

Release Notes

PROIV Version 9.1006

November 2023 – Service Release



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VERSION	ISSUE DATE	CHANGES
9.1006	November 2023	November Service Release updates
9.1005	September 2023	September Service Release updates
9.1004	July 2023	July Service Release updates
	June 2023	Service Release not required
9.1003	May 2023	May 2023 Service Release Updates
9.1002	April 2023	April 2023 Service release updates
9.1001	March 2023	March 2023 Service release updates
9.1000	February 2023	Spring Maintenance Release.
9.904	January 2023	January Service Release (No SR required in Dec 2022)
9.903	November 2022	November Service Release.
9.902	October 2022	October Service Release, added new section on CVEs
9.901	September 2022	September Service Release
9.900	August 2022	Autumn Maintenance Release
9.804	July 2022	July Service Release
9.803	June 2022	June Service Release (no SR required in May)
9.802	April 2022	April Service release,
9.801	March 2022	March Service release
9.800	Spring 2022	Spring Maintenance release rolling up changes from previous service releases and resolution of recent issues.
9.75	December 2021	2 nd December service release to resolve Apache log4j CVE
9.74	December 2021	December Service Release changes
9.73	November 2021	November Service Release changes
9.72	October 2021	October Service release with fixed issues listed in section 6
9.71	September 2021	September Service release with fixed issues listed in section 6
9.70	Autumn 2021	Autumn Maintenance release rolling up changes from previous service releases
9.65	July 2021	Changes for 9.65
9.64	June 2021	Changes for 9.64
9.63	May 2021	Changes for version 9.63
9.62	April 2021	Changes for version 9.62
9.61	March 2021	Changes applied for version 9.61
9.60	February 2021	Changes applied for version 9.60

VERSION	ISSUE DATE	CHANGES
9.54	January 2021	Added fix list for 9.54
9.53	11 December 2020	Added fix list for 9.53
9.52	9 November 2020	Added fix list for 9.52 service release and end of life notice for MySQL support
9.51	25 September 2020	Add fix list for 9.51 Service Release.
9.50	21 August 2020	Added fix list for 9.50 Maintenance Release.
9.43	31 July 2020	Added fix list for service release and known issue in Send/Receive demo.
9.42	17 June 2020	Added fix list and documented issue with graphics files obtained from the internet.
9.41	29 May 2020	Added fix list and note on new Windows Client PIV option
9.4	29 April 2020	Added information about new version numbers and fixes for this release
9.3R0-SR2	06 April 2020	Add fix
9.3R0-SR1	31 March 2020	Added fix list and Windows section.
9.3R0	02 March 2020	Added fixes and functional changes for release 9.3R0
9.2R0-SR6	March 2020	Added 1 issue to fix list
9.2R0-SR5	February 2020	Added 1 issue to fix list
9.2R0-SR3	January 2020	Added 2 resolved issues.
9.2R0-SR3	01 Feb 2020	Added fixes for Service Release 3
9.2R0-SR2	17 Dec 2019	Adding missing fix number.
9.2R0-SR2	December 2019	Service Release containing bug fixes to 9.2R0
9.2R0-SR1	November 2019	Service Release containing bug fixes to 9.2R0
9.2R0	October 2019	SQL Server Linux, Lite Client, Issues fixed since version 9.1

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1 Introduction

1.1 Document Structure

- Section 2 – Supported Platforms and Databases
- Section 3 – Getting Started with Version 9.0
- Section 4 – Component Specific Information
- Section 5 – Platform and Database Specific Information
- Section 6 – Common Vulnerabilities and Exposures
- Section 7 - Issues

1.2 Upgrading Your Application

1.2.1 Upgrading from Version 8 to Version 9.1000

PROIV version 9 is not gen compatible with any previous versions of PROIV. A mandatory build of all code is required when moving to PROIV version 9.1000. If you are upgrading from v8 to v9, you must take a backup of your boots folder; export your application source code and import into v9.1000 and then perform a build of all functions (i.e Bulk Build – All Functions) within the application. Additionally, all existing set up options will need to be reconfigured using the new PROIV Dashboard.

1.2.2 Upgrading from a previous Version 9 to Minor Version 9.1000

PROIV version 9.1000 is gen compatible with previous versions of version 9; there is no mandatory rebuild requirement. When performing an upgrade using the binary installer it will update the executables and the contents of the bootstrap by isin'ing the version 9.1000 developer.out (or administrator.out). An alternative approach is to is to export your code from the previous version 9 and import into version 9.1000 performing a subsequent Developer bulk build of the imported functions. The default installation folder under "Program Files" is now "Zellis", if you are upgrading you should specify the install location of your existing installation otherwise a separate instance, with alternate port numbers, will be created.

An issue is present if upgrading to 9.1000 from 9.1, in order to prevent it you will need to remove the file "lgroup.pro" from the PROPATH folder prior to upgrading.

The RWS Max Request size now has a maximum size of 2000 (Megabytes). Any installations which currently have a value greater than 2000 in this field, in the dashboard, will be changed to 2000 during the upgrade process. See resolved issues for 9.52 in section 6 of this document.

The upgrade will also upgrade the dashboard. Any deployed Client Connector, Application Connector or Analytics web applications will have their contents upgraded and redeployed to the state they were in when the upgrade was run. If any new configuration options are added

to the templated web applications, then they will be added to the upgraded web applications with default values.

1.3 End of Life Notices

1.3.1 Deprecated functionality

The following functionality is deprecated and will be removed in a future major release of PROIV.

- PROIV Aurora
- External Sub-routines

1.3.2 Forthcoming End of Life Notices

The following component parts of PROIV will cease to be supported from the stated dates or versions:

- The PROIV Performance Monitor (PPM) has been removed in version 10 of PROIV.
- RedHat Enterprise Linux 7 – 30th June 2024

1.3.3 End of Life Notices

The following are no longer supported in PROIV Version 9. See section 2 for a list of supported platforms and databases in this release.

Components:

- PROIV Control Panel (Replaced with the PROIV Dashboard)
- PROIV Assure
- PROIV ActiveWeb

Platforms:

- HP UX
- Oracle Solaris

Databases

- Reality DB
- MySQL
- Oracle 18c
- PostgreSQL versions 9 and 10
- SQL Server 2016

2 System Requirements and Supported Platforms

This section lists the currently supported operating environments for PROIV and supersedes all other documents.

The following table details about the compatibility of system requirements, platforms, databases and browsers for PROIV v9 components. For installation process, refer to PROIV v9 Installation guide.

PROIV Version 9.1006 Server Supported Platforms							
Platform				Database Interface			
OS Name	Arch	Min OS	Max OS	Oracle	SQL Server	PostgreSQL	C-ISAM
				19c 21c	2017 2018 2019 Azure SQL	v11 – v15 inclusive	7.26
Windows Server Note 5	64-bit	2016	2022	✓ Note 3	✓ Note 2	✓	
Windows Workstation	64-bit	10	11	✓ Note 3	✓ Note 2	✓	
Linux	64-bit x64	RedHat7	RedHat8 Note 4	✓ Note 3	✓ Note1,2	✓	✓
AIX	Power5+	AIX 7.2	AIX 7.2	✓ Note 3			✓

Notes

1. PROIV with SQL Server on Linux has very specific software requirements, it requires a minimum of unixODBC 2.3.7 and the Microsoft SQL Server Linux version 17 driver commonly known as msodbcsql17.
2. Support is for SQL Server 2017 on Linux and 2018 and 2019 running on Windows
3. Support for Oracle databases and Operating system combinations is in line with Oracle's stated certifications as of date of this document.
4. Centos Stream v8 is not supported.
5. While PROIV may work on Windows Server 2012R2 the combination is no longer tested or supported

PROIV Version 9.1006 Supported Client / Browser Platforms			
Platform		Browser	
OS Name	MFC Client	Microsoft Chromium Edge	Google Chrome
		Note 1	Note 2
Windows 10 Note 3	✓	✓	✓
Windows 11 Note 3	✓	✓	✓
Windows 2016 Note 3	✓	✓	✓
Windows 2019 Note 3	✓	✓	✓
Windows 2022 Note 3	✓	✓	✓

Notes

1. Microsoft Edge Legacy not supported
2. Google Chrome is tested on the latest production release only
3. While PROIV Clients may work on Windows 2012 R2 and Windows 8.1 they are no longer tested or supported

2.1 MFC Client / Forms Designer Platforms

The MFC Client and Forms Designer are 32-bit applications which are compatible with the Windows 10 and 11 operating systems. Whilst the installation may be successful on other versions of Microsoft Windows, they are not supported platforms and are not tested; Zellis will not accept any fault reports or support issues on these platforms.

Version 9.4 introduced a change to the way the MFC Client responded to the return key when focus was on a dynamic icon. If you wish to use the previous behaviour a new option has been added to the General Settings for the application in v9.41 called "Hotspots action on CR" which will need to be checked to get the previous behaviour.

3 Getting Started with Version 9

3.1 New Features 9.1000

There are no new features introduced as part of the 9.1000 maintenance release.

3.2 New Features 9.900

3.2.1 Support for Java 11

PROIV on Windows and Linux is supplied with Microsoft Java Runtime Environment (JRE) version 11.

The Solaris and AIX distributions contain no bundled JRE and you are required to provide your own prior to installation.

Note: As a result of the change to Java 11 the configuration setting of JRE home in the dashboard has been removed as there is no longer the concept of a JRE. The JAVA Home setting is now the only setting used to specify Java location to be used by PROIV.

3.3 New Features 9.800

3.3.1 Bundled Java Library Dependency Updates

As part of this release the dependent Java libraries which are bundled with PROIV have been updated to ensure known security and other issues are resolved.

- Apache FOP
- Dependencies on Application and Client Connectors, Dashboard, Lexicon, License Server, and System Database
- Dependencies in the PROIV Java library projects in the Virtual Machine

There are no new functional updates to PROIV as part of 9.800.

3.4 New Features 9.70

3.4.1 Persistent Menus

In the MFC Client when Menus and Toolbars are added to a function, any functions that are called by that function will have the same Menus and Toolbars. The design of the OpenClient was the opposite of this. Version 9.70 now has an option to enable same behaviour as the MFC Client for the OpenClient via the PROIV Dashboard. To enable or disable this feature take the following steps in the Dashboard:

- Navigate to Client Connector Settings

- Expand the Clients tree section of the screen.
- Expand client services
- Expand the required Client Service in the Client Services tree
- Choose Rendition
- Select the required behaviour with the Persistent Menu Mode toggle

3.4.2 Dictionary Objects Import/Export functionality

This feature allows the import or export of Dictionary objects associated with various controls in PROIV. If a JSON Export is selected with the Export Associated File Definitions and Dictionary option selected the Export process will now export dictionary objects to files with extension p4di. Likewise, these files will be imported by the JSON import processes if selected.

