

# Fastpath Lifecycle Administrator's Guide

Fastpath Solutions, LLC

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**FASTPATH**

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# Chapter 1

## Introducing Fastpath Lifecycle

Fastpath Lifecycle is a web based application providing Identity life-cycle management and governance capabilities for users which need to interact with the enterprise. Examples of such users include staff, students, contractors, partners, suppliers or customers, who need to have access to online services or applications, according to their role within or relationship to the organisation.

### 1.1 Features

- End-to-end life-cycle management of identities
- Manage workforce, B2B, B2C and contractor scenarios
- Authoritative source or directory modes
- Devolved administration of Identities
- Out-of-the-box delegated approval and certification Workflows
- Configurable Workflow engine for custom scenarios
- Local, SAML 2.0, and LDAP Authentication
- Self Service registration, attribute management, and access requests
- Self Service password and username recovery
- Role-based architecture
- SCIM Provisioning
- SCIM compliant RESTful API
- OAuth 2.0 authorisation flows
- Audit trail
- Integration with commercial Identity and Access Management products including Ping Identity, Microsoft and NetIQ

## 1.2 Supported Platform

- Debian GNU/Linux 11 Stable (“Bullseye”) (amd64) Recommended or Red Hat Enterprise Linux 8 (RHEL8)
- Apache 2.4 or later
- MariaDB 10.3 - 10.11
- PHP 7.3 or 7.4

## 1.3 Server Requirements

The minimum server requirements are as follows:

- Single x86\_64 CPU, 2 cores.
- 4 GB RAM
- 16 GB storage

(Either a physical or virtual server can be used.)

Please note that running the minimum spec. hardware is not always ideal in production, especially where a lot of data is expected to be stored and/or heavy usage is expected. Additional RAM will improve caching, and additional processors/cores will improve web application performance. Though a faster processor clock speed will obviously help, more cores will offer more consistent performance. Don't forget that your database server needs to scale to be capable of responding quickly with your database size now and in the future.

The storage figure given is suitable for up to 1000 Identities, after that a reasonable guideline is to add another 1 GB of storage for each 1000 additional Identities (or part thereof).

## 1.4 Third-Party Software Notice

Fastpath Lifecycle includes the following third party software:

- Swift Mailer, Copyright (c) 2013-2016 Fabien Potencier, MIT Licence
- [Twitter Bootstrap](#) v3.3.6 Copyright 2011-2015 Twitter, Inc. [Licensed under MIT](#)
- Bootstrap DateTimePicker, Copyright (c) 2015 Jonathan Peterson (@Eonasdan), [MIT Licence](#)
- Moment.js, Copyright (c) 2011-2016 Tim Wood, Iskren Chernev, Moment.js contributors, [MIT Licence](#)
- FontAwesome Free, Copyright (c) 2016 @fontawesome - fontawesome.com, [Various Licences](#)
- DataTables, Copyright (C) 2008-2020, SpryMedia Ltd., [MIT Licence](#)
- jQuery, Copyright 2016 jQuery Foundation, Inc. and other contributors, MIT Licence
- Summernote JS, Copyright 2013-2015 Alan Hong. and other contributors, MIT Licence
- Respond.js, Copyright 2013 Scott Jehl, MIT Licence
- php-jwt, Copyright (c) 2011, Neuman Vong, BSD-3 Clause
- oauth2-server-php, Copyright (c) 2014 Brent Shaffer, MIT Licence
- Doctrine Lexer, Copyright (c) 2006-2013 Doctrine Project, MIT licence
- Egulias/EmailValidator, Copyright (c) 2013-2016 Eduardo Gulas Davis, MIT Licence
- Min Hur Bootstrap toggle, Copyright (c) 2011-2014 Min Hur, The New York Times Company, MIT Licence
- CodeMirror, Copyright (C) 2017 by Marijn Haverbeke and others, MIT Licence
- Monolog, Copyright (c) 2011-2019 Jordi Boggiano, MIT Licence
- Illuminate Cache, Copyright (c) Taylor Otwell, [MIT Licence](#)
- Illuminate Redis, Copyright (c) Taylor Otwell, [MIT Licence](#)
- Illuminate Container, Copyright (c) Taylor Otwell, [MIT Licence](#)

Source code to third party open source software used by Fastpath Lifecycle is available from Fastpath Solutions, LLC. upon request.

By email: [support@gofastpath.com](mailto:support@gofastpath.com)

By post: Technical Support. Fastpath Solutions, LLC, 4093 NW Urbandale Drive, Urbandale, IA 50322. USA.

## **1.5 Systems Administrator's Guide**

This guide introduces the main topics of interest for Systems Administrators. The following chapters provide instructions on installing, configuring and maintenance of the system.

For assistance with common tasks, such as managing identities (users), using workflows, and controlling access, refer to the User's Guide.

# Chapter 2

## Installing

Before installing for the first time or upgrading from a previous version, including upgrading from ARMS, please **read the Release Notes for each version** that you received with the installation package in full. The Release Notes have important information about the version of the software you are installing and contain instructions for upgrading.

### 2.1 Preparing the Platform

Fastpath Lifecycle is designed to run on 64-bit (amd64) Debian GNU/Linux or Red Hat Enterprise Linux. A standard headless (no-gui) installation of either of these operating systems provides a suitable base.

As a PHP application Fastpath Lifecycle requires the following packages, and **these and other dependencies will be installed automatically as you follow the instructions under [Installing the Debian Package](#) below.**

logrotate, virtual-mysql-client, libapache2-mod-php (>=7.3), php-redis (>=4.2.0), php-cli (>=7.3), php-ldap (>=7.3), php-mysqlnd (>=7.3) or php-mysql (>=7.3), php-json (>=7.3), php-gd (>=7.3), php-curl (>=7.3), php-mbstring (>=7.3), php-xml (>=7.3), php-luasandbox (>=3.0.3), lua5.1 (>=5.1), liblua5.1-0 (>=5.1)

### 2.2 Installing the Debian Package

Fastpath Lifecycle is typically shipped as a Debian .deb package and a Red Hat .rpm package. To install the Package and its dependencies from the console, first make sure your system is up to date and then run the following commands:

**Note:** Package Filenames will vary, where VERSION-NUMBER is shown below, replace this with the specific version number you are installing.

#### 2.2.1 Installing on Debian (Recommended)

```
sudo apt install ./iga_VERSION-NUMBER_amd64.deb
```

Where VERSION\_NUMBER is the version of the product you are installing.

#### 2.2.2 Installing on Red Hat Enterprise Linux 8

First upgrade PHP to the required version:

```
sudo dnf module disable php
sudo dnf module enable php:7.3
sudo dnf update php
```

Next install the application package.

```
sudo dnf install ./iga-VERSION-NUMBER-1.el8.x86_64.rpm
```

After installing you will need to restart the PHP daemon and Apache web server.

```
sudo systemctl restart php-fpm
sudo systemctl restart httpd
```

## 2.2.3 MySQL/MariaDB Database Server

If you intend to host the Fastpath Lifecycle database on the same server you will also need to install MySQL (MariaDB) using the following commands:

### 2.2.3.1 Installing MariaDB on Debian

```
sudo apt install mysql-server
sudo systemctl enable mysqld.service
sudo systemctl start mysqld.service
sudo mysql_secure_installation
```

### 2.2.3.2 Installing MariaDB on Red Hat Enterprise Linux 8

```
sudo dnf install mariadb-server
sudo systemctl enable --now mariadb.service
sudo mysql_secure_installation
```

Whether you install or connect to an existing MySQL/MariaDB server you should check that the version is suitable to run Fastpath Lifecycle. See [Supported Platform](#) above. e.g.

```
sudo mysql -u root -p --batch -N -e 'SELECT version();'
```

### 2.2.3.3 Transport Layer Encryption (TLS)

Transport Layer Encryption protects data-in-transit between the application and the database server, note that although it offers increased security there is a performance overhead and for some use-cases other options such as a VPN may be better suited.

