemos NaturalONE project.

## Natural Tools and Utilities

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The new SYSUTIL utility enables you to start selected Natural tools and utilities from NaturalONE. In general, it starts character based tools on the server side. Additionally, it offers new rich GUI interfaces to the SYSEXT and SYSEXV utilities and a rich GUI tool to retrieve error messages.

The list of tools provided in SYSUTIL can be extended so that it also shows your own tools and applications.

For detailed information see *Using Natural Tools and Utilities* in the *Using NaturalONE* documentation.

## NaturalONE in a Citrix Environment

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NaturalONE can be installed and is supported running under Windows Remote Desktop Services on all from Software AG supported Windows Server Platforms allowing parallel user access via Windows remote desktop connections. NaturalONE is also intended to be installed and to run on Citrix Xenapp environments. However issues caused by NaturalONE that are related to the Citrix Xenapp environment or its configuration need to be reproduced under Windows Remote Desktop Services on a currently supported Windows Server platform first before further analysis can take place.