3.5 New Features 9.60

3.5.1 New method on Excel SSO

The ExcelSSO, writeExcelCell method currently creates a cell with Number Format General. General format means that if the input is numbers e.g. 123456789012345 it will be displayed as numeric 1.23457E+14. If no align parameter is passed to the method it defaults to Centre alignment; this overrides the Microsoft Excel default of Right align for the number, or Left align if alpha input.

In order to allow numbers to be displayed as required a new method has been added to the PROIV Excel SSO:

```
writeExcelCellAsText()
```

This method gives greater control over the format of numbers within a given cell. See the PROIV documentation for further details.

3.5.2 Windows Service Installation

From version 9.60 it is possible to install the PROIV services on Windows as the Local Service account there by reducing the access rights given to the service. If you wish to do this then select "Local Service" during the installation and the services will be installed with the local account known as NT Authority/LocalService.

The files in the PROIV installation will have their permissions updated to allow this account to be able to read and write to them. It is important to note that if your application uses other interfaces and directories then it is your responsibility to ensure that those external interfaces give the Local Service account sufficient permission to continue to operate with them. See the install guide for further details.

3.5.3 Install as non-root user on Unix/Linux

Version 9.60 allows installation as a non-root user on Linux and Unix platforms. If you choose to install as the non-root user then the first screen you will be presented with is a credentials acceptance dialog; this is to remind you that you are not running as root and that additional steps are required to be run as root to complete the installation process.

The rest of the installation is as if you were a root user. Once the files are loaded and the configuration settings applied you will be presented with an additional information panel to indicate additional steps are required to complete the installation.

To complete the installation, you need to run the script `service.sh`, this can be found in the `bin` directory underneath the root of the installation. To install the services run the script as root and the services will be installed for your chosen operating system; for Linux this is `systemd` for AIX and Solaris it will be via `init.d`.

Notes

1. If you install on Linux which does not support `systemd` then the services will not be installed.
2. When not installed as root, the `proiv` installation files are owned by the user running the installation process. If you change permissions on files and directories then you need to ensure that the `PROIV` components which access them are able to do so otherwise the installation may generate errors or warnings.
3. If installing on AIX you will need to specify the path to the installed Java Virtual Machine (JVM) on the command line. Add the following parameters to the install command line:

```
LAX_VM <path to JVM>
```

See the 9.70 Install Guide for detailed information.

3.5.4 Support for external configuration files for web applications

It is now possible to override the application and client connector war files, to reference an external file. This is useful when running more than one environment with the same settings.

Stop the appropriate services, before making these changes.

Add an override descriptor to the appropriate web application xml file.

For example : `ApplicationServices/webapps/base-default.xml`

```
<Configure class="org.eclipse.jetty.webapp.WebAppContext">
```

```
<Set name="contextPath"/>/base-default</Set>
```

```
<Set name="war">C:\Program Files\zellis\PROIV Version 9\ApplicationServices\wars\base-
default.war</Set>
```

```
<Set name="overrideDescriptor">C:\anydir\override-web.xml</Set>
```

```
</Configure>
```

Add an override-web.xml file in location referenced in the web application xml file. The override-web.xml will reference the path to the new config location.

Example of an override-web.xml file

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<web-app xmlns="http://xmlns.jcp.org/xml/ns/javaee" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee http://xmlns.jcp.org/xml/ns/javaee/web-app_3_1.xsd"
version="3.1" metadata-complete="true">
```

