Test security and privacy of your mobile application (iOS & Android), detect OWASP Mobile Top 10 and other weaknesses.

Summary of Mobile Application Security Test

APP NAME
Green Pass

APP ID
at.gv.brz.wallet

APP VERSION
2.3.2

DEVICE TYPE
Android

TEST STARTED
May 12th 2022, 11:53

TEST FINISHED
May 12th 2022, 12:15

Mobile App Permissions and Privacy	OWASP Mobile Top 10 Security Test	Mobile App External Communications	Software Composition Analysis
6 PERMISSIONS	**2 MAJOR RISKS FOUND**	**RISKS FOUND**	**15 COMPONENTS FOUND**

Malware test: no malicious code or behavioral patterns detected in the mobile app.

Mobile Application Permissions and Privacy Test

If the application processes or stores any PII of EU residents, the following requirements of EU GDPR may apply:

Privacy Policy

Privacy Policy was not found in application   Misconfiguration or weakness

Mobile Application Functionality

The mobile application requests access to the following functionality that may endanger user's privacy under certain circumstances:

Camera

The mobile application can use the camera for taking pictures or videos.

Mobile Application Permissions

The mobile application requests the following permissions that may endanger user's privacy under certain circumstances:

CAMERA   dangerous

Allows application to take pictures and videos with the camera. This allows the application to collect images that the camera is seeing at any time.

ACCESS_NETWORK_STATE   normal

Allows an application to view the status of all networks.

FOREGROUND_SERVICE   normal

Allows a regular application to use Service.startForeground.

INTERNET   normal

Allows an application to create network sockets.

RECEIVE_BOOT_COMPLETED   normal

Allows an application to start itself as soon as the system has finished booting. This can make it take longer to start the phone and allow the application to slow down the overall phone by always running.

WAKE_LOCK   normal

Allows an application to prevent the phone from going to sleep.

OWASP Mobile Top 10 Security Test

The automated audit revealed the following security flaws and weaknesses that may impact the application:

HIGH RISKS	MEDIUM RISK	LOW RISKS	WARNINGS
2	0	2	5

Zero false-positive SLA and advanced manual testing of application is only available in ImmuniWeb® MobileSuite.

HARDCODED SENSITIVE DATA [M10] [CWE-200] [SAST]   HIGH

Description:

The mobile application contains potentially sensitive hardcoded data. An attacker with an access to the mobile application file can easily extract this data from the application and use it in any further attacks.

Details:

There is **'SDK_API_TOKEN'** found in file 'at/gv/brz/wallet/BuildConfig.java':

```
[line 10:     public static final String SDK_API_TOKEN =
"aknZGsFD9qCNmCm4NzFYfcK7WWbBeTFF";]
```

CVSSv3 Base Score:

5.5 (AV:L/AC:L/PR:L/UI:N/S:U/C:H/I:N/A:N)

CLEARTEXT SQLITE DATABASE [M2] [CWE-312] [DAST]

HIGH

Description:

The mobile application uses an unencrypted SQLite database.
This database can be accessed by an attacker with physical access to the mobile device or a malicious application with root access to the device. The application should not store sensitive information in clear text.

Details:

In file androidx.work.workdb:

```
TABLES:
android_metadata
Dependency
sqlite_autoindex_Dependency_1
index_Dependency_work_spec_id
index_Dependency_prerequisite_id
WorkSpec
sqlite_autoindex_WorkSpec_1
index_WorkSpec_schedule_requested_at
index_WorkSpec_period_start_time
WorkTag
sqlite_autoindex_WorkTag_1
index_WorkTag_work_spec_id
SystemIdInfo
sqlite_autoindex_SystemIdInfo_1
WorkName
sqlite_autoindex_WorkName_1
index_WorkName_work_spec_id
WorkProgress
sqlite_autoindex_WorkProgress_1
Preference
sqlite_autoindex_Preference_1
room_master_table

RAW DUMP:
CREATE TABLE android_metadata (locale TEXT);CREATE TABLE `Dependency` (`work_spec_id`
TEXT NOT NULL, `prerequisite_id` TEXT NOT NULL, PRIMARY KEY(`work_spec_id`,
`prerequisite_id`), FOREIGN KEY(`work_spec_id`) REFERENCES `WorkSpec`(`id`) ON UPDATE
CASCADE ON DELETE CASCADE , FOREIGN KEY(`prerequisite_id`) REFERENCES `WorkSpec`(`id`)
ON UPDATE CASCADE ON DELETE CASCADE );CREATE INDEX `index_Dependency_work_spec_id` ON
`Dependency` (`work_spec_id`);CREATE INDEX `index_Dependency_prerequisite_id` ON
`Dependency` (`prerequisite_id`);CREATE TABLE `WorkSpec` (`id` TEXT NOT NULL, `state`
```

```
Dependency` (`prerequisite_id`);CREATE TABLE `WorkSpec` (`id` TEXT NOT NULL, `state`
INTEGER NOT NULL, `worker_class_name` TEXT NOT NULL, `input_merger_class_name` TEXT,
`input` BLOB NOT NULL, `output` BLOB NOT NULL, `initial_delay` INTEGER NOT NULL,
`interval_duration` INTEGER NOT NULL, `flex_duration` INTEGER NOT NULL,
`run_attempt_count` INTEGER NOT NULL, `backoff_policy` INTEGER NOT NULL,
`backoff_delay_duration` INTEGER NOT NULL, `period_start_time` INTEGER NOT NULL,
`minimum_retention_duration` INTEGER NOT NULL, `schedule_requested_at` INTEGER NOT
NULL, `run_in_foreground` INTEGER NOT NULL, `required_network_type` INTEGER,
`requires_charging` INTEGER NOT NULL, `requires_device_idle` INTEGER NOT NULL,
`requires_battery_not_low` INTEGER NOT NULL, `requires_storage_not_low` INTEGER NOT
NULL, `trigger_content_update_delay` INTEGER NOT NULL, `trigger_max_content_delay`
INTEGER NOT NULL, `content_uri_triggers` BLOB, PRIMARY KEY(`id`));CREATE INDEX
`index_WorkSpec_schedule_requested_at` ON `WorkSpec` (`schedule_requested_at`);CREATE
INDEX `index_WorkSpec_period_start_time` ON `WorkSpec` (`period_start_time`);CREATE
TABLE `WorkTag` (`tag` TEXT NOT NULL, `work_spec_id` TEXT NOT NULL, PRIMARY KEY(`tag`,
`work_spec_id`), FOREIGN KEY(`work_spec_id`) REFERENCES `WorkSpec`(`id`) ON UPDATE
CASCADE ON DELETE CASCADE );CREATE INDEX `index_WorkTag_work_spec_id` ON `WorkTag`
(`work_spec_id`);CREATE TABLE `SystemIdInfo` (`work_spec_id` TEXT NOT NULL, `system_id`
INTEGER NOT NULL, PRIMARY KEY(`work_spec_id`), FOREIGN KEY(`work_spec_id`) REFERENCES
`WorkSpec`(`id`) ON UPDATE CASCADE ON DELETE CASCADE );CREATE TABLE `WorkName` (`name`
TEXT NOT NULL, `work_spec_id` TEXT NOT NULL, PRIMARY KEY(`name`, `work_spec_id`),
FOREIGN KEY(`work_spec_id`) REFERENCES `WorkSpec`(`id`) ON UPDATE CASCADE ON DELETE
CASCADE );CREATE INDEX `index_WorkName_work_spec_id` ON `WorkName`
(`work_spec_id`);CREATE TABLE `WorkProgress` (`work_spec_id` TEXT NOT NULL, `progress`
BLOB NOT NULL, PRIMARY KEY(`work_spec_id`), FOREIGN KEY(`work_spec_id`) REFERENCES
`WorkSpec`(`id`) ON UPDATE CASCADE ON DELETE CASCADE );CREATE TABLE `Preference` (`key`
TEXT NOT NULL, `long_value` INTEGER, PRIMARY KEY(`key`));CREATE TABLE room_master_table
(id INTEGER PRIMARY KEY,identity_hash TEXT);
```