To enable TLS for your database connection place your CA certificate `mysql-server-ca.pem` into the `/usr/share/ideiio/core/mysql/certs/` directory and add the following configuration to your `settings.ini`.

```
db_tls = '1'
```

Additionally, if you are using a self-signed certificate, add the following:

```
db_tls_verify = '0'
```

## 2.2.4 SourceGuardian runtime and other PHP versions

Fastpath Lifecycle requires the SourceGuardian runtime, and this is installed for you by the Deb/RPM package. Several versions of the runtime are provided; for both thread-safe and non-thread safe Apache.

### 2.2.4.1 SourceGuardian runtime on Debian

The loader for non thread-safe current PHP version is enabled by default. Otherwise, if you need to specify a different version or are using thread-safe web server, please edit the ini config file located at `/etc/php/ideiio-core.ini` to enable the correct SourceGuardian runtime.

For example, if the installed PHP version is 7.4, the configuration file will have to be updated to enable the correct SourceGuardian loader by disabling the current entry, and enabling the line that matches your PHP version.

Run the following command to find out the installed PHP version:

```
php --version
```

If it is not 7.3, go ahead and edit the ini file:

```
sudo vi /etc/php/ideiio-core.ini
```

Then comment out the active line loading the ixed extension and enable the line corresponding with the installed PHP version. For example, if the installed PHP version is 7.4, the lines should look similar to the following:

```
; extension=/usr/lib/php/modules/ixed.7.3.lin  
extension=/usr/lib/php/modules/ixed.7.4.lin
```

After modifying and saving the configuration file, restart the Apache server for the changes to take effect:

```
sudo systemctl restart apache2
```

#### 2.2.4.2 SourceGuardian runtime on Red Hat Enterprise Linux 8

The loader for non thread-safe current PHP version is enabled by default. Otherwise, if you need to specify a different version or are using thread-safe web server, please edit the ini config file located at /etc/php.d/20-ideiio-core.ini to enable the correct SourceGuardian runtime.

For example, if the installed PHP version is 7.4, the configuration file will have to be updated to enable the correct SourceGuardian loader by disabling the current entry, and enabling the line that matches your PHP version.

Run the following command to find out the installed PHP version:

```
php --version
```

If it is not 7.3, go ahead and edit the ini file:

```
sudo vi /etc/php.d/20-ideiio-core.ini
```

Then comment out the active line loading the ixed extension and enable the line corresponding with the installed PHP version. For example, if the installed PHP version is 7.4, the lines should look similar to the following:

```
; extension=/usr/lib/php/modules/ixed.7.3.lin  
extension=/usr/lib64/php/modules/ixed.7.4.lin
```

After modifying and saving the configuration file, restart the PHP daemon for the changes to take effect:

```
sudo systemctl restart php-fpm
```

#### 2.2.5 Lua Sandbox

The Lua Sandbox module allows Fastpath Lifecycle to execute Lua code. This module is shipped with both the Debian 11 and Red Hat Enterprise Linux (RHEL) 8 Fastpath Lifecycle packages. Before Lua scripting is enabled the Lua 5.1 libraries must be installed on the Fastpath Lifecycle server.

On Debian servers the Lua 5.1 libraries are automatically installed during the Fastpath Lifecycle installation.

On RHEL8 server the Lua 5.1 libraries are made available by either installing the compat-lua-libs package from the EPEL repository or compiling from source.

### 2.2.5.1 Installing Lua on Red Hat Enterprise Linux 8 (from EPEL repository)

```
sudo dnf install
↪ https://dl.fedoraproject.org/pub/epel/epel-release-latest-8.noarch.rpm
sudo dnf update
sudo dnf install compat-lua-libs
```

### 2.2.5.2 Building and Installing Lua on Red Hat Enterprise Linux 8 (from source)

First install some required dependencies:

```
sudo dnf install gcc readline-devel
```

Next install build dependencies:

```
sudo dnf install gcc gcc-c++ make readline-devel
```

Now download and install lua5.1.5 with the following commands:

```
cd ~/
curl -R -O http://www.lua.org/ftp/lua-5.1.5.tar.gz
tar xzf lua-5.1.5.tar.gz
cd lua-5.1.5
make CFLAGS=" -O2 -Wall -DLUA_USE_LINUX -fPIC" linux
sudo make install
```

Now test that the correct version is installed by issuing the following command:

```
lua -v
#Lua 5.1.5 Copyright (C) 1994-2012 Lua.org, PUC-Rio
```

### 2.2.5.3 Enable Lua sandbox

Edit the Fastpath Lifecycle PHP configuration file to enable the lua sandbox module:

```
sudo vi /etc/php.d/20-ideiio-core.ini
```

Uncomment the following line:

```
;extension=/usr/lib64/php/modules/luasandbox.so
```

so it becomes

```
extension=/usr/lib64/php/modules/luasandbox.so
```

When using PHP 7.4 repoint the symlink to the correct library:

```
cd /usr/lib64/php/modules
sudo ln --force -s luasandbox.7.4.so luasandbox.so
```

for this change to take effect, restart the PHP daemon:

```
sudo systemctl restart php-fpm
```

You will now be able to enable Lua scripts in the application settings. **System » Settings » Application » Enable Lua scripts.**

## 2.3 File/Folder Layout

Fastpath Lifecycle installs to a folder `/usr/share/ideiio/core` and creates a number of sub-folders to contain code, documentation, web files and settings.

File/Folder	Purpose
/usr/share/ideiio/core/bin/	Binaries and scripts.
/usr/share/ideiio/core/etc/	Settings.
/usr/share/doc/iga/	Documentation and Licence.
/usr/share/ideiio/core/lib/	Fastpath Lifecycle Libraries.
/usr/share/ideiio/core/plugins/	Fastpath Lifecycle Customisations.
/usr/share/ideiio/core/templates/	Email Header/Footer.
/usr/share/ideiio/core/wwwroot/	Fastpath Lifecycle Web files.
/usr/share/ideiio/core/runtime/	Runtime support files.
/var/log/ideiio/iga-apache.log	Fastpath Lifecycle Apache Log file.
/var/log/ideiio/iga-php.log	Fastpath Lifecycle PHP Log file.
/var/log/ideiio/archive/	Fastpath Lifecycle archived log files.

## 2.4 Running the Setup Script

Fastpath Lifecycle is supplied with a setup script which is run from the Linux terminal. This script automatically configures a newly installed Fastpath Lifecycle package, creating a new database, an initial Administrative User and default settings.

**Note:** This script can only be used for a new/fresh install, it cannot be used for upgrades. For important information about upgrading, read the release notes accompanying the release, and importantly, the release notes for all releases since the version you are upgrading from. These can be found in /usr/share/ideiio/core/wwwroot/doc after the package is installed.