```
<context-param>
```

```
<param-name>configPath</param-name>
```

```
<param-value>C:\anydir\external-config.json</param-value>
```

```
</context-param>
```

```
</web-app>
```

Add the new external-config.json file which is referenced in the override-web.xml.

The appropriate webservices will need to be started.

3.6 New Features 9.50

There were no new functional updates to PROIV as part of 9.50. Version 9.50 included all fixes previously released up to and including version 9.43

3.7 New Features 9.4

3.7.1 PROIV Version numbers

Prior to PROIV version 9.4, version numbers consisted of four numbers, namely *major.minor.release.build* (e.g 9.3.1.27). For version 9.4 and beyond, this will change to three numbers of the form *major.release¹.build²* (e.g. 9.4.11).

1. The new “release” number will consist of 1 or 2 digits. The first digit will indicate the old “minor” version number and the second digit, if present, will indicate the service release number. Therefore, a minor release of 9.4 may be followed by service

releases of 9.41, 9.42, 9.43 etc until 9.50 is released. Where the release number is divisible by 10 that indicates a maintenance build which rolls up all previous service releases.

- The build number indicates the order in which given versions were built. 9.41.1 is therefore guaranteed to have been built before 9.41.2 etc.

From 9.4 onwards only PROIV components that have changed will be re-built so the version numbers of components such as Developer, Virtual Machine, Windows Client, Forms Designer, Documentation and web applications may not be the same.

There are no new functional updates to PROIV as part of 9.4.

3.8 New Features 9.3

3.8.1 Config Substitution

Version 9.3 of PROIV Introduces the concept of parameter substitution in the Virtual Machine section of the PROIV Dashboard. This allows administrators to enclose Environment variables or the OGN* form of other Virtual Machine dashboard items within config settings. To use a substitution within another setting enclose the Environment variable name or the OGN* string within curly braces preceded with the '\$' character.

In the following settings the OGN* form of the Temp Directory is used to define the Print Path and the Windows Environment variable HOMEPATH is used to set the PROIV Home directory.

Print Path	<code>\${proiv.virtualMachine.vm.public.tempDir}/PrintPath</code>
Home Directory*	<code>\${HOMEPATH}</code>
Run Type	DEV
Enable GUI	<input checked="" type="checkbox"/>
Temp Directory	<code>c:\Temp</code>

- Print Path will resolve to `c:\Temp\PrintPath`
- Home Directory will be resolved to the Windows HOMEPATH environment variable

3.8.1.1 Limitations of Config Substitution

- The parameters used either as source or destination must be textual (string types). Numbers and Booleans are not allowed

2. Nesting of parameters is not supported. If a substitution parameter contains another it will not be resolved in the derived parameter.
3. If a substitute string cannot be resolved then an empty string is used instead

* “Object Graph Notation” as used in the Virtual Machines’ configuration files.

3.8.2 Clickable Buttons and Icons

The key to action a button or icon has been changed from a “Carriage Return” (CR) to the “Space” bar. When a button or icon has the focus then the “Space” bar will action any events in the same way as a mouse click. The CR key will now move focus to the next field in the cycle.

3.8.3 Microsoft Azure SQL Database

PROIV Version 9.3R0 adds support for Microsoft Azure SQL Databases from PROIV running on either Linux or Windows operating systems. Access is as per SQL Server using an odbc connection configured to access the database on the relevant Azure portal.

3.9 New Features 9.2

3.9.1 Lite Client

Lite Client is a new browser-based deployment option for PROIV which allows web developers to embed PROIV screens directly within web pages without resorting to i-frames utilising Open Client.

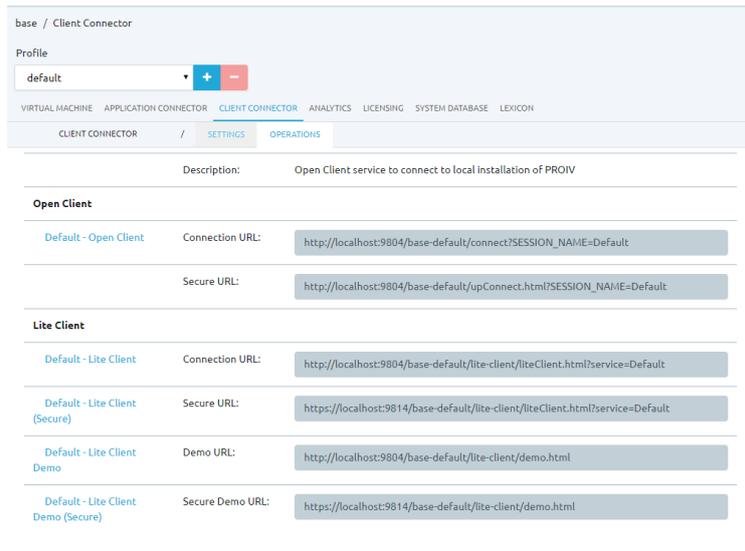
Utilising Bootstrap CSS and its Fluid Grid the PROIV components displayed take on the styling and fluidity of the rest of the web page and as a consequence operate on many different devices.

However, this means that PROIV screen do not render in the same way as they do in OpenClient and the MFC. As an example, all components are sized based on their percentage of a line; as the browser is resized it may mean that some components no longer show all their data or even show at all; PROIV Components that aren’t visible on the screen have no representation and as a consequence will cause components to shuffle around if they are made visible. There is more detail on the Fluid Grid in the documentation; see topic 870002.

All the Aurora maintenance screens have been updated to be presented in Lite Client rather than Open Client so you can see the difference in rendition and reactivity. If you want to show a screen in Lite Client the easiest thing to do is to add it into an Aurora menu and set the client display type to Lite Client.

3.9.1.1 Lite Client Demo

The Lite Client demo is accessible via the Operations tab of a client connector in the dashboard, see screen shot below. In order that the demo functions operate it is first necessary to load the demo; but this only occurs if you have selected “install demo functions” during the installation process. If you have not enabled the demo then you will need to load it manually via the PROIV Developer administration screens.



Simply select Default – Lite Client Demo and a new browser window will open presenting seven demo options on the left-hand side. This screen supports up to three concurrent PROIV sessions ; select “A simple Form” and the following Lite Client screen is displayed.

PROIV Lite Client Demos (v9.2.1.12.PR July 6 2019)

This page allows you to run up to three Lite Client sessions showing a demo function. Just click on a demo below to start a session.

Note that if this PROIV installation did not include the DEMOS then this page will not run the demo sessions.

1. A simple Form
2. A bigger form
3. Buttons and Icons
4. Popup windows
5. Embedded windows
6. A Paging Area
7. Component groups

[Lite Client documentation](#)

This panel holds up to three PROIV sessions [help](#)

A simple form that does not save any data it is just meant to demonstrate the layout of Lite Client components.

Name:

Address:

DOB:

Phone:

Email:

Selecting option 2 adds another session:

PROIV Lite Client Demos (v9.2.1.12.PR July 6 2019)

This page allows you to run up to three Lite Client sessions showing a demo function. Just click on a demo below to start a session.

Note that if this PROIV installation did not include the DEMOS then this page will not run the demo sessions.

- 1. A simple Form
- 2. A bigger form
- 3. Buttons and Icons
- 4. Popup windows
- 5. Embedded windows
- 6. A Paging Area
- 7. Component groups

Stop Session

[Lite Client documentation](#)

This panel holds up to three PROIV sessions [help](#)

A simple form that does not save any data it is just meant to demonstrate the layout of Lite Client components.

Name:

Address:

DOB:

Phone:

Email:

A form showing a radio group, a checkbox, a listbox and a combobox. This form does not save any data it just demonstrates the display of Lite Client components.

Name:

DOB:

Phone:

Ready:

Group: Yes No

Area1:

area 7	name 7	01/07/2018	a loooooooooooooong message for record number 7
area 8	name 8	01/08/2018	a loooooooooooooong message for record number 8
area 9	name 9	01/09/2018	a loooooooooooooong message for record number 9

The sessions can be stopped by clicking the stop session button.

3.9.2 SQL Server On Linux

Version 9.2 introduces support for SQL Server on Linux. Via unixODBC and the Microsoft SQL Server ODBC driver for Linux.

Minimum software requirements as tested with PROIV are documented in the Linux section of these release notes, however the reader should refer to Microsoft web site for most up to date information on minimum requirements for SQL Server.

3.10 New Features 9.1

The RPM Installation model introduced in 9.1 has now been removed.

3.11 New Features 9.0

The following new features are included in this release.

3.11.1 Hierarchical Configuration and Deployment Model

PROIV Version 9.0 Introduces the concept of a Hierarchical Configuration and Deployment model. This is achieved by the introduction of a new Configuration Dashboard which can be used to set-up and deploy multiple configurations for PROIV across your Enterprise. The requirement in Version 8 to maintain multiple configuration settings in various formats and dispersed locations is removed. The configuration of all your application is now managed in one place.