CVSSv3 Base Score:

7.1 (AV:L/AC:L/PR:L/UI:N/S:U/C:H/I:H/A:N)

HARDCODED DATA [M2] [CWE-200] [SAST]   LOW

Description:

The mobile application contains debugging or other technical information that may be extracted and used by an attacker to facilitate further attacks.

http:// with value http://pwall.net/schema/schema.json in following files:

- **net/pwall/json/validation/JSONValidation.java:**

```
[line 405: URI.create("http://pwall.net/schema/schema.json").resolve(str);]
```

http:// with value http://localhost/ in following files:

- **retrofit2/Response.java:**

```
[line 16: return success((Object) t, new
Builder().code(200).message("OK").protocol(Protocol.HTTP_1_1).request(new
Request.Builder().url("http://localhost/").build()).build());]
[line 20: return success((Object) t, new
Builder().code(i).message("Response.success()").protocol(Protocol.HTTP_1_1).
request(new Request.Builder().url("http://localhost/").build()).build());]
[line 29: return success((Object) t, new
Builder().code(200).message("OK").protocol(Protocol.HTTP_1_1).headers(header
s).request(new
Request.Builder().url("http://localhost/").build()).build());]
[line 41: return error(responseBody, new Builder().body(new
NoContentResponseBody(responseBody.contentType(),
responseBody.contentLength())).code(i).message("Response.error()").protocol(
Protocol.HTTP_1_1).request(new
Request.Builder().url("http://localhost/").build()).build());]
```

http:// with value http://example.com/missing in following files:

- **ehn/techiop/hcert/kotlin/data/ValueSetHolder.java:**

```
[line 86: return new ValueSetEntryAdapter(str, new ValueSetEntry(str, "en",
false, "http://example.com/missing", "0", str2));]
```

http:// with value http://javax.xml.XMLConstants/feature/secure-processing in following files:

- **com/fasterxml/jackson/databind/ext/DOMDeserializer.java:**

```
[line 44: r3 = "http://javax.xml.XMLConstants/feature/secure-processing";]
```

https:// with value https://tools.ietf.org/html/rfc7518#section-3.2 in following files:

- **io/jsonwebtoken/SignatureAlgorithm.java:**

```
[line 155:
stringBuilder.append("https://tools.ietf.org/html/rfc7518#section-3.2 for
more information.");]
[line 289: stringBuilder.append(" bits. See
https://tools.ietf.org/html/rfc7518#section-3.2 for more ");]
```

- **io/jsonwebtoken/security/Keys.java:**

```
[line 38: stringBuilder.append("https://tools.ietf.org/html/rfc7518#section-
3.2 for more information.");]
```

https:// with value https://tools.ietf.org/html/rfc7518#section-3.4 in following files:

- **io/jsonwebtoken/SignatureAlgorithm.java:**

```
[line 209:
stringBuilder.append("https://tools.ietf.org/html/rfc7518#section-3.4 for
more information.");]
[line 328:
stringBuilder2.append("https://tools.ietf.org/html/rfc7518#section-3.4 for
more information.");]
```

https:// with value https://tools.ietf.org/html/rfc7518#section- in following files:

- **io/jsonwebtoken/SignatureAlgorithm.java:**

```
[line 155:
stringBuilder.append("https://tools.ietf.org/html/rfc7518#section-3.2 for
more information.");]
[line 209:
stringBuilder.append("https://tools.ietf.org/html/rfc7518#section-3.4 for
more information.");]
[line 247:
stringBuilder4.append("https://tools.ietf.org/html/rfc7518#section-");]
[line 289: stringBuilder.append(" bits. See
https://tools.ietf.org/html/rfc7518#section-3.2 for more ");]
[line 312: stringBuilder2.append(" bits. See
https://tools.ietf.org/html/rfc7518#section-3.3 for more ");]
[line 328:
stringBuilder2.append("https://tools.ietf.org/html/rfc7518#section-3.4 for
more information.");]
```

https:// with value https://tools.ietf.org/html/rfc7518#section-3.3 in following files:

- **io/jsonwebtoken/SignatureAlgorithm.java:**

```
[line 312: stringBuilder2.append(" bits. See
https://tools.ietf.org/html/rfc7518#section-3.3 for more ");]
```

https:// with value https://github.com/jwtk/jjwt#custom-json-processor in following files:

- **io/jsonwebtoken/impl/DefaultClaims.java:**

```
[line 7: private static final String CONVERSION_ERROR_MSG = "Cannot convert
existing claim value of type '%s' to desired type '%s'. JJWT only converts
simple String, Date, Long, Integer, Short and Byte types automatically.
Anything more complex is expected to be already converted to your desired
type by the JSON Deserializer implementation. You may specify a custom
Deserializer for a JwtParser with the desired conversion configuration via
the JwtParserBuilder.deserializeJsonWith() method. See
https://github.com/jwtk/jjwt#custom-json-processor for more information. If
using Jackson, you can specify custom claim POJO types as described in
https://github.com/jwtk/jjwt#json-jackson-custom-types";]
```

https:// with value https://dgc-trust.qr.gv.at in following files:

- **at/gv/brz/wallet/CertificatesViewModel.java:**

```
[line 400:
BuildersKt__Builders_commonKt.launch$default(ViewModelKt.getViewModelScope(t
his), null, null, new CertificatesViewModel$loadConfig$1((ConfigRepository)
companion.getInstance(new ConfigSpec(application, "https://dgc-
trust.qr.gv.at")), this, null), 3, null);]
```

- **at/gv/brz/wallet/BuildConfig.java:**

```
[line 4: public static final String BASE_URL = "https://dgc-
trust.qr.gv.at";]
```

- **at/gv/brz/eval/CovidCertificateSdk.java:**

```
[line 171: Retrofit build = new Retrofit.Builder().baseUrl("https://dgc-
trust.qr.gv.at").client(addInterceptor.build()).addConverterFactory(new
ToByteConvertFactory()).build();]
```

- **at/gv/brz/eval/BuildConfig.java:**

```
[line 3: public static final String BASE_URL_TRUST_LIST = "https://dgc-
trust.qr.gv.at";]
```

dummy:// with value dummy:/// in following files:
- **ehn/techiop/hcert/kotlin/chain/impl/JvmSchemaLoader.java:**

```
[line 65: URI create = URI.create("dummy:///");]
[line 66: Intrinsics.checkNotNullExpressionValue(create,
"create(\"dummy:///\")");]
```

appmarket:// with value appmarket://details in following files:
- **at/gv/brz/wallet/MainActivity.java:**

```
[line 319: UrlUtil.openStoreUrl(mainActivity, "market://details?
id=at.gv.brz.wallet", "appmarket://details?id=at.gv.brz.wallet");]
```

CVSSv3 Base Score:

3.3 (AV:L/AC:L/PR:L/UI:N/S:U/C:L/I:N/A:N)

MISSING TAPJACKING PROTECTION [M1] [CWE-451] [SAST]   `LOW`

Description:

The mobile application does not have a tapjacking protection required to mitigate tapjacking attacks.
By default, Android OS permits a mobile application to display its user interface over the user interface of another application installed and run on the device. When user touches the screen, application may pass the touch event to another application below its user interface layer that the user does not see, serving like a proxy to pass unintended touch activities. This attack is quite similar to clickjacking but for mobile devices. In order to be successfully exploited, a malicious application shall be already installed on the mobile phone of the victim. An example of exploitation would be a malware app that tricks user to unwittingly tap on a payment button (or any other functionality) of a sensitive application when playing a game or doing other innocent activity in the malicious application screen.

Example of secure code:

```
public class MyActivity extends Activity {
    protected void onCreate(Bundle bundle) {
        super.onCreate(bundle);

        final Button myButton = (Button)findViewById(R.id.button_id);
        myButton.setFilterTouchesWhenObscured(true);

        myButton.setOnClickListener(new View.OnClickListener() {
            // Perform action on click
        }
    }
}

<Button
    android:layout_height="wrap_content"
    android:layout_width="wrap_content"
    android:text="@string/self_destruct"
    android:onClick="selfDestruct"
    android:filterTouchesWhenObscured="true" />
```

Details:

There is **android:filterTouchesWhenObscured="true"** missing in files:
- android/res/layout-watch/abc_alert_dialog_button_bar_material.xml
- android/res/layout-watch/abc_alert_dialog_title_material.xml
- android/res/layout-land/material_clock_period_toggle_land.xml
- android/res/layout-land/mtrl_picker_header_dialog.xml
- android/res/layout-land/material_timepicker.xml
- android/res/layout/text_view_with_theme_line_height.xml
- android/res/layout/mtrl_picker_text_input_date.xml
- android/res/layout/item_detail_value_without_label.xml
- android/res/layout/item_card_layout.xml
- android/res/layout/mtrl_alert_dialog_actions.xml
- android/res/layout/abc_list_menu_item_checkbox.xml
- android/res/layout/item_debug_certificate_list.xml
- android/res/layout/item_header_not_empty.xml
- android/res/layout/design_layout_snackbar_include.xml
- android/res/layout/design_text_input_start_icon.xml
- android/res/layout/material_clock_period_toggle.xml
- android/res/layout/abc_alert_dialog_button_bar_material.xml
- android/res/layout/mtrl_picker_header_fullscreen.xml
- android/res/layout/abc_activity_chooser_view_list_item.xml
- android/res/layout/fragment_certificate_detail.xml
- android/res/layout/dialog_progress.xml
- android/res/layout/text_view_with_line_height_from_layout.xml
- android/res/layout/design_layout_tab_icon.xml
- android/res/layout/abc_screen_content_include.xml
- android/res/layout/mtrl_picker_dialog.xml
- android/res/layout/abc_activity_chooser_view.xml
- android/res/layout/item_error_status.xml
- android/res/layout/abc_select_dialog_material.xml
- android/res/layout/test_toolbar_elevation.xml
- android/res/layout/abc_action_bar_title_item.xml
- android/res/layout/mtrl_calendar_year.xml
- android/res/layout/mtrl_alert_dialog_title.xml
- android/res/layout/test_toolbar.xml