To configure Fastpath Lifecycle for the first time run the following command in a terminal:

```
sudo iga-setup
```

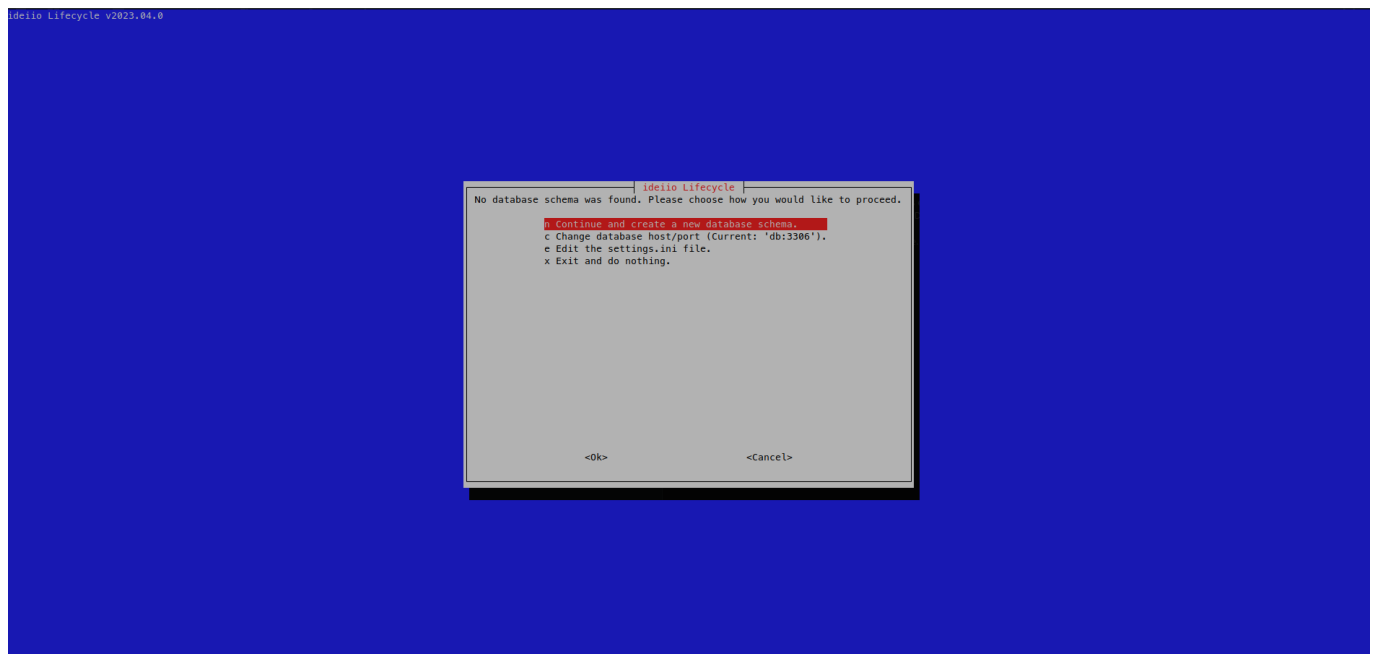


Figure 2.1: Setup Script running in a console

The setup script prompts for the following information:

Table 2.2: Setup script information prompts.

Setting	Description
MySQL root password	The root password for MySQL (not stored)
Fastpath DB user password	Password to set on the new Fastpath Lifecycle database

Setting	Description
LDAP Server IP address	IP or hostname of the Authentication directory (LDAP Server)
LDAP Server SSL	Whether to use a secure connection for LDAP
LDAP Service account	Full DN of the Fastpath Lifecycle service account
Fastpath Admin Group	CN of a Group containing Fastpath Lifecycle Admin Users

No changes are made to your system until all the setup questions have been answered and confirm whether you wish to proceed, at the end of the setup.

## 2.5 Checking your installation

Visit <https://my-server.example.com/ideiio/> in your web browser and confirm that a Login page appears.

If you encounter any errors or problems, see the [Troubleshooting](#) section of this guide.

## 2.6 Branding your Fastpath Lifecycle installation

### 2.6.1 Logo

The image displayed in the top-right of the Fastpath Lifecycle interface can be customised to display your own organisation's logo by placing a PNG image (166 x 72 pixels) file named `siteLogo.png` in the folder `/usr/share/ideiio/core/wwwroot/ext`.

### 2.6.2 Self Service Theme

The Self Service interface look and feel can be modified by placing a CSS file into the `/usr/share/ideiio/core/wwwroot/selfservice/css` folder. If the folder does not exist, please create it and place your CSS file inside it. The name of the file must correspond with the URL Title of the Self Service form. Therefore, if a form has the URL Title set to RegisterNew, it will be accessed in the browser via your hostname followed by `/ideiio/selfservice/RegisterNew` then you will have to place a CSS file named "RegisterNew.css" inside `/usr/share/ideiio/core/wwwroot/selfservice/css`.

## 2.7 Selecting an appropriate bcrypt cost factor for your system

The number of rounds in the password hash bcrypt is variable based on a cost factor. The higher the cost factor the greater number of rounds and therefore the longer it will take to generate hashes used for passwords and login etc. You should aim for a value that will generate a hash slowly enough that attackers are hindered from generating lots of hashes but fast enough that performance remains acceptable. We suggest that somewhere between 600ms and 900ms should be suitable for most purposes. Choosing a value that is too high will negatively affect performance and is not recommended.

For this purpose we have provided a benchmark script that you can run on your own hardware.

```
# /usr/share/ideiio/core/bin/bcrypt_benchmark.php
```

This will output a list calculated with your hardware so that you can choose a cost factor. The cost factor that you choose should be configured in `/usr/share/ideiio/core/etc/settings.ini` as `misc_minimum_bcrypt_cost`.

e.g.

```
misc_minimum_bcrypt_cost = 10
```

When the minimum cost is updated (to a higher value), any Identities with existing bcrypt password hashes will have their stored hash upgraded automatically and silently rehashed to the new cost factor at their next login. Be aware though that switching to a lower minimum cost factor will affect future passwords but will not cause existing passwords to be downgraded. If you're making such a change to run on less powerful hardware it may be advisable for your users change their passwords, then the newly created passwords will be hashed using the lower cost which will maintain performance.

Remember that different hardware will create hashes at different speeds, and therefore the required cost factor will vary. This is particularly important to note when upgrading your hardware or moving between environments. It's possible that your test/lab environment may have less powerful hardware than your live/production environment so bear in mind that the live/production environment will require a higher cost factor.

## 2.8 Installing Plugins

Your installation may include one or more plugins that extend core functionality.

These will usually come with their own installation instructions but generally there is a single file that should be extracted inside the Fastpath Lifecycle plugins folder like this:

```
# cd /usr/share/ideiio/core/plugins
# tar xzf myplugin.tgz
```

Once the plugin is installed it needs to be enabled, you can do this by visiting **System » Setting » Plugins** in the application after your installation is up and running. Read more about this in the [System Settings](#) section.

**Note:** Plugin files must be owned by the same user as the rest of the installation (normally root), and they must be read-only.

## 2.9 System Settings

There are many settings that can be configured to customise your Fastpath Lifecycle installation to your own organisation's particular needs. These can be found on the menu under **System » Settings**.