In addition to the configuration features of the dashboard it also introduces several other features:

- Enterprise management of configuration deployments using a new PROIV Dashboard
- Live Health Check status of all active deployments
- Segregation of Web Applications
- Separation of settings and operations

3.11.2 Native PostgreSQL Driver Support

The reliance of PostgreSQL database applications on Open Database Connectivity (ODBC) technology has been removed. Connection to the database is now achieved using native drivers provided with the PostgreSQL software. This greatly simplifies the configuration and reduces the maintenance overhead associated with keeping the ODBC drivers synchronized to the database versions.

3.12 Installation Differences

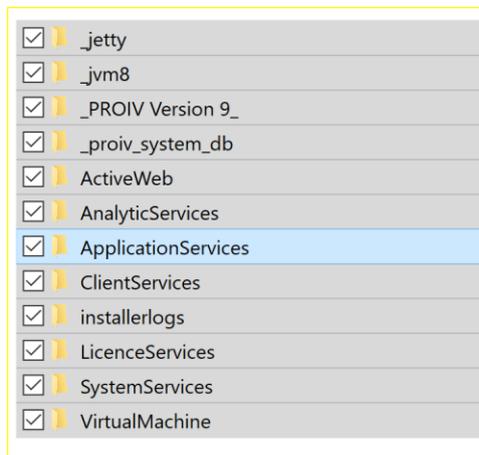
3.12.1 Differences Between Version 8 and Version 9 server processes

Version 8 comprised 5 different server processes, either services on Windows or daemon processes on Unix. This number has been increased slightly to provide services and names that better represent their functionality. The following lists the new V9 services and their components

V9 Service / Process Name	Purpose
PROIV V9 Analytic Services	Performance Monitor and Profiler
PROIV V9 Client Connector	Connection providers for Open Client and Aurora

PROIV V9 Application Connector	Connection providers for Analytics, Licensing, Gateway and Web Services
PROIV V9 Client VM	PROIV Virtual Machine serving interactive clients such as MFC Client and Open Client
PROIV V9 Gateway VM	PROIV Virtual Machine serving non-interactive clients such as Tasks and Web Services
PROIV V9 License Services	PROIV License server
PROIV V9 System Services	Database and Lexicon Services

The PROIV version 9 installed directory structure is revised to reflect the new server grouping. The following snapshot shows the directory structure of version 9.



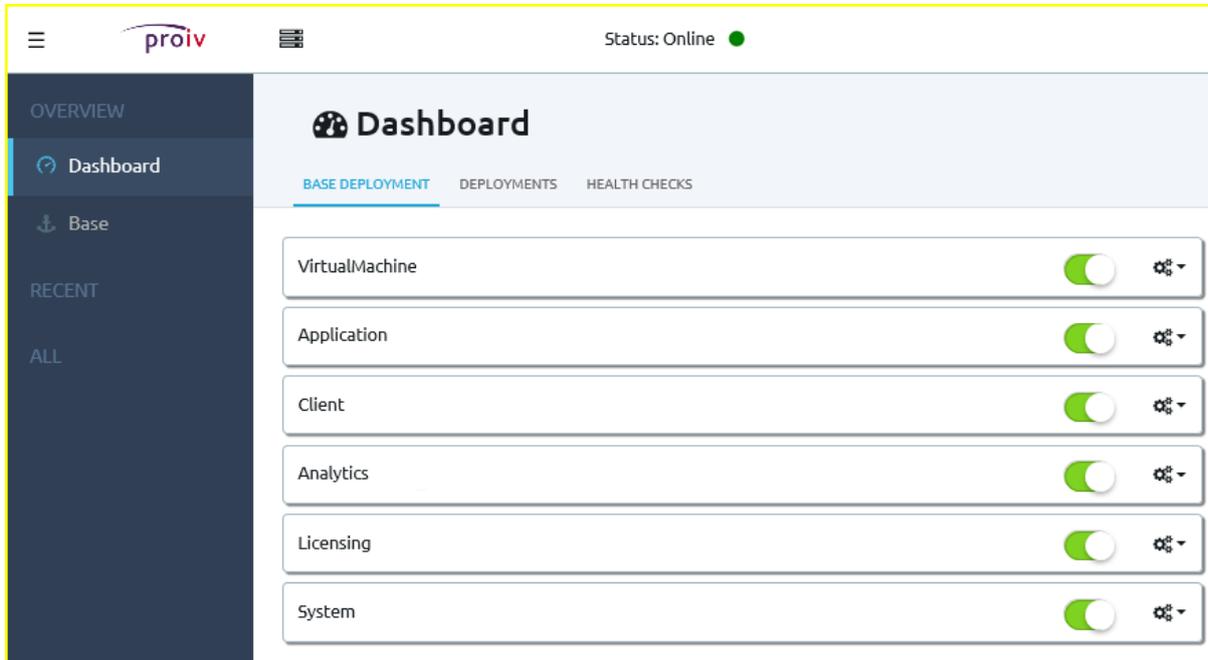
- `_jetty` – the jetty web application server V9.1 and all the Jar files used by the V9 web applications. Note that the web applications no longer have multiple copies of the jar files
- `_jvm8` – the Java Virtual Machine used by the installation PROIV version 9 now uses Java 8.
- `_proiv_system_db` – a directory containing two databases, one for the lexicon and one for statistics. This is an internal database for statistics and lexicon. It should not be modified by anything other than the tools provided. It is not used to hold any application source and cannot be used as a file type for PROIV.
- `_PROIV Version 9_` - a directory containing the uninstaller for the product
- `installerlogs` – a directory with the log file created by the installer; if you have problems with installation then it is a good idea to send this into support if you need to report an issue
- `VirtualMachine` – the PROIV VM and bootstraps
- `ApplicationServices` – a configuration instance of Jetty which serves Gateway and Web Services
- `ClientServices` – a configuration instance of Jetty which serves OpenClient and Aurora
- `SystemServices` – a configuration instance of Jetty which serves The Dashboard, Statistics and Virtual Machine Configuration

- LicenceServices – a configuration instance of Jetty which serves the configuration for the license server.

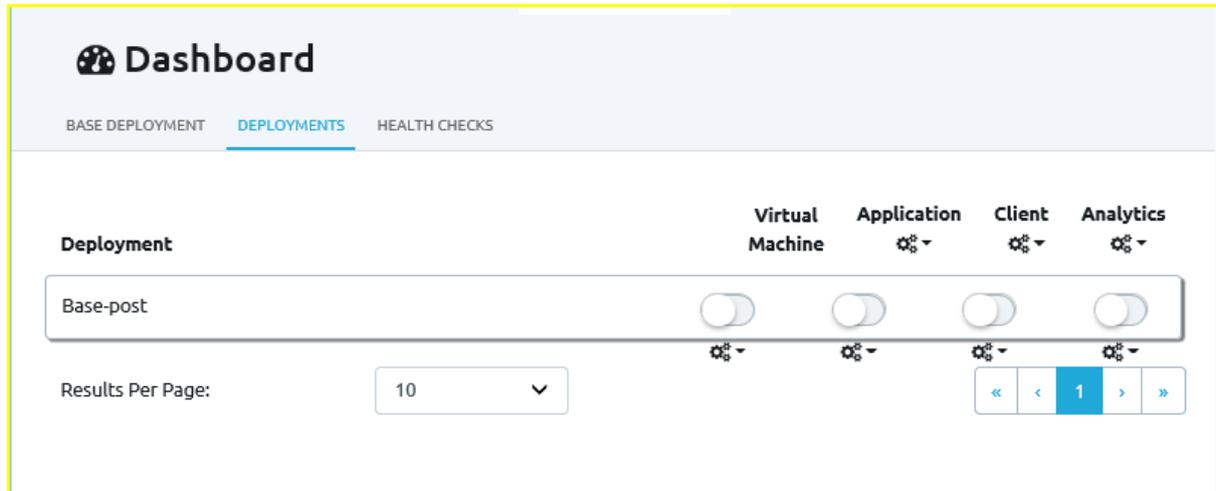
It is important to understand that there are multiple web application contexts created within each Jetty based web application server instance.

3.13 Version 9 Dashboard

The new PROIV Dashboard replaces the Version 8 Control Panel and several other disparate means of configuring your system. It also allows you to deploy multiple configurations and environments across your enterprise and to check the status of these running deployments. The following screen shot shows the entry screen of the dashboard with the deployment state of each service within the default configuration.



The Deployments tab shows the deployment status of all configurations derived from the base deployment. In the screen shot below the deployment id of Base-post is shown indicating that none of the components are currently deployed for this configuration.



The third tab shows the cause and number of various failures that are detected. This screen also allows you to manage these failures by dismissing the alerts and making changes to the settings; e.g. enabling an smtp server to configure the format and recipients of emails and notifying an administrator of a health check event.

Dashboard

BASE DEPLOYMENT DEPLOYMENTS **HEALTH CHECKS**

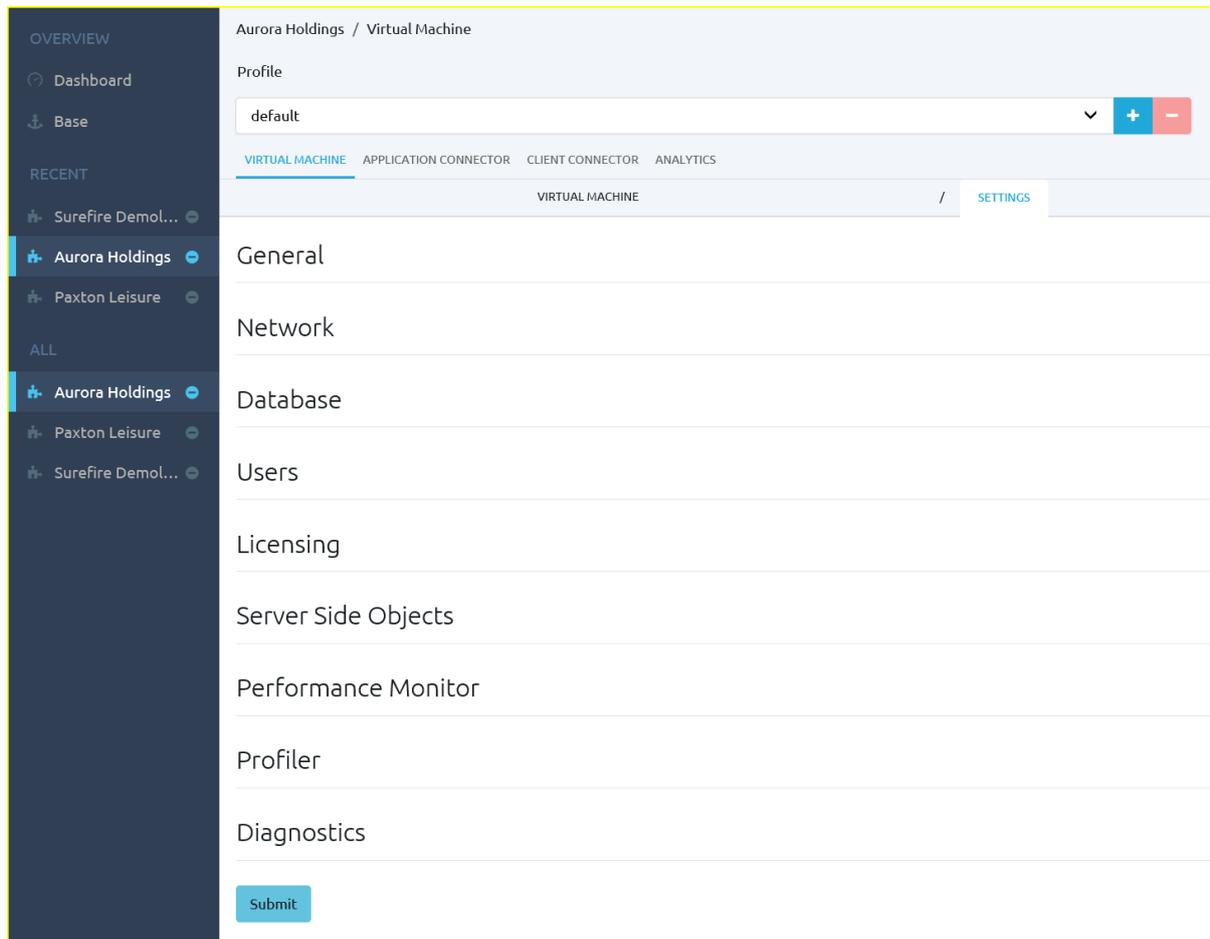
Refresh Data Dismiss All Dismiss Selected Alerts Settings Results per Page: 5

Sort Order: First Fail Date (Asc)

DeploymentID	Component	First Fail Date	Last Fail Date	Restored Date	Count	Failure Log	Select
Base	VirtualMachine	07/09/2018 14:00:33	07/09/2018 14:30:38	01/01/1970 00:00:00	14	Fail - Response Code:Connection refused (Connection refused)	<input type="checkbox"/>
Base	Client	07/09/2018 14:00:37	07/09/2018 14:30:38	01/01/1970 00:00:00	7	Fail - Response Code:404	<input type="checkbox"/>
Base	Application	07/09/2018 14:05:38	07/09/2018 14:30:38	01/01/1970 00:00:00	6	Fail - ConnectorHealth - Task execute failed: Connection refused (Connection refused)	<input type="checkbox"/>

« < 1 > »

The right-hand pane of the dashboard allows you to select the configurations you have set up to modify them.



Once selected navigate to the various components and sections to view the available settings

General

Network

Database

Default Database

PROPATH*

PRODATA*

Enable Rollback

Ignore Alternate Indices

Driver

General Database Settings

Display Lock Message

Display Error Message

Cursors

Timeout

Oracle Configuration

OCI8 Cache

Enable Warnings As Error

When all is done click the submit button at the bottom of the page.

The Operations tab allows you to access Demos and features like the Open Client connection URLs:

Profile: default

VIRTUAL MACHINE APPLICATION CONNECTOR CLIENT CONNECTOR ANALYTICS

APPLICATION CONNECTOR / SETTINGS OPERATIONS

The health status of Application Connector is either unhealthy or unknown. This may affect any operations performed below.

RESTful Web Services Demo

RESTful Web Services Test

PROIV Demo Service PROIV demo service

Use secure protocol:

POST /tu_item Task: TK_RWS_TullemAdd

GET /tu_item Task: TK_RWS_TullemGet

DELETE /tu_item Task: TK_RWS_TullemDelete

PUT /tu_item Task: TK_RWS_TullemUpdate

SOAP WSDL

Select one of the available web services below:

Name	Description
Demo Web Service	A demo web service

Results Per Page: 10

When you have configured the given deployment, you need to deploy it to the PROIV Server. Navigate to the Deployments tab on the main PROIV Dashboard. If the configuration is already deployed indicated by green buttons, then it will need to be undeployed first by clicking on the buttons. Then the new configuration can be deployed by clicking on the buttons again, turning the configuration green. The following screen shows various deployments with some components deployed for each configuration (green) and others not (grey)

Dashboard

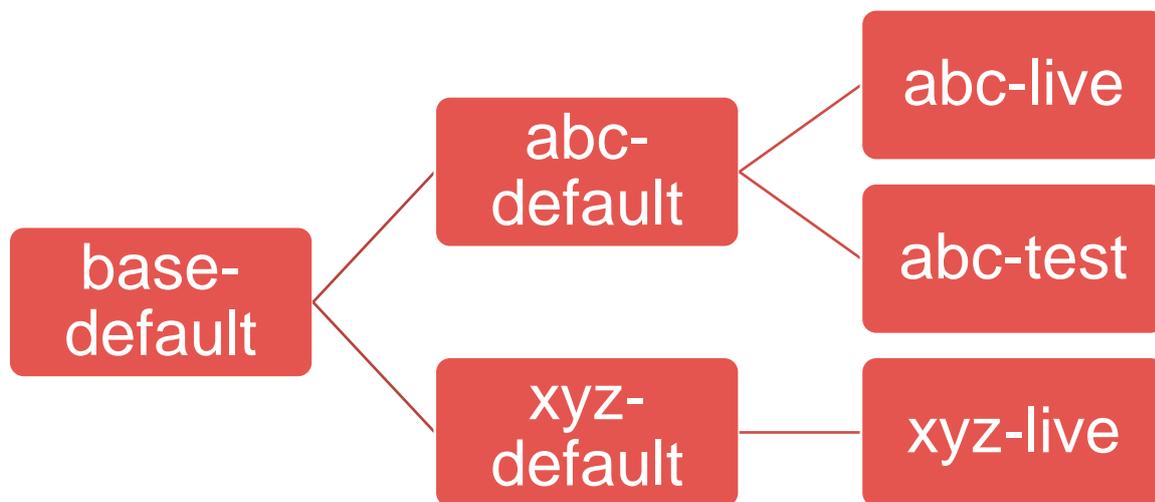
BASE DEPLOYMENT DEPLOYMENTS HEALTH CHECKS

Deployment	Virtual Machine	Application	Client	Analytics
abc	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
abcdefghijklmnopqrstuvwxyz0123456789aaaaaaaaabbbbbbbcccc	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
def	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
def-live	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
def-test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
xyz	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Results Per Page: 10

Note that there are two configurations shown with the prefix def. One test and one live. These suffixes come from the selected Profile for a configuration which allow you to make configurations for various environments such as live and test in this case.

Note: All configurations are initially based upon the base-default configuration and profile combination. When you choose a new profile, it will inherit from the default profile of the current selected deployment. If you create live and test profiles they will both be available under the selected deployment and will inherit from the default profile of that deployment.



3.14 Connecting to PROIV

There are three ways to connect to the PROIV Virtual Machine:

- Legacy Green Screen
- Classic MFC Client
- OpenClient / Aurora

On UNIX platforms the PROIV Virtual Machine may be started with the *runproiv* script as per V8. In addition, the pro command in this script can be modified to provide the configuration id with the following syntax:

-c <config-id>

e.g. if “zellis” was a deployed configuration:

```
-c zellis-default
```

In the above example the virtual_machine/config sub folder will contain a file called:

```
zellis-default.properties
```

On Windows the default port for the Client VM server has changed to 9023 and the default port for the Gateway VM Server is now 9833. Changing these should only be done via the base properties on Windows as the Client and Gateway VM services will need to be restarted to use them.

3.14.1 Changing the Kernel Host Name on Windows

To use a kernel host, other than the standard default of localhost, you will need to add an entry in the ApplicationServices\start.d\proiv.ini file for the PROIV installation that you wish to change. Add the following as the last line in the file

```
-Dproiv.kernel.host=alt.host.addr
```

where alt.host.addr is the tcp/ip address of the host to redirect to. E.g.

```
-Dproiv.kernel.host=123.213.231.132
```

The services will need restarting for this setting to become active.

3.14.2 PROIV Servers

V9 has a number of services which need to be started on your system.

On Windows these can be found in the windows Service Manager and can be started / stopped as per previous releases via the Services Management Console application.

On Unix there are shell scripts in each of the following directories to start and stop the server instances.

```
$PROIV_HOME/ApplicationServices/bin
```

```
$PROIV_HOME/ClientServices/bin
```

```
$PROIV_HOME/SystemServices/bin
```

```
$PROIV_HOME/LicenseServices/bin
```

```
$PROIV_HOME/AnalyticServices/bin
```

3.15 Co-existence with earlier versions of PROIV

3.15.1 Windows Platforms

Version 9 (client and servers) can coexist with Version 8 on the same operating system instance; the servers utilize different listening ports. PRO-ISAM locks will also be shared between versions, however it is important to ensure that file definitions match otherwise there will be unexpected behaviour.

3.15.2 Unix Platforms

You can install PROIV Version 9 on the same system as PROIV Version 8; although it should be noted that some of the pre-requisites (e.g. Java version) for version 9 are different to version 8.

4 Component specific Information

4.1 Client Connector

4.1.1 Aurora

4.1.1.1 URL To Access Aurora

The URL to access Aurora depends on the port number provided during the installation of PROIV. The default port number is 9804 and the full URL is:

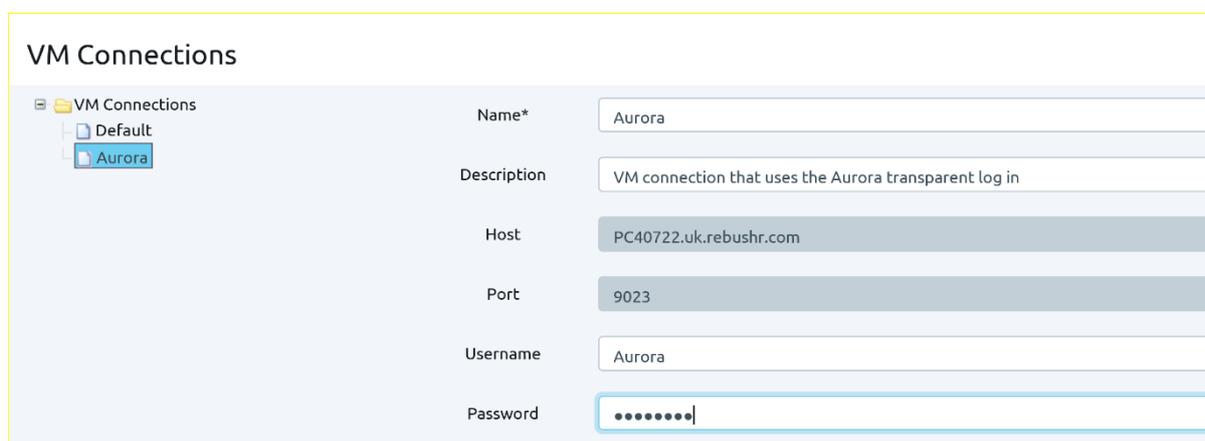
<http://<host>:9804/base-default/aurora>

Where <host> is the fully qualified domain name of the server on which you have installed PROIV.

4.1.1.2 Updates to Aurora Configuration on Unix

Once you have installed version 9.0 on UNIX, you will need to make some further configuration changes to allow PROIV Aurora to function.

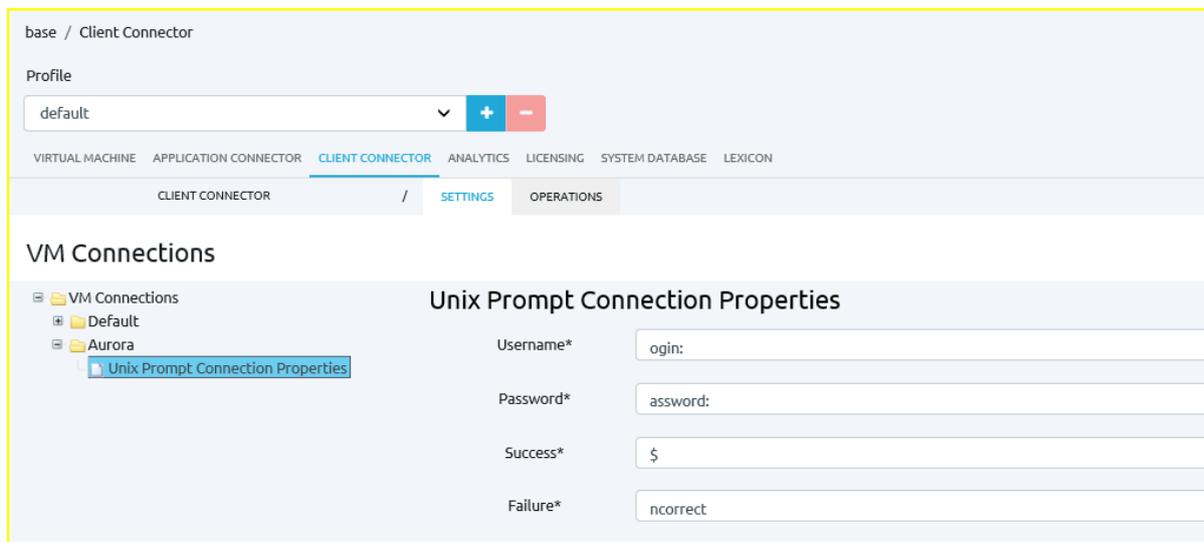
Using the PROIV Dashboard navigate to the Aurora Client Configuration area within the Client Connector configuration tab; in the VM Connections/Aurora panel enter a username and password which will successfully log into the Unix host.



The screenshot shows the 'VM Connections' configuration interface. On the left, a tree view shows 'VM Connections' expanded to 'Aurora'. The main configuration area contains the following fields:

Field	Value
Name*	Aurora
Description	VM connection that uses the Aurora transparent log in
Host	PC40722.uk.rebushr.com
Port	9023
Username	Aurora
Password

Also, ensure that this user can connect to either an OpenClient session or an MFC Client session by running the **runproiv.sh** script which was created during the installation process. If required, update the prompts specified to allow processing of the Unix login.



base / Client Connector

Profile

default

VIRTUAL MACHINE APPLICATION CONNECTOR CLIENT CONNECTOR ANALYTICS LICENSING SYSTEM DATABASE LEXICON

CLIENT CONNECTOR / SETTINGS OPERATIONS

VM Connections

- VM Connections
 - Default
 - Aurora
 - Unix Prompt Connection Properties

Unix Prompt Connection Properties

Username*	ogin:
Password*	assword:
Success*	\$
Failure*	ncorrect

When configuring Aurora, it is important to ensure that the Document Domain and Host Machine are the same otherwise Aurora will not successfully launch tabs within the framework.

4.1.1.3 Browser Security when using Aurora and the Open Client

Changes in browser security mean that cookies with the same name cannot be used in both HTTPS and HTTP requests. This means that if you have a HTTPS Aurora session and you try to open a HTTP Open Client session then the Open Client session will fail with a 404 error. In order to use both Aurora and Open Client in the same browser they must both use the same protocol either both HTTPS or both HTTP.

4.2 Application Connector

Application Connector has no differences over 9.0

4.3 Analytics

Analytics has no differences over 9.0

4.4 Licensing

Licensing has no differences over 9.0

4.5 Dashboard (zbd, lex, systemdb)

The v9.1 Dashboard has received a number of usability improvements since v9.0. This should make it clearer to the user whether a given configuration has been deployed following creation or modification.

5 Platform and Database specific Information

5.1 64-bit Linux

This release is supported on Linux operating systems as per the supported platforms section above. It is very important that the operating system has all vendor-supplied patches installed.

5.1.1 Supported Java Runtime Environments

PROIV on 64-bit Linux (glibc) is bundled with the Microsoft JRE Version 11, the installation uses this, there is no option to search for a different JRE during installation.

5.1.2 PostgreSQL

The reliance of the PostgreSQL database solution, in PROIV v9.0, on the ODBC layer has been removed. The solution now makes use of native PostgreSQL database drivers and is much easier to configure. The drivers required by PROIV on the Linux platform can be found in the following directory which is included in the LD_LIBRARY_PATH environment variable in the runproiv script:

```
$PROIV_HOME/virtual_machine/lib
```

If you are on the latest Redhat Enterprise Linux version 8 and want to use PostgreSQL, then you need to disable the PPM and remove the libcurl directory from the LD_LIBRARY_PATH setup in runproiv.sh as above.

See Knowledge Base article KB0019268

5.1.3 Oracle

The Linux platform includes the Oracle 19c Instant client, it can be found in the directory of your installation as shown below. This directory is added to the LD_LIBRARY_PATH environment variable as part of the *runproiv* script. The Oracle 19c Instant Client is the minimum version required on 64-bit Linux platforms.

```
$PROIV_HOME/virtual_machine/lib/instant_client
```

Note: On Redhat Enterprise Linux version 8 the libnsl library is required for backwards compatibility. If this library is missing then it should be installed using the following yum command:

```
➤ yum install libnsl
```

Oracle Performance is much better if the Oracle connection information is specified by an Oracle System Identifier (SID). Specify the name of the SID by exporting ORACLE_SID in

your PROIV start-up script. The Connection string then only needs to specify username/password.

5.1.4 SQL Server

Support for SQL Server is enabled through unixODBC. The unixODBC shared libraries must be added to the LD_LIBRARY_PATH in the *runproiv* script; failure to do so will result in the PROIV SQL Server interface not initialising correctly.

There are specific version requirements for unixODBC and the Microsoft odbc driver, please refer to the section [above](#).

Access to SQL Server is via an ODBC DSN (Data Source Name), these are configured as per the unixODBC documentation. By way of example; the configuration is a two part process; first the unixODBC driver manager needs to know about the Microsoft Linux ODBC Driver; this is typically done by adding a section similar to:

```
[ODBC Driver 17 for SQL Server]
Description=Microsoft ODBC Driver 17 for SQL Server
Driver=/opt/microsoft/msodbcsql17/lib64/libmsodbcsql-17.3.so.1.1
UsageCount=1
```

To the `/etc/odbcinst.ini` file.

The data source is then configured; this can either be a system data source in which the system config file `/etc/odbc.ini` or the users specific `.odbc.ini` located in their home directory. The content would include a section similar to the following:

```
[Stock]
Driver = ODBC Driver 17 for SQL Server
Server = localhost,1433
Description = Stock Control Database
```

In this case the Stock data source is defined as being on server local host accessible on port 1433.

To configure PROIV to access the database as the default SQL database you would set the connection string to

username/password/Stock

where username and password are replaced with the correct credentials for the database.

5.2 AIX

This release is supported on AIX operating systems as per the supported platforms section above. It is very important that the operating system has all vendor-supplied patches installed. See the Supported Platforms section for the currently supported Technology levels.

5.2.1 Supported Java Runtime Environments

PROIV on 64-bit AIX supports Java 11 Runtime Environments. The installation process initially refers to the JRE path that is set in the JAVA_HOME variable; in case not found, it looks in the following directories (as defined using a regular expression) for an Oracle JRE 11 and will use it in preference as it is found.

/usr/*[jJ][aA][vV][aA]*11*	/opt/*[jJ][aA][vV][aA]*11*
/usr/*[jJ]2[sS][Ee]*	/opt/*[jJ]2[sS][Ee]*
/usr/*[jJ][dD][kK]*	/opt/*[jJ][dD][kK]*
/usr/*[jJ][aA][vV][aA]*	/opt/*[jJ][aA][vV][aA]*
/usr/*[jJ][aA][vV][aA]*/*[jJ]2*	/opt/*[jJ][aA][vV][aA]*/*[jJ]2*
/opt/*[jJ]2*	/usr/*[jJ]2*

5.2.2 Oracle

The AIX platform includes the Oracle 19c Instant client, it can be found in the \$PROIV_HOME/virtual_machine/lib/instant_client directory of your installation. This directory is added to the LD_LIBRARY_PATH environment variable as part of the *runproiv.sh* script.

Oracle may generate a warning return code “ORA-24347” when NULL columns are used in aggregate functions. This happens for all PROIV V8 and V9 versions. PROIV regards the warning as an error and rolls back the transaction. Within PROIV, this is only likely to happen with full function SQL.

You can instruct PROIV to ignore the Oracle warning by disabling the Enable Warnings As Error switch in the Oracle section of the Virtual Machine configuration in the PROIV Dashboard.

Oracle Performance is much better if the Oracle connection information is specified by an Oracle System Identifier (SID). Specify the name of the SID by exporting ORACLE_SID in your PROIV start-up script. The Connection string then only needs to specify username/password.

5.3 64-bit Windows

This release is supported on Windows operating systems as per the supported platforms section above. It is very important that the operating system has all vendor-supplied patches installed.

5.3.1 PostgreSQL

The reliance of the PostgreSQL database solution, in PROIV v9.0 onwards, on the ODBC layer has been removed. The solution now makes use of native PostgreSQL database drivers (libpq). If you wish to use PostgreSQL as your database you will need to download and install the PostgreSQL software from <https://www.postgresql.org/>. The Windows “Path” environment variable should be modified to include the paths to the PostgreSQL lib and bin folders.

5.4 Operating System Authentication to connect PROIV with Oracle database

On UNIX platforms, PROIV supports user authentication to establish connection between PROIV sessions and an Oracle database. You can configure an Oracle Database to authenticate (that is, verify the identity of) users or other entities that connect to the database. Authentication must be configured in two ways, such as through the PROIV application and from the Oracle database.

On the PROIV side, the username and/or password provided in the PROIV Dashboard settings should be blank. On the Oracle database side, you must set Oracle configuration to allow OS authentication. For more information, refer to Oracle documentation.

This will not affect standard database authentication of credentials, however should problems arise it is possible to connect using the existing method by setting the OCI Simple Logon property in the PROIV Dashboard. This cannot be used with OS authentication.

5.5 File System Support

PROIV is not supported on shared file systems such as SAMBA (SMB/CIFS), or NFS

6 Security Vulnerabilities and Exposures

6.1 Introduction

As of version 9.902, Common Vulnerabilities and Exposures (CVEs) that have been addressed, will be reported separately in this section of the release notes. Resolved PROIV issues and previous CVEs are now in section 7.

6.2 CVEs addressed for the 9.1006.5 Service Release

Description	PROIV Ref.
CVE-2022-45688 A stack overflow issue in Hutool-JSON allows potential Denial of Service attacks	236822
CVE-2022-44729 Server-Side Request Forgery (SSRF) vulnerability in Apache's XML Graphics Batik component	236823
CVE-2022-40151 Using Xstream to serialize XML data may cause vulnerability to Denial of Service attacks (DOS)	236824
CVE-2023-33201 Bouncy Castle before v1.74 is affected by an LDAP injection vulnerability	236825

6.3 CVEs addressed for the 9.1005.4 Service Release

Description	PROIV Ref.
CVE-2023-2976 in Guava	229398
CVE-2023-35116 in Jackson-Databind	229399
CVE-2021-37533 in Commons-Net	229400
CVE-2023-20883 in Spring Boot	229401

6.4 CVEs addressed for the 9.1004.5 Service Release

Description	PROIV Ref.
CVE-2023-32695 in JavaScript socket.io.parser	222673

CVEs addressed for the 9.1003.6 Service Release

Description	PROIV Ref.
Addressed CVE-2022-45688 in XML.toJSONObject of hutool-json v5.8.10	215854
Addressed CVE-2023-26048 in Jetty Web-Server	215855
Addressed CVE-2023-26049 in Jetty Web-Server	215856
Addressed CVE-2023-1370 in json-smart	215857
Addressed CVE-2023-20873 in Spring Boot	215858
Addressed CVE-2023-20860 in Spring Framework	215859

6.5 CVEs addressed for the 9.1001.8 Service Release

Description	PROIV Ref.
Addressed vulnerability in Commons File Upload, CVE-2023-24998	208136

6.6 CVEs addressed for the 9.904.3 Service Release

Description	PROIV Ref.
Addressed CVE-2022-1471, Vulnerability in SnakeYaml constructor class	196134

6.7 CVEs addressed for the 9.903.8 Service Release

Description	PROIV Ref.
Addressed CVE-2022-42003 in Jackson-Databind	191263
Addressed CVE-2022-42004 in Jackson-Databind	191270
Addressed CVE-2022-41704 in Apache XML Graphics	192245
Addressed CVE-2022-42889 in Apache Commons Text	192251
Addressed CVE-2018-11040 in Spring Framework	192258
Addressed CVE-2022-31692 in Spring Security	192267

6.8 CVEs addressed for the 9.902.3 Service Release

Description	PROIV Ref.
Addressed CVE-2017-7658 in Eclipse Jetty Server	189145
Addressed CVE-2022-2048 in Eclipse Jetty HTTP/2 Server	189148

7 Issues

7.1 Resolved Issues

PROIV Version 9.1006 includes fixes for all issues fixed in previous version 9 releases, as detailed below, and fixes in all versions, up to and including PROIV version 8.3R7-SR6. It is recommended that all components in your servers are upgraded to this release.

7.2 Resolved Issues for 9.1006.5 Service Release

There were issues requiring a resolution in this release other than the CVEs as listed in section 6 above.

7.3 Resolved Issues for 9.1005.4 Service Release

Issue No	Description	PROIV Ref.
	Long string performance improvements with PostgreSQL can lead to string corruption (correction to 223188)	233247

7.4 Resolved Issues for 9.1004.5 Service Release

Issue No	Description	PROIV Ref.
PRB0052155	Increasing processing time when a Global Logic that manipulates a long string type is called repeatedly	223188

Resolved Issues for 9.1003.6 Service Release

Issue No	Description	PROIV Ref.
PRB0051928	Shortcuts not rendering and not working in Windows Client	211149
PRB0051996	The behaviour of a Control Bar is different between MFC and Open Client when no '&' is included in the Caption field	214453
	Field shortcuts defined with an '&' character not working in Open Client	215863

7.5 Resolved Issues for 9.1002.4 Service Release

Issue No	Description	PROIV Ref.
PRB0051882	Parse error when REST response body includes a JSON array object	208883
PRB0051955	Open Client does not action the shortcut key while in a global window	212611

7.6 Resolved Issues for 9.1001.8 Service Release

Issue No	Description	PROIV Ref.
PRB0051775	PostgreSQL SEL-ONLY is not returning any rows	203852
PRB0051795	Open Client session hung while in a called paging screen	204702

7.7 Resolved Issues for 9.1000.9 Maintenance Release

Issue No	Description	PROIV Ref.
PRB0051621	Setting enable and visible properties for fields in a different cycle does not work in open client	197265
PRB0051654	License serial number not showing in dashboard	198766
PRB0051774	One-Time Update function that uses FFSQL fails to update a Postgres table	203817

7.8 Resolved Issues for 9.904.3 Service Release

Issue No	Description	PROIV Ref.
PRB0051621	Setting enable and visible properties for fields in a different cycle doesn't work in open client	197265
PRB0051654	License serial number not showing in dashboard	198766

7.9 Resolved Issues for 9.903.8 Service Release

Issue No	Description	PROIV Ref.
PRB0051405	Tree control missing and not showing application images	183977
PRB0051496	ProIV Helper Function @VIPWP10 Truncates \$OperatorTo To 3 Characters	190497
PRB0051516	Open Client session hung while holding down the space bar in a Combo-box with auto complete option?	191523

7.10 Resolved Issues for 9.902.3 Service Release

Issue No	Description	PROIV Ref.
PRB0051433	P4sshLink being called with unencrypted password	186851
	Upgrade process not removing redundant Java Archive files	188860

7.11 Resolved Issues for 9.901.4 Service Release

Issue No	Description	PROIV Ref.
PRB0051322	Intermittent session crash during screen, tab and window navigation	177313

Issue No	Description	PROIV Ref.
	Updated PostgreSQL JDBC Driver to mitigate CVE-2022-31197 in the Virtual Machine's Java layer and the Lexicon components	180056
PRB0051362	Combo-box with Auto Complete terminates session while in Open Client	180817

7.12 Resolved Issues for 9.900.9 Maintenance Release

Issue No	Description	PROIV Ref.
	Confirm On Delete Checkbox setting not remembered/disabled after toggling the Smooth Paging checkbox in VIP Paging Cycle Properties Tab.	165682
	Mitigate CVE-2021-28168 Eclipse Jersey local information disclosure vulnerability	170162
	Mitigate CVE-2022-23437 Apache Xerces Java (XercesJ) XML parser vulnerability within Client connector	170279
	Mitigate CVE-2022-2048 Jetty HTTP/2 potential Denial of Service	175455

7.13 Resolved Issues for 9.804.3 Service Release

Issue No	Description	PROIV Ref.
	Upgraded Xerces library to mitigate CVE-2022-23437	171674

7.14 Resolved Issues for 9.803.2 Service Release

Issue No	Description	PROIV Ref.
	Mitigate CVE-2022-23437 in Apache Xerces Java XML Parser	170189
	Mitigate CVE-2022-26520 in PostgreSQL pgjdbc before v42.3.3	169888

7.15 Resolved Issues for 9.802.9 Service Release

Issue No	Description	PROIV Ref.
PRB0050962	A custom SOAP SSO request does not include a body element namespace attribute	160854