- android/res/layout/fragment_faq.xml
- android/res/layout/fragment_region_list.xml
- android/res/layout/abc_screen_toolbar.xml
- android/res/layout/text_view_with_line_height_from_appearance.xml
- android/res/layout/material_timepicker_textinput_display.xml
- android/res/layout/material_time_input.xml
- android/res/layout/abc_dialog_title_material.xml
- android/res/layout/mtrl_picker_header_dialog.xml
- android/res/layout/abc_search_view.xml
- android/res/layout/abc_search_dropdown_item_icons_2line.xml
- android/res/layout/abc_action_menu_item_layout.xml
- android/res/layout/design_bottom_sheet_dialog.xml
- android/res/layout/fragment_onboarding_agb.xml
- android/res/layout/material_chip_input_combo.xml
- android/res/layout/material_clock_display.xml
- android/res/layout/fragment_qr_scan.xml
- android/res/layout/mtrl_calendar_months.xml
- android/res/layout/item_region.xml
- android/res/layout/fragment_onboarding_content.xml
- android/res/layout/design_bottom_navigation_item.xml
- android/res/layout/abc_action_bar_up_container.xml
- android/res/layout/notification_template_icon_group.xml
- android/res/layout/abc_list_menu_item_layout.xml
- android/res/layout/design_text_input_end_icon.xml
- android/res/layout/material_timepicker_dialog.xml
- android/res/layout/design_navigation_item_separator.xml
- android/res/layout/mtrl_calendar_day_of_week.xml
- android/res/layout/material_clockface_textview.xml
- android/res/layout/mtrl_picker_header_toggle.xml
- android/res/layout/dialog_camera_permission_explanation.xml
- android/res/layout/mtrl_calendar_month_navigation.xml
- android/res/layout/fragment_debug_log.xml
- android/res/layout/test_reflow_chipgroup.xml
- android/res/layout/material_radial_view_group.xml
- android/res/layout/mtrl_calendar_month.xml
- android/res/layout/notification_action_tombstone.xml
- android/res/layout/item_faq_question.xml
- android/res/layout/fragment_home.xml
- android/res/layout/item_certificate_list.xml
- android/res/layout/fragment_certificates_list.xml
- android/res/layout/abc_action_menu_layout.xml
- android/res/layout/notification_template_part_time.xml
- android/res/layout/notification_action.xml
- android/res/layout/abc_list_menu_item_radio.xml
- android/res/layout/mtrl_layout_snackbar_include.xml
- android/res/layout/custom_dialog.xml
- android/res/layout/mtrl_calendar_horizontal.xml
- android/res/layout/material_clock_display_divider.xml
- android/res/layout/fragment_settings.xml
- android/res/layout/mtrl_alert_select_dialog_multichoice.xml
- android/res/layout/test_toolbar_custom_background.xml
- android/res/layout/abc_screen_simple_overlay_action_mode.xml
- android/res/layout/mtrl_calendar_vertical.xml
- android/res/layout/abc_popup_menu_item_layout.xml
- android/res/layout/mtrl_picker_header_title_text.xml
- android/res/layout/mtrl_picker_fullscreen.xml
- android/res/layout/design_menu_item_action_area.xml
- android/res/layout/item_debug_log.xml

- android/res/layout/select_dialog_singlechoice_material.xml
- android/res/layout/item_detail_divider.xml
- android/res/layout/fragment_certificate_add.xml
- android/res/layout/select_dialog_item_material.xml
- android/res/layout/activity_onboarding.xml
- android/res/layout/item_detail_title.xml
- android/res/layout/fragment_html.xml
- android/res/layout/design_navigation_menu.xml
- android/res/layout/mtrl_picker_header_selection_text.xml
- android/res/layout/test_action_chip.xml
- android/res/layout/test_chip_zero_corner_radius.xml
- android/res/layout/material_timepicker.xml
- android/res/layout/support_simple_spinner_dropdown_item.xml
- android/res/layout/material_time_chip.xml
- android/res/layout/abc_alert_dialog_material.xml
- android/res/layout/mtrl_alert_select_dialog_item.xml
- android/res/layout/fragment_how_to_scan.xml
- android/res/layout/design_navigation_item.xml
- android/res/layout/abc_tooltip.xml
- android/res/layout/abc_action_mode_bar.xml
- android/res/layout/fragment_certificate_pager.xml
- android/res/layout/design_navigation_item_header.xml
- android/res/layout/test_design_checkbox.xml
- android/res/layout/mtrl_picker_text_input_date_range.xml
- android/res/layout/test_design_radiobutton.xml
- android/res/layout/item_header.xml
- android/res/layout/design_layout_snackbar.xml
- android/res/layout/mtrl_calendar_month_labeled.xml
- android/res/layout/item_faq_header.xml
- android/res/layout/abc_action_mode_close_item_material.xml
- android/res/layout/test_toolbar_surface.xml
- android/res/layout/design_navigation_item_subheader.xml
- android/res/layout/abc_list_menu_item_icon.xml
- android/res/layout/item_detail_value.xml
- android/res/layout/partial_home_add_certificate_options.xml
- android/res/layout/fragment_onboarding_intro.xml
- android/res/layout/material_textinput_timepicker.xml
- android/res/layout/abc_expanded_menu_layout.xml
- android/res/layout/abc_cascading_menu_item_layout.xml
- android/res/layout/activity_main.xml
- android/res/layout/mtrl_calendar_days_of_week.xml
- android/res/layout/text_view_without_line_height.xml
- android/res/layout/material_clockface_view.xml
- android/res/layout/mtrl_calendar_day.xml
- android/res/layout/mtrl_layout_snackbar.xml
- android/res/layout/design_navigation_menu_item.xml
- android/res/layout/notification_template_custom_big.xml
- android/res/layout/text_view_with_line_height_from_style.xml
- android/res/layout/mtrl_alert_select_dialog_singlechoice.xml
- android/res/layout/abc_popup_menu_header_item_layout.xml
- android/res/layout/abc_alert_dialog_title_material.xml
- android/res/layout/notification_template_part_chronometer.xml
- android/res/layout/mtrl_alert_dialog.xml
- android/res/layout/mtrl_picker_actions.xml
- android/res/layout/abc_screen_simple.xml
- android/res/layout/select_dialog_multichoice_material.xml
- android/res/layout/design_layout_tab_text.xml
- android/res/layout-ldrtl/material_textinput_timepicker.xml