**Note:** Although the settings page shows values that have been configured, passwords are not displayed (for security reasons). It should be noted that leaving passwords fields untouched and empty will not change the passwords in the configuration.

All of these settings are stored either in the file `/usr/share/ideiio/core/etc/settings.ini` or in the database, with each config variable being in the format `setting = 'value'` where setting is the config variable name and value is the configured value (checkboxes are stored in the file as 0 meaning OFF (False) and 1 meaning ON (True)). To read more and make settings changes, go to **System » Settings** via the main navigation.

### 2.9.1 Application

Table 2.3: Application settings.

Setting	Config Variable	Purpose
Theme	misc_theme	Select the system theme.
Language	language	The language that Fastpath Lifecycle should be displayed in.

Setting	Config Variable	Purpose
Date format	date_format	The default date format that Fastpath Lifecycle should display dates in. Please see <a href="#">The PHP date function Guide</a> for available options. Please handle with care as unsupported/unrecognisable date formats will trigger fatal errors.
Login Attempt Period	login_attempt_period	Failed login attempts during this time period will count towards a lockout. Number of seconds.
Login Lockout Threshold	login_lockout_threshold	A lockout will begin when the count of failed login attempts, within the login attempt period, exceeds this threshold. Number of failed attempts.
Login Lockout Duration	login_lockout_duration	Time that a lockout should last before being unlocked/cleared. Note that changing or resetting the password will clear a lockout immediately, no matter how much time remains.
ReCAPTCHA site key	captcha_site_key	A google ReCAPTCHA v2 site key. <a href="#">Get site/secret key here</a> (Google Signup required).
ReCAPTCHA secret	captcha_secret_key	A google ReCAPTCHA v2 secret key.
Country List	iso_3166_file_path	Path and filename of an ISO-3166-1 list of countries and alpha-2 codes in JSON format, as provided by the iso-codes Linux package. See /usr/share/iso-codes/json/iso_3166-1.json for an example.
Number of visible filters	misc_visible_table_filters	The amount of Quick Filter links to be shown before collapsing the remainder in a dropdown list.
List item amounts	table_items_limit	The options available when choosing how many items to view in a list of tabular data.
Maximum number of audit records	max_number_audit_records	Define the maximum number of Audit Records to keep. Set to 0 to keep all records.
Maximum age (days) of audit records	max_age_audit_records	Define the maximum number of days that an Audit Record is kept. Set to 0 to keep all records.

Setting	Config Variable	Purpose
Selectable Organisational Unit parents	sub_orgunits_optional	When enabled, it will allow relating Organisational Units that have children with other entities (e.g., Identities, Categories, etc).
Selected Disabled Managers	disabled_managers_allowed	When enabled it will be possible to select a Manager with status Disabled (Manual) or Disabled (Automatic/Expired) for an Identity as well as a Manager with status Active. This may be useful to allow updating Identity records after managers have left, without providing new manager information.
Strict delegation	strict_delegation_model	This setting affects the default privileges granted to new Roles for Managers and Delegation. When strict delegation is enabled Managers cannot manage people outside their delegation. Delegation administrators can manage Identities with Roles that they have specific privileges for only, and by default this will be the Delegation Role itself. With this disabled managers can manage any Identity under their charge and delegated administrators can manage Identities with any Role so long as those Identities are in the relevant OU. You are free to configure extra privileges for Roles to extend these capabilities or to remove privileges from Roles to further restrict them.
Application URL	igaurl	The full absolute web URL. The application will be available from this URL only and this is the URL that will be published in email templates etc. A comma separated list is allowed in order to allow access from more than one URL.
Alternative Host Header	alt_host_header	An HTTP Header to check the host matches the Application URL.

Setting	Config Variable	Purpose
Cron User	cron_username	Cron user DN. Cron actions will be run in the context of this User. The User must have logged into Fastpath Lifecycle interactively at least once.
Self Service User	selfservice_username	Self Service User DN. Any actions performed on Self Service Forms will be run in the context of this User.
Fastpath DN Suffix	iga_dn_suffix	A Local LDAP/X.500 style RFC 4514 domain context suffix. Used for local Administrative Users and Groups. Changes to this setting will affect new Groups and Users only - existing User and Groups will retain the DN they received on creation.
Application is clustered	misc_clustered	Support clustered installations by storing user sessions in the database instead of as files in the /tmp directory on the Fastpath Lifecycle folder. <b>Important:</b> Ensure all users are logged out before changing this setting.
Enable debug mode	debug	Display debugging information for developers. <b>Important:</b> It is recommended that you only enable on advice from Fastpath Solutions, LLC. Sensitive information such as passwords may be leaked when enabled. Please note that enabling debug mode will also set the log level as well as the error level to "Debug".
Error Level	errorlevel	Level of information about errors to display in the application.
Log Level	loglevel	Level of information about log to display in the application.
SFPR URL	sfpr_url	Provide a direct URL to SFPR. This will be used by the Workflow actions to initiate a password reset request or to send a link to set a new password.

Setting	Config Variable	Purpose
Password Reset link	sfpr_link	Provides a link to SFPR (or another password reset tool) so that users may reset passwords by following a link on the login page. The link should be provided here as a full HTML anchor tag.
SFPR settings file path	misc_sfpr_settings_file	The path to the SFPR settings file can be provided here to be able to easily edit the SFPR settings via Lifecycle. If enabled, please go to <b>Integration » SFPR Configuration</b> to edit the settings.
Governance Portal URL	misc_cert_portal_url	If the Governance Portal is available, provide its URL here so it can be included in the Fastpath Lifecycle applications menu.
Fastpath Connect URL	misc_bridge_management_url	If Fastpath Connect is available, provide its URL here so it can be included in the Fastpath applications menu.
Fastpath Connect status history amount	api_idbridge_status_history_count	The maximum amount of Fastpath Connect status items to be kept in history.
Analytics URL	misc_analytics_url	If Analytics is available, provide its URL here so it can be included in the Fastpath Lifecycle applications menu.
Fastpath Self Service settings file path	misc_identity_portal_settings_file	If Fastpath Self Service is installed, please provide its settings file path (settings.conf) here to be able to easily edit it via Lifecycle. If enabled, please go to <b>Integration » Fastpath Self Service Configuration</b> to edit the settings.
Fastpath Self Service API Endpoint URL	misc_identity_portal_endpoint_url	The URL for Fastpath Self Service API. This will be used to make requests to it when updating settings so that Fastpath Lifecycle can obfuscate passwords using Fastpath Self Service's methods which differ when compared to Fastpath Lifecycle.
Verify certificate	misc_identity_portal_endpoint_verify_certificate	Whether to verify the Fastpath Self Service certificate when making API requests to it.

Setting	Config Variable	Purpose
Enable temporary User permissions	misc_enable_user_ignation	Denotes whether Fastpath Lifecycle Administrative Users are allowed to temporary assign their permissions to another Administrator.
Enable Admin Users' password change	misc_enable_user_password_change	Denotes whether Admin Users are allowed to update their password via their profile page inside Fastpath Lifecycle.
Status Page Secret	status_secret	The value of this field is used to generate the status page URL. The status page URL can be seen above the field.

## 2.9.2 Identities

Table 2.4: Identities settings.