	Update Jetty to version 9.6.46 to address dependency check failures	163772
	Addressed Jackson-databind vulnerability CVE-2020-36518	163773
	Addressed Postgresql vulnerability CVE-2022-21724	163774
	Addressed Apache POI vulnerability CVE-2022-26336	163775
	Addressed serialise-javascript library vulnerabilities NPM-1066528 and NPM-1066701	163778
	Addressed Spring Framework - SpringShell CVE-2022-22965	164337
PRB0050995	System Services slow to auto start and ClientServices do not auto start	162193

Issue No	Description	PROIV Ref.
PRB0051030	Logic Editor - Pressing Tab Key always moves the cursor to column position 4	163957

7.16 Resolved Issues for 9.801.4 Maintenance Release

Issue No	Description	PROIV Ref.
PRB0050865	License serial number not showing in Dashboard	154845
PRB0050852	Custom application resources not loading in Open Client	154924
PRB0050862	Comment / Uncomment in logic editor not consistent	155100
PRB0050898	9.70 new features section inaccurate in release notes	156813
PRB0050907	Difference in Oracle report performance between PROIV v8 and v9	157531
	Excessive reparsing of SQL when using PostgreSQL	160223
PRB0050936	Unable to run Bulk Build wrapper @VIPWP03 twice – see Known Issues section below.	159172

7.17 Resolved Issues for v9.800.16 Maintenance Release

Issue No	Description	PROIV Ref.
PRB0050689	Upgraded log4j to 2.17.1 to resolve CVE-2021-44832	148662
PRB0050699	Icons outside of dropdowns not greyed out and not working	149220
PRB0050748	Incorrect line number reported in logic error message	151517
PRB0050255	Image/logo is not getting displayed in a pdf doc	124520
PRB0050648	Recent function tab includes genned functions following a bulk build	147455
PRB0050651	Custom wallpaper cleared after having viewed the value variables definition window	147473
PRB0050668	Postgres Prepared Statements not being deallocated correctly	148189
PRB0050663	Unable to insert a Postgres record that includes the use of a host variable integer value	147972

7.18 Resolved Issues for v9.75.3 Service Release

Issue No	Description	PROIV Ref.
PRB0050650	Upgraded Log4j2 to version 2.17 to resolve Security Vulnerability CVE-2021-45105	148159

7.19 Resolved Issues for v9.74.7 Service Release

Issue No	Description	PROIV Ref.
PRB0050650	Upgraded Log4j2 to version 2.16 to resolve Security Vulnerabilities CVE-2021-44228 and CVE-2021-45046	147496
	Updated Installation to remove Java Archive (jar) files which are no longer required	147877
	Update installation to remove temp and work directories during upgrade	147990

7.20 Resolved Issues for v9.73.3 Service Release

Issue No	Description	PROIV Ref.
	Resolved non-fatal error on version upgrade	136368
PRB0050526	Corrected display order of variables in Environment section of the Dashboard	142993

7.21 Resolved Issues for v9.72.4 Service Release

Issue No	Description	PROIV Ref.
	Corrected incorrect behaviour in PROIV Developer, Function Import screen	137775
PRB0050415	Combo-box selection not working with down key input when only one record to select (Windows Client fix)	135885

7.22 Resolved Issues for v9.71.8 Service Release

Issue No	Description	PROIV Ref.
PRB0050336	Removed JavaDocs feature from SSO Gallery see known issues	129265
PRB0050324	Incomplete information on JRE path setting in release notes	128666
PRB0043655	Export wrapper does not export Display Mask: DATE4 to JSON format files	89969
PRB0050351	PROIV services do not auto start on Linux/Unix Operating Systems	130313
PRB0050363	Allow GUI profiles to inherit from base profiles configured from Non-Gui profiles	130727
PRB0050393	Non-Source Export ignoring selected terminal types	133984
PRB0050286	Vulnerabilities in Aurora xstream component resolved.	127770

7.23 Resolved Issues for v9.70.18 Maintenance Release

Issue No	Description	PROIV Ref.
PRB0050255	Image/Logo not being displayed in PDF Document output	124520
PRB0050296	Operator and CoDiv wrong way round in Information text box following "Operator Security Copy"	127341

7.24 Resolved Issues for v9.65.3 Service Release

Issue No	Description	PROIV Ref.
PRB0050172	Remote aurora session dashboard displays "Feed not available" for widgets: Favourties; Activity History; Outstanding Tasks when accessed using localhost	117705

7.25 Resolved Issues for v9.64.4 Service Release

Issue No	Description	PROIV Ref.
PRB0043984	List based search and replace loses code when the resultant line of logic would be greater than the maximum line length for a logic (100 characters) – Note: Additional to changes for v9.62.3	114940

7.26 Resolved Issues for v9.63.8 Service Release

Issue No	Description	PROIV Ref.
PRB0044004	Allow softkeys toolbar to be set at the bottom of the Open Client panel	106667
PRB0044102	Installation Upgrade process now replaces out of date Jar files in javalib folder	110279
PRB0050014	High memory usage observed during and after SOAP interface calls.	111097
PRB0050016	ClientConnector max war contains old version of proiv-lite-client javascript libraries	112343

7.27 Resolved Issues for v9.62.3 Service Release

Issue No	Description	PROIV Ref.
PRB0043883	PROIV Virtual Machine failing to start via Application Services on Windows	102760
PRB0043984	List based Search and Replace may hang when the resultant line of logic would be greater than 100 characters long	105544
PRB0044019	PostgreSQL alternate null indicators not set up properly in Full Function SQL when receiving data from a table	106378
PRB0044030	Setting "SessionClosedCommand.dialog = false" causes Java Script Exception when logging off in Open Client	106549

7.28 Resolved Issues for v9.61.8 Service Release

Issue No	Description	PROIV Ref.
PRB0043755	Library missing error when trying to connect GUI client for V10	94418
PRB0043793	Custom authentication for Aurora not working	95937

Issue No	Description	PROIV Ref.
PRB0043837	Hosting Aurora on separate machine from default installation server, see section 3.5.4	100725
PRB0043788	Gateway VM Licence Instigator ID generator not unique across different servers	100790
PRB0043873	Gateway/Client Virtual Machine Crashes	102206

7.29 Resolved Issues for v9.60.21 Maintenance Release

Issue No	Description	PROIV Ref.
PRB0043196	Function interface map copy over is ignoring called functions and using last function in list	68288
	Legacy Render Mode incorrectly defaults to true and should be false	82987
	SQL Timeout value, used by SQL Server, is defaulting to -1 (Do not wait if locked) and should be defaulting to 5 seconds	88987
PRB0043731	Added option to the PROIV Dashboard to enable automatic insertion of Lock Hints in Full Function SQL Statements	93239

7.30 Resolved Issues for v9.54.9 Service Release

Issue No	Description	PROIV Ref.
PRB0043568	Logic search of given keywords fails on a saved function list	87718
PRB0043592	Dashboard diagnostic setting does not output a specified trace file unless the Misc value is set greater than 0	88334
PRB0043654	Secure SSL Connection for Windows doesn't work	89940
PRB0043661	Adding a SOAP service with an output parameter of type array is not deployed by dashboard	90257

7.31 Resolved Issues for v9.53.4 Service Release

Issue No	Description	PROIV Ref.
PRB0043323	Logic editor 'settings' dialog does not allow developers to change font sizes – added a font size combo box.	74763

7.32 Resolved Issues for v9.52.20 Service Release

Issue No	Description	PROIV Ref.
PRB0043358	Validation message doesn't disappear when trying to save a SOAP webservice	77514
PRB0043360	Cannot save a function under SOAP service in PROIV Dashboard	77531
PRB0043396	Failed to import RESTful Web Services	79995
PRB0043408	A Screen function does not use two custom graphics in the Open Client session	81044

Issue No	Description	PROIV Ref.
PRB0043404	RWS Max Request Size is not converted to bytes prior to content size check – the value entered is now in Mbytes with a maximum of 2000.	81196
PRB0043414	An Open Client session ComboBox does not list all drop down options alongside an Active Paging screen	81296
PRB0043420	A Listbox is incorrectly positioned in an Open Client screen as Legacy Render Mode defaults to true in version 9. This problem can be rectified by changing Legacy Render mode to false in the PROIV dashboard.	81702
PRB0043424	Cannot specify host for connector. See section 3.14.1	81979

7.33 Resolved Issues for v9.51.10 Service Release

Issue No	Description	PROIV Ref.
PRB0043102	When a record is added to an auto-expanded paging screen it is not rendered as the last record in the screen	60355
PRB0043209	Memory leaks using PostgreSQL on Windows	68738
PRB0043214	sel-range does not return the expected postgres data set	68818
PRB0043240	incorrect sql script output by developer for a file with alternate index	69390
N/A	Listbox RestoreSettings() does not work in MFC Client	70070
PRB0043269	Inserting a single key part in alternate mapping does not work	70673

7.34 Resolved Issues for v9.50.14 Maintenance Release

Issue No	Description	PROIV Ref.
PRB0042696	In Lite Client documentation, a link to Component Templates fails	46170
PRB0042035	Services and Uninstall PROIV Version 9 option are missing	46181
PRB0042260	TASK_EXIT() logic processing doesn't match the documentation	46183
PRB0042596	Error reported when exporting numeric Value Variables to JSON with &#@DECEDT enabled	46196
PRB0042382	Not able to rename or delete the open client VM connection on a profile when copied from another profile	46197
PRB0042270	Dashboard error messages after upgrade	46252
PRB0042785	Paging Areas do not permit mouse navigation by clicking on the Paging Icon.	47478
PRB0043020	Unable to use supplied ActiveX MSComCtl2.MonthView.2 [MSCOMCT2.OCX] until Registry HKEY_CLASSES_ROOT License key loaded	57013

Issue No	Description	PROIV Ref.
PRB0043076	Dynamic Text not lining up correctly in Open Client when editing a line on a Paging Screen	59653

7.35 Resolved Issues for v9.43.2 Service Release

Issue No	Description	PROIV Ref.
PRB0043102	When a record is added to an auto-expanded paging screen it is not rendered as the last record in the screen	60355
PRB0043185	Access violation errors seen, leading to termination of the Virtual Machine service, when using transparent login.	67390 52120

7.36 Resolved Issues for v9.42.27 Service Release

Issue No	Description	PROIV Ref.
PRB0042615	Corrected processing of graphics filenames on the Windows client which are now case sensitive when obtaining the file from the internet	46253
PRB0042882	Product upgrade failed to start services	55720

7.37 Resolved Issues for v9.41.11 Service Release

Issue No	Description	PROIV Ref.
PRB0042382	Not able to rename or delete the Open Client VM connection on a profile when copied from another profile	27466
PRB0042485	Session hangs on search for unreferenced PROIV objects	46198
PRB0042501	Dynamic icons no longer respond to return key when focus has moved to the icon field	46200