- android/res/layout-sw600dp/design_layout_snackbar.xml
- android/res/layout-sw600dp/mtrl_layout_snackbar.xml
- android/res/layout-v26/abc_screen_toolbar.xml
- android/res/layout-v26/mtrl_calendar_month.xml

There is **'extends FrameLayout'** found in file 'at/gv/brz/common/views/WindowInsetsLayout.java':

```
[line 17: /* compiled from: WindowInsetsLayout.kt */]
[line 18: public final class WindowInsetsLayout extends FrameLayout {]
[line 19:     public static final Companion Companion = new Companion();]
```

CVSSv3 Base Score:

3.3 (AV:L/AC:H/PR:L/UI:R/S:U/C:L/I:L/A:N)

Reference:

- https://developer.android.com/guide/topics/ui/declaring-layout.html
- https://developer.android.com/guide/topics/resources/layout-resource.html
- https://blog.lookout.com/blog/2010/12/09/android-touch-event-hijacking/

TEMPORARY FILE CREATION [SAST]   WARNING

Description:

The mobile application creates temporary files. Despite that cache files are usually private by default, it is recommended to make sure that temporary files are securely deleted when they are not required by the application anymore.

Details:

There is **'createTempFile()'** found in file 'kotlin/io/FilesKt__UtilsKt.java':

```
[line 32:         Intrinsics.checkNotNullParameter(str, "prefix");]
[line 33:         File createTempFile = File.createTempFile(str, str2, file);]
[line 34:         createTempFile.delete();]
```

```
[line 55:         }]
[line 56:         return createTempFile(str, str2, file);]
[line 57:     }]
```

```
[line 59:     @Deprecated(message = "Avoid creating temporary files in the default temp
location with this function due to too wide permissions on the newly created file. Use
kotlin.io.path.createTempFile instead or resort to java.io.File.createTempFile.")]
[line 60:     public static final File createTempFile(String str, String str2, File
file) {]
[line 61:         Intrinsics.checkNotNullParameter(str, "prefix");]
[line 62:         File createTempFile = File.createTempFile(str, str2, file);]
[line 63:         Intrinsics.checkNotNullExpressionValue(createTempFile,
"File.createTempFile(prefix, suffix, directory)");]
[line 64:         return createTempFile;]
```

There is **'createTempFile()'** found in file 'kotlin/io/path/PathsKt__PathUtilsKt.java':

```
[line 728:          }]
[line 729:          Path createTempFile = Files.createTempFile(str, str2,
(FileAttribute[]) Arrays.copyOf(fileAttributeArr, fileAttributeArr.length));]
[line 730:          Intrinsics.checkNotNullExpressionValue(createTempFile,
"Files.createTempFile(prefix, suffix, *attributes)");]
[line 731:          return createTempFile;]
```

```
[line 733: ]
[line 734:     private static final Path createTempFile(String str, String str2,
FileAttribute<?>... fileAttributeArr) throws IOException {]
[line 735:          Path createTempFile = Files.createTempFile(str, str2,
(FileAttribute[]) Arrays.copyOf(fileAttributeArr, fileAttributeArr.length));]
[line 736:          Intrinsics.checkNotNullExpressionValue(createTempFile,
"Files.createTempFile(prefix, suffix, *attributes)");]
[line 737:          return createTempFile;]
```

```
[line 746:          }]
[line 747:          return createTempFile(path, str, str2, fileAttributeArr);]
[line 748:      }]
[line 749: ]
[line 750:     public static final Path createTempFile(Path path, String str, String
str2, FileAttribute<?>... fileAttributeArr) throws IOException {]
[line 751:          Intrinsics.checkNotNullParameter(fileAttributeArr, "attributes");]
[line 752:          if (path != null) {]
[line 753:           path = Files.createTempFile(path, str, str2, (FileAttribute[])
Arrays.copyOf(fileAttributeArr, fileAttributeArr.length));]
[line 754:          Intrinsics.checkNotNullExpressionValue(path,
"Files.createTempFile(dir…fix, suffix, *attributes)");]
[line 755:          return path;]
[line 756:          }]
[line 757:          path = Files.createTempFile(str, str2, (FileAttribute[])
Arrays.copyOf(fileAttributeArr, fileAttributeArr.length));]
[line 758:          Intrinsics.checkNotNullExpressionValue(path,
"Files.createTempFile(prefix, suffix, *attributes)");]
[line 759:          return path;]
```