Setting	Config Variable	Purpose
Terms and Conditions URL	misc_tsandcs_url	Full URL to a page displaying terms and conditions. Used by the terms and conditions field (when enabled).
Exclude users own managers from manager field	identity_manager_exclude_ancestors	When set this restricts the list of Managers in the Manager field of Identities to exclude the current users' own managers (and their managers too, up the chain up to 10 levels).

## 2.9.3 E-mail

In order to send email to Identities and users, Fastpath Lifecycle must be configured with SMTP settings. It is recommended to use the local MTA (Mail Transfer Agent) and configure that to forward to the smart host.

Table 2.5: E-mail settings.

Setting	Config Variable	Purpose
Enable SMTP Server connection	enable_smtp	An SMTP Server connection must be enabled and configured for the application to be able to send email. With this setting disabled the system will show notifications to say what emails would have been sent but will not attempt to deliver any. It may be useful to disable SMTP during an initial setup phase especially while onboarding many Identities.
SMTP Server	smtp_host	SMTP Server hostname for outgoing emails.

Setting	Config Variable	Purpose
SMTP port	smtp_port	The SMTP port used for outgoing emails.
SMTP Security	smtp_transport_encryption	Select whether to use TLS/SSL or no transport encryption. SSL or TLS is recommended.
Username	smtp_username	If your SMTP server requires authentication, enter a username here. Otherwise, leave the field blank for no authentication.
Password	smtp_password	If your SMTP server requires authentication, enter a password here. Otherwise, leave the field blank for no authentication.
From address	smtp_from	Email address to use as an SMTP Mail 'From' address in outgoing mails
From header	smtp_fromheader	Email address to use as a 'From' header address in outgoing emails. Can be an RFC822 compliant address. e.g. Bob Flemming <bob@example.com> Email sending will not work without this.
Reply to header	smtp_replyto	Email address to use as a 'Reply-to' address in outgoing emails.
Email address on failure	smtp_errors	Email address to receive emails in the case that they would be badly addressed because of incorrectly formatted email addresses.
Override recipient (test)	smtp_override	Email address to receive all emails no matter how they would normally be addressed. Useful for testing. Disable in production.

## 2.9.4 OAuth Authorisation Server

Table 2.6: OAuth settings.

Setting	Config Variable	Purpose
Enable OAuth Authorisation Server	enable_oauth	Enable/Disable OAuth. This will determine whether OAuth clients can be created.
Issuer	oauth_issuer	The default OAuth certificate issuer.
Key Digest Algorithm	oauth_key_digest_alg	The algorithm used when creating keys.
Key length	oauth_key_length	The default key length.

## 2.9.5 Assure Connection

Table 2.7: Fastpath Assure Connection settings.

Setting	Config Variable	Purpose
Assure Base URL	assure_url	URL for the Fastpath Assure API endpoint.

Setting	Config Variable	Purpose
Assure Token Endpoint URL	assure_token_url	URL for the OAuth2 Endpoint that provides access tokens for use with the Assure API.
Assure Tenant ID	assure_tenant_id	The Fastpath Assure Tenant ID (A GUID) to use.
Assure Client ID	assure_client_id	The Fastpath Assure Client ID to use for API Authentication.
Assure Secret	assure_client_secret	Fastpath Assure Client Secret to use for API Authentication. (Encrypted).
Assure Mapping Table	assure_mapping_table	A mapping table to map Lifecycle resource names to Assure Product ID's (optional). Resource (application) names are mapping table keys, while assure names are values.

## 2.9.6 Staging

Table 2.8: Staging settings.

Setting	Config Variable	Purpose
Expiry Period (days)	expiry_period	The number of days after the end date that an Identity will be kept in a 'Disabled (automatic)' state before being set to 'Disabled (expired)' state.
Start Date Event	event_startdate	Define when an Identity is staged. 'Stage Identity' means that the record will be put into the staging table (and therefore into IDM) when the start date is reached. 'Set Status' means that the Identity will be staged immediately but with a status that indicates to IDM the account should not be made active until the start date is reached.
Upper case names	stage_uppercase_names	Converts firstname, surname and fullname to uppercase when staging
Decrypt passwords	stage_decrypt_password	Passwords encrypted using AES256 encryption will get staged as plaintext passwords.
Follow Event Table	event_table_name	The name of a staging events table that contains events from the Identity Management system. When set, Fastpath Lifecycle will follow events made by the other system and pull information back from the staging table into the Identity records. In the typical use-case this is set to 'event' which is the name of the table that we ship with the application. If this setting is left blank, then Fastpath Lifecycle will not process external staging events.

## 2.9.7 Fastpath Database

Table 2.9: Fastpath Database settings.

Setting	Config Variable	Purpose
Database Hostname	db_hostname	Fastpath Lifecycle Database hostname.
Database Port	db_port	Fastpath Lifecycle Database port number.
Database Name	db_database	Fastpath Lifecycle Database name.
Database Username	db_username	Fastpath Lifecycle Database username.
Database Password	db_password	Fastpath Lifecycle Database password (Encrypted).
Query Logging	db_query_log	Enable database query log. Please note that the database queries will be logged only if the log level allows it (i.e., is set to debug).

## 2.9.8 Lookup Database

Fastpath Lifecycle can retrieve data from a single table of a MySQL database that you configure here to populate a database lookup field. See the Field Data Type 'db'.

Table 2.10: Lookup Database settings.

Setting	Config Variable	Purpose
Database Hostname	lookup_hostname	Lookup database hostname.
Database Port	lookup_port	Lookup database port number.
Database Name	lookup_database	Lookup database name.
Database Username	lookup_username	Lookup database username.
Database Password	lookup_password	Lookup database password.
Table Name	lookup_tablename	Lookup table name for database lookup fields.
Lookup fields	lookup_fields	List of two columns to retrieve from the lookup table delimited by '=' (equals sign). The first column will be used as a field value, the second field will be used as a label. These can be the same column if desired.

## 2.9.9 Caching

Enabling cache can help speed up the Fastpath Lifecycle application. Frequently accessed data (e.g., large sets of data) as well as data that requires extensive processing (e.g., Custom Fields) will be stored indefinitely, using the configured Redis server, in order to avoid processing it for each request. The corresponding storage will automatically be refreshed when there are updates to it.

### 2.9.9.1 Prerequisites

Fastpath Lifecycle uses Redis for caching, and it therefore requires the redis-server package to be installed in order to communicate with the Redis server. It is recommended that Redis is installed on the same server as Fastpath Lifecycle, however, remote servers are also supported. Please consult the following in order to install the Redis server:

### 2.9.9.2 Installing Redis on Debian:

The following commands will install Redis on Debian:

```
sudo apt install redis-server
sudo systemctl start redis
```

### 2.9.9.3 Installing Redis on Red Hat Enterprise Linux 8:

The following commands will install Redis on Red Hat Enterprise Linux 8:

```
sudo yum install redis
sudo systemctl start redis
```

### 2.9.9.4 Verifying the installation

The following command will connect to the Redis server console as well as show the hostname and the port which it uses:

```
redis-cli
```

The settings below will then require updating to enable Fastpath Lifecycle to use the Redis server for caching. Defaults have already been provided for the host name as well as the port and these will likely remain unchanged if the Redis server is installed on the same server as Fastpath Lifecycle.

Table 2.11: Caching settings.