PRB0042809	Receiving error message "Numeric Conversion Error - External Type of Numeric" when accessing a numeric field containing NULL value on a PostgreSQL database	48937
PRB0042837	SSH Connection failure on Windows Client	49906
PRB0042910	Report failing to print with "unable to find system default printer" error	54271

7.38 Resolved Issues for v9.4.28 Maintenance Release

Issue No	Description	PROIV Ref.
PRB0042099	Inconsistencies around sizes in defining numeric scratch variables	46188
PRB0042523	Value variable search does not return numeric value variables with matching value	46190
PRB0042702	Some logic commands (requiring a user interface) terminate the task when they are executed	46195

Issue No	Description	PROIV Ref.
PRB0042256	Tracing output initialised from new config incorrect	46105
PRB0042255	Tracing headers only show Base-default config settings	46106
PRB0042694	Increased the JNI Max Memory limits on the PROIV Dashboard	46255

7.39 Resolved Issues for v9.3R0-SR2 (Build 9.3.1.29)

Issue No	Description	Linked Issues
PRB0042809	Receiving error message "Numeric Conversion Error - External Type of Numeric" when accessing a numeric field containing a NULL value on a Postgres 9.6 database	

7.40 Resolved Issues for v9.3R0-SR1 (Build 9.3.1.27)

Issue No	Description	Linked Issues
N/A	Call stack dump causes stack overflow exception	ZB-2249
PRB0042208	Progress bar loops multiple times during import in Open Client	ZB-2151
PRB0042458	Session crash on attempt to use logic to convert an empty string	ZB-2220
PRB0042605	Superfluous information being output in trace files	ZB-2234
PRB0042467	The dashboard permits the addition of a duplicate environment variable name	ZB-2196
PRB0042388	Custom message.properties file is incorrectly overridden by default message.properties	ZB-2182
PRB0042466	Incorrect information in documentation topic id 720295	ZB-2195
PRB0042603	Client Services stopping unexpectedly with "Out of Memory" error	ZB-2233
PRB0042667	SQL Environment variable does not get connection string from SQLDEFAULT setting	ZB-2243
PRB0042568	Display only fields have rendition issue in MFC Client whereas correct in Open Client	ZB-2239
PRB0041866	Non-standard network errors received from licensing comms code	PX-3310
PRB0042650	CTRL Key opens existing object calls and their Maps window	ZB-2238
PRB0042384	Run Time session shows the environment variable only after a regen	ZB-2180
PRB0042597	Numeric conversion error when accessing a Postgres table with DATE conversion	ZB-2232
PRB0041679	Linux installation incorrectly set start service reference for System Manager	ZB-1974
PRB0042442	Environment variable set in a new profile is incorrectly reset to the environment variable in the default profile	ZB-2188
N/A	Resolved some minor Memory leaks in Windows Virtual Machine	ZB-2242

7.41 Resolved Issues for v9.3R0 (Build 9.3.1.9)

Issue No	Description	Linked Issues
PRB0041965	Gateway server setting "Response Timeout" can now exceed 3600 seconds	ZB-2099
PRB0041999	AutoMap allows Array to be mapped to existing non-Array variable	ZB-2106
PRB0042037	New Profiles missing from the dropdown list until the dashboard is closed and re-opened	ZB-2114
PRB0042141	Missing p4api Libraries now including in distributions	ZB-2132
PRB0042178	Bulk Build wrapper is setting @\$COM6	ZB-2143
PRB0042251	Logic editor freezes when you try to copy some text while referencing a variable	ZB-2159
PRB0042473	Static attributes are lost when making changes in Forms Designer	ZB-2197
N/A	Memory climbed dramatically during Bulk Gen	ZB-2214
PRB0041919	Open Function dialog retained an incorrect name entered after correction was applied	ZB-2083
PRB0042188	Select/Sort logic disappeared on viewing cycle properties	ZB-2145
PRB0042501	Dynamic icons no longer respond to return key – See section 3.1.2	ZB-2205
PRB0042169	Updated Jabsorb jar file to later version 1.3.2	

7.42 Resolved Issues for v9.2R0-SR6 (Build 9.2.1.50)

Issue No	Description	Linked Issues
PRB0042567	@RFUNCT executed whenever a C-ISAM file is accessed with TP_ROLLBACK enabled	ZB-2237

7.43 Resolved Issues for v9.2R0-SR5 (Build 9.2.1.49)

Issue No	Description	Linked Issues
PRB0042605	Non-critical information included in trace file when only critical levels set.	ZB-2234

7.44 Resolved Issues for v9.2R0-SR3 (Build 9.2.1.47)

Issue No	Description	Linked Issues
PRB0042292	Corrected errors and added missing information in Release Notes	ZB-2167
PRB0042254	Successive calls to a task result in an error when tracing enabled	ZB-2161

7.45 Resolved Issues for v9.2R0-SR2 (Build 9.2.1.45)

Issue No	Description	Linked Issues
PRB0042192	p4api protocol change affects passing of Array elements	ZB-2146
PRB0042176	Application Paging Model property is reset by a function 'Build' but is left unchanged by a combined function 'Build & Run'	ZB-2142
PRB0042175	Pressing F3 when creating a new function gives an error	ZB-2141
PRB0042159	Parameter '\$EndOfProcessStatus' is not populated on return from delete wrapper @VIPWP13	ZB-2134
PRB0042118	Display Only Dynamic Icon is not responding	ZB-2128
PRB0042112	Exporting a function as 'vpx' reports an error whereas exporting as 'json' doesn't	ZB-2126
PRB0042128	Developer Auto-Define truncates non-ASCII characters found in scratch variables	ZB-2124
PRB0042057	Documentation does not specify file must be moved to prodata	ZB-2118
PRB0042051	Attributes set for static objects are not shown in Green Screen	ZB-2117
PRB0041981	Isin of developer.out reports error with lcgrouppro. See known issues section, below, for pre-upgrade instructions	ZB-2104

7.46 Resolved Issues for v9.2R0-SR1 (Build 9.2.1.38)

Issue No	Description	Linked Issues
PRB0042021	Variable names with extended characters reported as errors by the logic editor – To Enable extended characters, set the value variable &@\$@ParserIgnoresExtendedChars to Y	ZB-2112
PRB0041876	Ctrl-Break kills Unix kernels when JVM has been instantiated – See "Known Issues" below.	ZB-2071
PRB0041824	Developer wrapper function @VIPWP02 fails to import JSON	ZB-2043
PRB0041803	Function selection using @VIPW Partial, ignores the function type	ZB-2026
PRB0041937	If the REST response header mime-type is set to application/json then http API tools "soapui" and "postman" incorrectly received Content-Type as text/plain	PX-3312

7.47 Resolved Issues for v9.2R0 (Build 9.2.1.30)

Issue No	Description	Linked Issues
PRB0041872	Incorrect JRE Path being set in Dashboard	
PRB0041818	p4serp throws Java Exception when uploading a Licence file	
PRB0041815	UMSG time delay not working correctly	

Issue No	Description	Linked Issues
ZB-1984	Open Client Fails to Re-deploy correctly after changing the code page	
PRB0041678	Logical database for Pro-Isam not supported in deployment model	
PRB0041557	EXPAND is not documented or listed as a reserved word	
PRB0041542	Terminal Type is goes blank when connect via SSH is selected	
PRB0041534	PROIV Client Crashes when activating User Runtime Interface	
PRB041239	The report "File / Function Xref Analysis Report" does not say which file it is for.	
PRB0041227	Cannot set SQL_NOSIG equivalent configuration parameter via dashboard	
ZB-1613	Port conflict warning preventing Application Connector from starting	
PRB0041104	Analytics Health Check gives 500 error	
PRB0041448	Page size varies when orientation changes in ExcelSSO	

7.48 Known Issues

The wrapper function @VIPWP03 is a run-time function which gives the user the ability to bulk build functions outside of PROIV Developer. If this function is run within the PROIV Developer then the programmer should save before and the restore after the value held in Communication Variable 6 (@\$COM6)

During installations on the Solaris operating system, the installer may report that installation is complete before "isin" has completed processing the developer.out or administrator.out files. Please allow a few minutes after the "Installation Complete" message before attempting to use the software.

The Health Check feature does not work on the Microsoft Windows Edge browser in early versions of Windows 10. This is due to a known issue in the Edge Browser which was corrected in the revised October 2018 Release of the Windows 10 operating system, version 1809.

The "Reduce JVM OS Signals" must be set to true for Unix/Linux platforms and false for Windows. On previous versions, prior to 9.2R0-SR1, the default for all operating systems was false and so this will need to be manually changed in the PROIV Dashboard for all Unix/Linux configurations. In the PROIV Dashboard, navigate to the Virtual Machine, Server-Side Objects section and enable the "Reduce JVM OS Signals" setting. New installations now set the toggle correctly so it should not be changed. The toggle may be removed in a later release.

Over time the number of files in the temp folders of ApplicationServices and ClientServices will increase due to deploying and re-deploying configurations. You should periodically

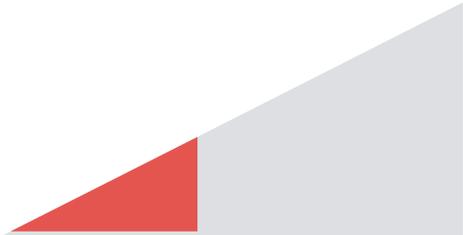
remove these files to reduce problems with disk space and the impact on the time it takes to uninstall and re-install the application.

There is a difference in behaviour between the Open Client and the Windows Client when processing graphics assigned to an Icon when they are to be obtained from the internet. The Windows Client requires the internet settings to specify the URL of the graphics location on the internet and this is then used to access a file specified as the graphic for the icon. The Open Client allows the full URL, including the name of the file, to be assigned to the icon. From version 9.42 the name of the file used for the Windows Client is case sensitive (PRB0042615).

The default for the PROIV Virtual Machine's (VM) config setting for `prov.virtualMachine.database.driver.general.enableSQLAlarm` is true. The default should be false otherwise a system crash may occur in the VM. This is resolved in version 9.50 onwards and the feature is now deprecated as it is no longer relevant.

Under Windows 10 the `@DemoFileSendRecieve` demo function will not transfer files to the default boots directory if the running process does not have permission to do so.

The JavaDocs feature in the SSO Gallery only works if the PROIV Virtual Machine is held locally. It will not work where the PROIV Virtual Machine is installed on a remote server and so does not work for Linux or Unix installations. As a result the feature has been removed and will be considered for a suitable alternate implementation in the future. The Java Documentation for SSOs can be found in the `javadocs` folder of your virtual machine installation folder.

A graphic element consisting of a large, light gray triangle pointing upwards and to the right. A smaller, solid red triangle is positioned at the top-right corner of the gray triangle, partially overlapping it.

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