There is **'createTempFile()'** found in file 'at/gv/brz/wallet/pdf/PdfViewModel$importPdf$1.java':

```
[line 54:              InputStream openInputStream =
this.this$0.getApplication().getContentResolver().openInputStream(this.$uri);]
[line 55:              File createTempFile = File.createTempFile("certificate",
".pdf", this.this$0.getApplication().getCacheDir());]
[line 56:              Intrinsics.checkNotNullExpressionValue(createTempFile,
"createTempFile(\"certificate\", \".pdf\", getApplication<Application>().cacheDir)");]
[line 57:              if (openInputStream != null) {]
```

Reference:

- https://developer.android.com/training/basics/data-storage/files.html

USAGE OF INTENT FILTER [M1] [CWE-927] [SAST]   `WARNING`

Description:

The mobile application uses an intent filter that may be a serious security risk if not properly implemented and filtered. Developers should not solely rely on intent filters for security purposes because they place no restrictions on explicit intents. Intent filters are defined in the Android Manifest file, they let developers choose which type of intents their application components are supposed to receive and handle.

Example of insecure code:

```
<intent-filter>
    <action android:name="android.intent.action.VIEW" />
    <action android:name="android.intent.action.EDIT" />
    <action android:name="android.intent.action.PICK" />
    <category android:name="android.intent.category.DEFAULT" />
    <data mimeType:name="vnd.android.cursor.dir/vnd.google.note" />
</intent-filter>
```

Example of secure code:

```
// When you use intent-filter, you have to perform input validation in your code.
```

Details:

There is **'<intent-filter>'** found in file 'android/AndroidManifest.xml':

```
[line 9:          <activity android:name="at.gv.brz.wallet.MainActivity"
android:screenOrientation="portrait">]
[line 10:              <intent-filter>]
[line 11:                  <action android:name="android.intent.action.MAIN"/>]
```

```
[line 13:              </intent-filter>]
[line 14:              <intent-filter>]
[line 15:                  <action android:name="android.intent.action.SEND"/>]
```

```
[line 33:          <receiver android:directBootAware="false" android:enabled="false"
android:exported="false"
android:name="androidx.work.impl.background.systemalarm.ConstraintProxy$BatteryCharging
Proxy">]
[line 34:              <intent-filter>]
[line 35:                  <action
android:name="android.intent.action.ACTION_POWER_CONNECTED"/>]
```

```
[line 39:          <receiver android:directBootAware="false" android:enabled="false"
android:exported="false"
android:name="androidx.work.impl.background.systemalarm.ConstraintProxy$BatteryNotLowPr
oxy">]
[line 40:              <intent-filter>]
[line 41:                  <action android:name="android.intent.action.BATTERY_OKAY"/>]
```

```
[line 45:          <receiver android:directBootAware="false" android:enabled="false"
android:exported="false"
android:name="androidx.work.impl.background.systemalarm.ConstraintProxy$StorageNotLowPr
oxy">]
[line 46:               <intent-filter>]
[line 47:                    <action
android:name="android.intent.action.DEVICE_STORAGE_LOW"/>]
```

```
[line 51:          <receiver android:directBootAware="false" android:enabled="false"
android:exported="false"
android:name="androidx.work.impl.background.systemalarm.ConstraintProxy$NetworkStatePro
xy">]
[line 52:               <intent-filter>]
[line 53:                    <action
android:name="android.net.conn.CONNECTIVITY_CHANGE"/>]
```

```
[line 56:          <receiver android:directBootAware="false" android:enabled="false"
android:exported="false"
android:name="androidx.work.impl.background.systemalarm.RescheduleReceiver">]
[line 57:               <intent-filter>]
[line 58:                    <action
android:name="android.intent.action.BOOT_COMPLETED"/>]
```

```
[line 63:          <receiver android:directBootAware="false"
android:enabled="@bool/enable_system_alarm_service_default" android:exported="false"
android:name="androidx.work.impl.background.systemalarm.ConstraintProxyUpdateReceiver">
]
[line 64:               <intent-filter>]
[line 65:                    <action
android:name="androidx.work.impl.background.systemalarm.UpdateProxies"/>]
```

```
[line 68:          <receiver android:directBootAware="false" android:enabled="true"
android:exported="true"
android:name="androidx.work.impl.diagnostics.DiagnosticsReceiver"
android:permission="android.permission.DUMP">]
[line 69:               <intent-filter>]
[line 70:                    <action
android:name="androidx.work.diagnostics.REQUEST_DIAGNOSTICS"/>]
```

Reference:

- https://developer.android.com/guide/components/intents-filters.html
- https://developer.android.com/training/articles/security-tips.html

DYNAMIC LOAD OF CODE [M7] [CWE-94] [SAST]   `WARNING`

Description:

The mobile application uses dynamic load of executable code. Under certain circumstances, dynamic load of code can be dangerous. For example, if the code is located on an external storage (e.g. SD card), this can lead to code injection vulnerability if the external storage is world readable and/or writable and an attacker can access it.

Example of insecure code:

```
Object test = loader.loadClass("Test", true).newInstance();
```

Example of secure code:

```
// If you are using code from unsafe place (like external storage),
// you should sign and cryptographically verify your code.
```

Details:

There is **'ClassLoader'** found in file 'j$/time/zone/ZoneRulesProvider.java':

```
[line 57:                      try {]
[line 58:                          ZoneRulesProvider zoneRulesProvider =
(ZoneRulesProvider) cls.cast(Class.forName(property, true,
cls.getClassLoader())).newInstance());]
[line 59:
ZoneRulesProvider.registerProvider(zoneRulesProvider);]
```