Setting	Config Variable	Purpose
Enable cache	enable_cache	Enable or disable cache.
Hostname	redis_host	Hostname of the Redis server.
Port	redis_port	Port of the Redis server.
Password	redis_password	Redis server password (Encrypted and optional).

### 2.9.10 LDAP Connection

Fastpath Lifecycle can communicate with a Directory (e.g., NetIQ Identity Vault, or Microsoft Active Directory) via LDAP to authenticate users and to look up groups and email addresses.

Table 2.12: LDAP Connection settings.

Setting	Config Variable	Purpose
LDAP Hostname	idv_host	Authentication Directory LDAP hostname.
LDAP Port	idv_port	Authentication Directory LDAP port number.
Search Base	idv_base	Base DN for connections to the Authentication Directory.
Enable SSL	idv_ssl	Enable SSL for LDAP connections.
LDAP Search User DN	idv_username	The DN of a User in the Authentication Directory that Fastpath Lifecycle should use to perform LDAP searches.
LDAP Search User Password	idv_password	The Password of the LDAP Search User (see above).
User description attribute	idv_description_attr	LDAP attribute to retrieve as a hint for lookup fields in addition to the usual data.

Setting	Config Variable	Purpose
Login Attribute	misc_login_attribute	LDAP attribute to use for login. Use the value stored in this attribute to log in to Fastpath Lifecycle. May also be a comma-separated list of attributes.
Filter Attribute	misc_filter_attribute	Attributes used to search for user lookup fields (comma separated list).
Search Base for Sponsors	idv_sponsorbase	LDAP Search Base DN for Sponsors for lookup sponsor fields.
LDAP Query for Sponsors	idv_sponsorquery	LDAP Query for Sponsors. Filter query for lookup sponsor fields.
Fastpath Administrators Group	idv_admin_group	LDAP or Local Group containing Users that will be granted Administrator Privileges.
Managers group	idv_manager_group	LDAP or Local Group containing users who are to be granted Fastpath Lifecycle Manager (de-duplication) Role.
Sponsors group	idv_sponsor_group	LDAP or Local Group containing users who are to be granted Fastpath Lifecycle Sponsor Role <sup>1</sup> .

### 2.9.11 SAML Auth (SimpleSAMLphp)

SAML Authentication settings. SimpleSAMLphp is required and must be configured and running on the same machine that Fastpath Lifecycle is running on.

Table 2.13: SAML Auth settings.

Setting	Config Variable	Purpose
SimpleSAMLphp location	idv_saml_simplesamphppath	File system path of the SimpleSAMLphp installation.
SimpleSAMLphp SP Name	idv_saml_simplesamphpspname	Service Provider (SP) Name.
SameSite cookie policy	idv_saml_samesite	The SameSite attribute of the Set-Cookie HTTP response header allows you to declare if cookies should be restricted to a first-party or same-site context. You may find you need to relax the policy if your IdP is hosted elsewhere. Please note that Lax and None are each considered less secure. Modern browsers require the None setting to be accompanied by a secure connection.
Enable recovery login	idv_saml_recovery_login	Enable the recovery login URL at <a href="https://myserver.example.net/login/local">https://myserver.example.net/login/local</a> .

<sup>1</sup>The Sponsor Group should not be a more restrictive set of Users than the 'Search Base for Sponsors' and 'LDAP Query for Sponsors' provides. In other words, the LDAP Query for Sponsors should be designed to search within the Sponsors Group, otherwise unpredictable behaviour may occur.

Setting	Config Variable	Purpose
Dynamic user creation	idv_saml_createusers	Create local administrative users, if they don't already exist.
Category	idv_saml_category	The category to use for Dynamic user creation.

### 2.9.12 Plugins

If plugins are installed, Fastpath Lifecycle will list them with a checkbox to enable/disable each Plugin. A Plugin that is checked will be loaded immediately after the form is submitted.

The Plugin names shown are the same as the Plugin filename minus the path and .php file extension.

### 2.9.13 Configuring session timeout

Login sessions are terminated and Users are logged out automatically after a period of inactivity. This period is configured via the `php.ini` setting `session.gc_maxlifetime`. The default setting will depend on your platform, but it's usually 1440 seconds (24 minutes). A notification will be shown to inactive Users before they are automatically logged out, and an option to click a button and stay logged is available.

# Chapter 3

## Troubleshooting

### 3.1 Advanced Installation

#### 3.1.1 Manually Importing the Database Schema

This is only necessary if the setup script is not used.

The MySQL database schema for Fastpath Lifecycle comes as several files and each file needs to be imported in order, before Fastpath Lifecycle can be used.

```
mysql -u root -p < 01-create.sql
mysql iga -u root -p < 02-setup.sql
```

Edit the file 03-permissions.sql and uncomment the two CREATE USER lines and edit the passwords used in the lines below. (Remember to delete the passwords from the file afterwards)

```
mysql iga -u root -p < 03-permissions.sql
mysql iga -u root -p < 04-localusers.sql
mysql iga -u root -p < 05-ref.sql
mysql iga -u root -p < 06-data.sql
mysql iga -u root -p < 07-triggers.sql
```

#### 3.1.2 Manually Configuring Fastpath Lifecycle Bootstrap Settings

This is only necessary if the setup script is not used.

Before first use Fastpath Lifecycle must be configured with initial bootstrap settings so that it can find its database and the LDAP server for authentication at login.

##### 3.1.2.1 Create settings file

Create the settings.ini file in the correct location depending on the Linux distribution that Fastpath Lifecycle is installed on.

Create a file named /usr/share/ideiio/core/etc/settings.ini.

```
sudo touch /usr/share/ideiio/core/etc/settings.ini
```

### 3.1.2.2 Settings file permissions

The settings.ini file needs to be made available to Fastpath Lifecycle. This can be done by changing the file's owner.

**For Debian:** Change the settings file owner to the 'www-data' user.

```
sudo chown www-data:www-data settings.ini
```

**For Red Hat Enterprise Linux 8:** Change the settings file owner to the 'apache' user.

```
sudo chown apache:apache settings.ini
sudo chcon -t httpd_sys_rw_content_t settings.ini
```

### 3.1.2.3 Configure settings

You can now edit the settings.ini file to configure the Fastpath Lifecycle settings. As a minimum, the settings file should contain the database connection configuration and the corresponding setting keys can be found inside /usr/share/ideiio/core/lib/defaults.ini by looking up the keys prefixed with db\_.

```
sudo vi settings.ini
```

### 3.1.2.4 Database Settings

These are the basic settings required for connecting Fastpath Lifecycle to MySQL on the local server, other configurations will require more settings than this.

Table 3.1: Database settings.

Setting	Description
db_database	The database name (usually iga).
db_username	The database username (usually iga).
db_password	The database password (encrypted).

### 3.1.2.5 LDAP Connection Settings

These are the basic settings required for Fastpath Lifecycle authentication to your directory (e.g., NetIQ Identity Vault) via secure LDAP, other configurations will require more settings than this.

Table 3.2: LDAP Connection settings.

Setting	Description
idv_host	The LDAP server DNS name or IP address.
idv_username	The DN of an LDAP service account user.
idv_password	The LDAP service account password (encrypted).
idv_base	The base DN for LDAP searches.
idv_admin_group	The DN of a Group containing Users who are to be allowed to administer Fastpath Lifecycle.

If 'idv\_host' is left blank, Fastpath Lifecycle will not attempt to use LDAP at all.

### 3.1.2.6 Encrypted Passwords

For security Fastpath Lifecycle requires that passwords are encrypted before being used in configuration files. Passwords are encrypted using AES256 encryption or non-reversible hashes (SHA-256/512).

To encrypt a password manually (using reversible AES256 encryption with the system key) type the following command in a terminal:

```
sudo /usr/share/ideiio/core/bin/passwords.php MySecretPassword
```

Where 'MySecretPassword' is the password you want to encrypt.

### 3.1.3 Configuring cron (Background actions)

Fastpath Lifecycle has three cron jobs (Located in /usr/share/ideiio/core/bin) to perform background actions periodically.

**Note:** The Fastpath Lifecycle setting 'Cron Username' must be set to the DN of an existing Fastpath Lifecycle user from the [settings page](#) before running cron for the first time.

#### 3.1.3.1 Jobs

There are a number of system jobs that will run in the background automatically either every minute, every day or every week or to a custom cron schedule - see below.

Table 3.3: Cron jobs.

Job	Description
ProcessAccessRequests	Check if users have new Role/App requests and send emails.
ProcessCompliancePolicies	Run compliance policy scans.
ProcessEventTable	Process the staging event table and add tasks to synchronise data where necessary.
ProcessExpiredPasswords	Run workflows associated with password expiry.
ProcessExpiredWorkflows	Process workflows that have passed the configured maximum duration.
ProcessExpiryNotifications	Find Identities that are due to expire and run workflows to notify approvers.
ProcessPrivilegeNames	Process Privilege name migration.
ProcessProvisioningFailures	Handle provisioning failures and create retry tasks where necessary.
ProcessRequestNotifications	Notify approvers of recent requests.
ProcessRolePolicies	Check Role policies against all active Identity data and grant/remove roles accordingly.
ProcessSettingsFile	Move configuration from the settings file into the database.
ProcessTaskQueue	Process the task queue and run the next batch task where appropriate.
ProcessTimedEvents	Look for timed events for Identities and create batch tasks (e.g., for Auto-disable upon reaching end date).
PurgeAuditLog	Purge old entries from the audit log.
PurgeEventTable	Purge old entries from the staging event table.
PurgeExpiredDBSessions	Purge expired database sessions (when clustering is enabled).
PurgeExpiredOauthKeys	Purge expired OAuth keys.
PurgeFinishedTasks	Purge old finished tasks (1000 per run).
PurgeIdbridgeStatusHistory	Purge old entries from Fastpath Connect status history.
ResumeHaltedWorkflows	Resume workflows that have reached the maximum allowed halt time.
SyncCountryList	Synchronise list of countries and codes with the list provided by the operating system, or with a user provided list (if configured.)

### 3.1.3.2 Custom cron schedule

The Fastpath Lifecycle package has already set up a crontab for these jobs with sensible default timings.

The four cron scripts, `cron.php`, `cron-hourly.php`, `cron-daily.php`, and `cron-weekly.php` are configured by default to run every minute, every hour, every day, and every week respectively. These four scripts default to running the following jobs:

Table 3.4: Cron job schedules.

Script	Jobs
<code>cron.php</code>	ProcessProvisioningFailures, ProcessEventTable, ProcessTimedEvents, ProcessCompliancePolicies, ProcessExpiredWorkflows, ResumeHaltedWorkflows, ProcessPrivilegeNames, PurgeIdbridgeStatusHistory, ProcessTaskQueue, PurgeExpiredDBSessions
<code>cron-hourly.php</code>	PurgeFinishedTasks
<code>cron-daily.php</code>	ProcessSettingsFile, PurgeEventTable, PurgeAuditLog, ProcessExpiredPasswords, ProcessAccessRequests, ResumeHaltedWorkflows, PurgeExpiredOAuthKeys, PurgeFinishedTasks
<code>cron-weekly.php</code>	ProcessRequestNotifications

To change the cron configuration edit the file `/etc/cron.d/ideiio-core`. To comment out a command (disabling the line) and place a `#` at the start the line. To enable it again remove the `#`.

To override the default list of jobs that will run for any particular script and run those that you specify, provide a list of space separated Job names as arguments to the script. For example:

```
/usr/bin/php cron.php PurgeAuditLog PurgeEventTable
```

**Note:** Fastpath Lifecycle requires cron jobs to run regularly for proper operation.

Type `man crontab` at the Linux console for more information on configuring cron.

## 3.2 Data Cleanup

There may be cases where you need to clean user and state data out of the database without changing configuration. This can be useful when testing and troubleshooting configuration changes or when moving a database between environments. To help facilitate this, a sql script is provided in `/usr/share/ideiio/core/mysql`. The script is called `delete_env_data.sql` and does exactly that. It will delete any environment specific data. The data that will be removed includes the following:

- Any Identity that is NOT in the Fastpath Administrators OU
  - Identity Custom field values
  - Identity Role / Resource / Entitlement assignments
  - Identity Managers
  - Any other data associated with those Identities
- Audit entries
- Locks
- Sessions (UI and OAuth, including all tokens)
- Jobs and actions
- Staging tables
- events
- invitations
- workflow events
- status / state data
- password history

This script is not comprehensive. Some manual actions may be required. Here is what this script does NOT do...

- Resource and Role owners are not removed. This is another argument for assign owners as roles, not identities. If an identity is assigned as an owner, the owner will show as “Unknown” and no approval events will be generated until that is fixed.
- Workflow Event identities. If there are any workflow events that refer to specific identities, they won't be cleaned up. If that is the case in any workflows, you should really re-evaluate that design.

### 3.2.1 Running Environment Cleanup

\*\* WARNING \*\*

This script is very destructive. It WILL delete data and there is no way to roll back those deletions. Always take a full backup of the database before running this script.

\*\* WARNING \*\*

If the Governance Portal is installed and used, that data must be cleaned out before running this script. The governance campaigns and tasks will create foreign keys that will prevent the deletion of identity data and cause this script to fail.

To run the script, execute the following command

```
mysql iga -u <dbuser> -p -h <dbhost> < delete_env_data.sql
```

### 3.2.2 After Running Environment Cleanup

After running the environment cleanup script, the cache will need to be cleared to ensure no cached data remains in the system. This needs to be run even if redis cache is not used. To clear the cache, run this script as a privileged user.

```
/usr/share/ideiio/core/bin/cache_clear.php
```

## 3.3 Errors / Logging

In the rare case that Fastpath Lifecycle produces unexpected behaviour, the log files may contain information to help and diagnose the issue further.

Log files are stored in `/var/log/ideiio/iga-apache.log` and `/var/log/ideiio/iga-php.log`.

In the event that a serious runtime error is detected, a message will be displayed to the User in addition to the log entry.

The amount of information displayed to the User and stored in the log file can be configured via the **Error Level** and **Log Level** settings in the 'Application' section under **System » Settings** on the menu.

Note that these settings will also control the amount of information displayed to Users in the event of a serious error.

### 3.3.1 Error Level

**None** No extra information displayed to Users upon serious errors. This is the setting that is strongly recommended for production use.

**Simple** Some simple information will be displayed to Users upon serious errors.

**Advanced** Extra diagnostic logging and advanced information will be displayed to Users upon serious errors. This option should be temporarily selected while diagnosing an issue and then reconfigured to None or Simple afterwards. Not recommended for use on a production installation.