There is **'ClassLoader'** found in file 'io/jsonwebtoken/impl/lang/Services.java':

```
[line 10: public final class Services {]
[line 11:     private static final List<ClassLoaderAccessor> CLASS_LOADER_ACCESSORS =
Collections.arrayToList(new ClassLoaderAccessor[]{new ClassLoaderAccessor() {]
[line 12:         public ClassLoader getClassLoader() {]
[line 13:             return Thread.currentThread().getContextClassLoader();]
[line 14:         }]
[line 15:     }, new ClassLoaderAccessor() {]
[line 16:         public ClassLoader getClassLoader() {]
[line 17:             return Services.class.getClassLoader();]
[line 18:         }]
[line 19:     }, new ClassLoaderAccessor() {]
[line 20:         public ClassLoader getClassLoader() {]
[line 21:             return ClassLoader.getSystemClassLoader();]
[line 22:         }]
```

```
[line 24: ]
[line 25:     private interface ClassLoaderAccessor {]
[line 26:         ClassLoader getClassLoader();]
[line 27:     }]
```

```
[line 33:         Assert.notNull(cls, "Parameter 'spi' must not be null.");]
[line 34:         for (ClassLoaderAccessor ClassLoader : CLASS_LOADER_ACCESSORS) {]
[line 35:             List loadAll = loadAll(cls, classLoader.getClassLoader());]
[line 36:             if (!loadAll.isEmpty()) {]
```

```
[line 42: ]
[line 43:    private static <T> List<T> loadAll(Class<T> cls, ClassLoader ClassLoader)
{]
[line 44:        ServiceLoader load = ServiceLoader.load(cls, ClassLoader);]
[line 45:        ArrayList arrayList = new ArrayList();]
```

```
[line 54:        Assert.notNull(cls, "Parameter 'spi' must not be null.");]
[line 55:        for (ClassLoaderAccessor ClassLoader : CLASS_LOADER_ACCESSORS) {]
[line 56:            Object loadFirst = loadFirst(cls, classLoader.getClassLoader());]
[line 57:            if (loadFirst != null) {]
```

```
[line 63: ]
[line 64:    private static <T> T loadFirst(Class<T> cls, ClassLoader ClassLoader) {]
[line 65:        ServiceLoader load = ServiceLoader.load(cls, ClassLoader);]
[line 66:        return load.iterator().hasNext() ? load.iterator().next() : null;]
```

There is **'ClassLoader'** found in file 'io/jsonwebtoken/lang/Classes.java':

```
[line 7: public final class Classes {]
[line 8:    private static final ClassLoaderAccessor CLASS_CL_ACCESSOR = new
ExceptionIgnoringAccessor() {]
[line 9:        /* Access modifiers changed, original: protected */]
[line 10:        public ClassLoader doGetClassLoader() throws Throwable {]
[line 11:            return Classes.class.getClassLoader();]
[line 12:        }]
[line 13:    };]
[line 14:    private static final ClassLoaderAccessor SYSTEM_CL_ACCESSOR = new
ExceptionIgnoringAccessor() {]
[line 15:        /* Access modifiers changed, original: protected */]
[line 16:        public ClassLoader doGetClassLoader() throws Throwable {]
[line 17:            return ClassLoader.getSystemClassLoader();]
[line 18:        }]
[line 19:    };]
[line 20:    private static final ClassLoaderAccessor THREAD_CL_ACCESSOR = new
ExceptionIgnoringAccessor() {]
[line 21:        /* Access modifiers changed, original: protected */]
[line 22:        public ClassLoader doGetClassLoader() throws Throwable {]
[line 23:            return Thread.currentThread().getContextClassLoader();]
[line 24:        }]
```

```
[line 26: ]
[line 27:    private interface ClassLoaderAccessor {]
[line 28:        InputStream getResourceStream(String str);]
```

```
[line 32: ]
[line 33:     private static abstract class ExceptionIgnoringAccessor implements
ClassLoaderAccessor {]
[line 34:         public abstract ClassLoader doGetClassLoader() throws Throwable;]
[line 35:]
```

```
[line 43:         public Class loadClass(String str) {]
[line 44:             ClassLoader classLoader = getClassLoader();]
[line 45:             if (ClassLoader != null) {]
[line 46:                 try {]
[line 47:                     return ClassLoader.loadClass(str);]
[line 48:                 } catch (ClassNotFoundException unused) {]
```

```
[line 54:         public InputStream getResourceStream(String str) {]
[line 55:             ClassLoader classLoader = getClassLoader();]
[line 56:             return classLoader != null ? ClassLoader.getResourceAsStream(str)
: null;]
[line 57:         }]
```

```
[line 59:         /* Access modifiers changed, original: protected|final */]
[line 60:         public final ClassLoader getClassLoader() {]
[line 61:             try {]
[line 62:                 return doGetClassLoader();]
[line 63:             } catch (Throwable unused) {]
```

```
[line 86:         stringBuilder.append("] from the thread context, current, or ");]
[line 87:         stringBuilder.append("system/application ClassLoaders.  All
heuristics have been exhausted.  Class could not be found.");]
[line 88:         String stringBuilder2 = stringBuilder.toString();]
```