**Debug** Same as Advanced but with extra information that is probably only useful to developers. This option should be temporarily selected and only when recommended by Fastpath Solutions, LLC. Technical Support.

### 3.3.2 Log Level

Fastpath Lifecycle can log information about errors, warnings and activity in a log file (and syslog), please be sure that you have sufficient storage available before increasing the log level as it's possible to create very large files this way.

**None** A bare minimum of logging.

**Simple** Normal diagnostic logging. The recommended setting for production use.

**Advanced** Extra diagnostic logging and advanced information. Recommended for temporary use, while troubleshooting.

**Debug** Same as Advanced but with extra information that is probably only useful to developers. This option should be temporarily selected and only when recommended by Fastpath Solutions, LLC. Technical Support.

### 3.3.3 Database query logging

If you suspect you have a database problem you can enable full query logging by enabling "Query Logging" under **System » Settings » Fastpath Database**.

Query logging has a performance impact, is very verbose and may contain sensitive information, as a result this feature should be used temporarily for troubleshooting and only when recommended by Fastpath Solutions, LLC. Database queries will only be logged when the log level is set to "Debug".

### 3.3.4 Debug mode

Debug mode can be configured via the **Enable Debug Mode** settings in the 'Application' section under **System » Settings** on the menu.

When debug mode is enabled, Fastpath Lifecycle will perform extra checking of operations and output the maximum amount of debugging information to the log file. It is important to note that enabling this feature is **not recommended for production use** because sensitive information such as passwords can be displayed in the user interface and stored in the log files. This feature should be used temporarily for troubleshooting and only when recommended by Fastpath Solutions, LLC.

A message will be displayed to each user who logs into Fastpath Lifecycle while debug mode is enabled, warning them that sensitive information may be revealed.

## 3.4 Incorrectly configured Fastpath Lifecycle Application URL

Should you see an error saying "Application URL is incorrectly configured." it means that the URL you are using to access Fastpath Lifecycle in your web browser does not match the URL you entered during installation.

Fastpath Lifecycle only allows a pre-configured URL to be used to access the application, you cannot for example configure a hostname to be used in the application URL and then access it by IP address in your web browser.

See the setting 'igaurL' in your `/usr/share/ideiio/core/etc/settings.ini` file and make sure it is set to full URL that matches the hostname or IP address of your server. To be able to access the application from more than one URL, provide a comma separated list.

Sometimes it may indicate that a proxy server or load balancer is incorrectly configured or that Fastpath Lifecycle is not configured to look at the proxy host header when checking the URL. Please see the "Alternative Host Header" setting, for more details, under **System » Settings » Application**.

## 3.5 Upgrade dependency issues

When installing Fastpath Lifecycle on a Debian server that has been upgraded from a previous version, for example when upgrading Fastpath Lifecycle from ARMS, you may occasionally see package dependency issues that prevent the packages that Fastpath Lifecycle depends on from being installed when you run `sudo apt-get -f install`.

This can exhibit itself as a prompt to remove Fastpath Lifecycle.

```
The following packages will be REMOVED:
 iga
```

This is usually because the OS upgrade was not completed properly and old packages remain. To fix it, remove the partially installed Fastpath Lifecycle, remove the old packages, install Fastpath Lifecycle and then update dependencies. For example, as follows:

```
sudo apt remove iga; # if it wasn't removed already
sudo apt autoremove
sudo apt update
sudo apt upgrade
sudo apt install ./iga-package-filename.deb
```

## 3.6 Viewing the Fastpath Lifecycle Version Number and Platform Information

To view the version number of the Fastpath Lifecycle application that is currently in use select **System** » **About** from the menu.

The About page also displays build number, Platform, and Licence information.

The current version number is also displayed in the footer bar at the bottom of every page.

It's also possible to check the version number from the Linux terminal by running:

```
/usr/share/ideiio/core/bin/iga-version.php
```

### 3.6.1 Getting the Fastpath Lifecycle Database Schema version

Fastpath Lifecycle will refuse to run with an incompatible Database Schema. You can check the current schema version by running this command:

```
# mysql -Ne "SELECT * FROM iga_schemaversion" iga -u root -p
```

## 3.7 Backing up your Fastpath Lifecycle installation

All Fastpath Lifecycle data is stored in the MySQL database and this can be backed up in the usual way. e.g.

```
$ mysqldump -u username -p --default-character-set=utf8mb4 --single-transaction
↪ iga | gzip -c > iga-db-backup-$(date +%Y%m%d%H%M%S).sql.gz
```

Where username is the name of a MySQL user with appropriate privileges.

In addition, Fastpath Lifecycle stores some configuration as files in the `/usr/share/ideiio/core/etc/` directory owned by the Apache user.

```
`/usr/share/ideiio/core/etc/settings.ini`
`/usr/share/ideiio/core/etc/iga_keyring`
```

There may also be plugins installed to the directory `/usr/share/ideiio/core/plugins` and template customisations in `/usr/share/ideiio/core/templates`.

It's possible to backup the Fastpath Lifecycle application itself by making a copy of the whole /usr/share/ideiio/core file and directory structure, but if you've backed up the above, having a copy of the original .deb package used to install the running version of Fastpath Lifecycle is sufficient.

## 3.8 SourceGuardian

Fastpath Lifecycle Source code is encoded with SourceGuardian. The Fastpath Lifecycle package will install and configure the SourceGuardian loader in order for Fastpath Lifecycle to run. If the SourceGuardian loader is missing or not running for any reason it will result in a message being displayed and the Fastpath Lifecycle application refusing to run. SourceGuardian can be downloaded for free from <https://www.sourceguardian.com/loaders.html>

## 3.9 Recovering the Administrator account

If the Administrator account's password has been forgotten or for any reason the Administrator account is unable to log in due to accidental loss of Privileges, please take the following steps:

1. Open a terminal and navigate to /usr/share/ideiio/core/bin/
2. Execute the reset-local-admin.php script as root (e.g., using sudo) and provide it with the new Administrator password, as follows (where NewPassword will be the new password which will be used to log in.):

```
sudo ./reset-local-admin.php NewPassword
```

3. Visit Fastpath Lifecycle in a browser and log in with the username 'fastpathadmin' using the new password

Please note that if any of the required default Privileges have been lost, the script will re-create these too.

## 3.10 Monitoring Fastpath Lifecycle Availability

Fastpath Lifecycle has a status page for availability monitoring. The status page is protected by a secret string which can be obtained or updated via the settings page inside **System » Settings » Application**.

```
`https://my-server.example.com/ideiio/SECRET_STRING/status`
```

This returns a plain text message which is either 'OK' or 'ERROR', and in the case of an error there will be also a line feed and then a message describing the error.

The page is accompanied by an appropriate HTTP response code. i.e., 200 - OK. 500 - ERROR.

The status page will return the text ERROR in the case Fastpath Lifecycle is down or has serious problems, otherwise it will return OK.

This can be used by a monitoring system that polls regularly to discover the availability and overall status of ideiio.

## 3.11 URL rewrites

Although very unlikely because Fastpath Lifecycle is shipped with a default Apache config, it is possible for Apache URL rewrites to behave unexpectedly if the MultiViews option is enabled. If simple URL rewrites seem to refuse to work, please try disabling the MultiViews option, restart Apache and try again.