There is **'ClassLoader'** found in file 'kotlin/reflect/jvm/internal/UtilKt.java':

```
[line 75: ]
[line 76:
\u0002\b\u00030\u00012\u0006\u00104\u001a\u00028\u00002\u0006\u00106\u001a\u0002052\u00
06\u00108\u001a\u0002072\u0006\u0010:\u001a\u0002092\u001d\u0010>\u001a\u0019\u0012\u00
04\u0012\u00020<\u0012\u0004\u0012\u00028\u0000\u0012\u0004\u0012\u00028\u00010;¢
\u0006\u0002\b=H\u0000¢\u0006\u0004\b?
\u0010@\u001a'\u0010D\u001a\u00028\u0000\"\u0004\b\u0000\u0010A2\f\u0010C\u001a\b\u0012
\u0004\u0012\u00028\u00000BH⯑\b∅\u0001\u0000¢
\u0006\u0004\bD\u0010E\"\u001c\u0010G\u001a\u00020F8\u0000@\u0000X⯑\u0004¢
\u0006\f\n\u0004\bG\u0010H\u001a\u0004\bI\u0010J\"\u001a\u0010M\u001a\u00020L*\u00020K8
@@\u0000X⯑\u0004¢
\u0006\u0006\u001a\u0004\bM\u0010N\"\u001c\u0010R\u001a\u0004\u0018\u000010O*\u00022018@@
\u0000X⯑\u0004¢
\u0006\u0006\u001a\u0004\bP\u0010Q⯑\u0002\u0007\n\u0005\b⯑20\u0001¨\u0006S"}, d2 =
{"Lkotlin/reflect/jvm/internal/impl/descriptors/ClassDescriptor;", "Ljava/lang/Class;",
"toJavaClass", "
(Lkotlin/reflect/jvm/internal/impl/descriptors/ClassDescriptor;)Ljava/lang/Class;",
"Ljava/lang/ClassLoader;[CUTTED]]
[line 77: /* compiled from: util.kt */]
```

```
[line 102:                }]
[line 103:            klass =
loadClass(ReflectClassUtilKt.getSafeClassLoader(classDescriptor.getClass()), classId,
0);]
[line 104:            }]
```

```
[line 107: ]
[line 108:     static /* synthetic */ Class loadClass$default(ClassLoader ClassLoader,
ClassId classId, int i, int i2, Object obj) {]
[line 109:         if ((i2 & 4) != 0) {]
```

```
[line 111:         }]
[line 112:         return loadClass(ClassLoader, classId, i);]
[line 113:     }]
[line 114: ]
[line 115:     private static final Class<?> loadClass(ClassLoader ClassLoader, ClassId
classId, int i) {]
[line 116:         JavaToKotlinClassMap javaToKotlinClassMap =
JavaToKotlinClassMap.INSTANCE;]
```

```
[line 126:         Intrinsics.checkNotNullExpressionValue(asString2,
"javaClassId.relativeClassName.asString()");]
[line 127:         return loadClass(ClassLoader, asString, asString2, i);]
[line 128:     }]
[line 129: ]
[line 130:     private static final Class<?> loadClass(ClassLoader ClassLoader, String
str, String str2, int i) {]
[line 131:         if (Intrinsics.areEqual((Object) str, (Object) "kotlin")) {]
```

```
[line 192:          }]
[line 193:          return ReflectJavaClassFinderKt.tryLoadClass(ClassLoader, str);]
[line 194:       }]
```

```
[line 254:          ConstantValue constantValue = (ConstantValue) entry.getValue();]
[line 255:          ClassLoader classLoader = toJavaClass.getClassLoader();]
[line 256:          Intrinsics.checkNotNullExpressionValue(classLoader,
"annotationClass.ClassLoader");]
[line 257:          Object toRuntimeValue = toRuntimeValue(constantValue,
ClassLoader);]
[line 258:          toRuntimeValue = toRuntimeValue != null ?
TuplesKt.to(name.asString(), toRuntimeValue) : null;]
```

```
[line 265: ]
[line 266:    private static final Object toRuntimeValue(ConstantValue<?>
constantValue, ClassLoader ClassLoader) {]
[line 267:          if (constantValue instanceof AnnotationValue) {]
```

```
[line 273:          for (ConstantValue toRuntimeValue : iterable) {]
[line 274:              arrayList.add(toRuntimeValue(toRuntimeValue, ClassLoader));]
[line 275:          }]
```

```
[line 282:          Name name = (Name) pair.component2();]
[line 283:          Class loadClass$default = loadClass$default(ClassLoader,
classId, 0, 4, null);]
[line 284:          if (loadClass$default == null) {]
```

```
[line 292:              NormalClass normalClass = (NormalClass) value;]
[line 293:              return loadClass(ClassLoader, normalClass.getClassId(),
normalClass.getArrayDimensions());]
[line 294:          } else if (value instanceof LocalClass) {]
```

```
[line 376:       Intrinsics.checkNotNullParameter(function22, "createDescriptor");]
[line 377:       RuntimeModuleData orCreateModule =
ModuleByClassLoaderKt.getOrCreateModule(cls);]
[line 378:          if (m2 instanceof Function) {]
```

There is **'ClassLoader'** found in file 'kotlin/reflect/jvm/internal/KDeclarationContainerImpl$Data$moduleData$2.java':

```
[line 19:    public final RuntimeModuleData invoke() {]
[line 20:       return
ModuleByClassLoaderKt.getOrCreateModule(KDeclarationContainerImpl.this.getJClass());]
[line 21:    }]
```

There is **'ClassLoader'** found in file 'kotlin/reflect/jvm/internal/ModuleByClassLoaderKt.java':

```
[line 10: ]
[line 11: @Metadata(bv = {1, 0, 3}, d1 =
{"\u0000$\n\u0002\u0018\u0002\n\u0002\u0018\u0002\n\u0002\b\u0002\n\u0002\u0010\u0002\n
\u0002\b\u0002\n\u0002\u0018\u0002\n\u0002\u0018\u0002\n\u0002\u0018\u0002\n\u0002\b\u0
003\u001a\u0017\u0010\u0002\u001a\u00020\u0001*\u0006\u0012\u0002\b\u00030\u0000H\u0000
¢\u0006\u0004\b\u0002\u0010\u0003\u001a\u000f\u0010\u0005\u001a\u00020\u0004H\u0000¢
\u0006\u0004\b\u0005\u0010\u0006\"
(\u0010\n\u001a\u0014\u0012\u0004\u0012\u00020\b\u0012\n\u0012\b\u0012\u0004\u0012\u000
20\u00010\t0\u00078\u0002@\u0002X\u0004¢
\u0006\u0006\n\u0004\b\n\u0010\u000b¨\u0006\f"}, d2 = {"Ljava/lang/Class;",
"Lkotlin/reflect/jvm/internal/impl/descriptors/runtime/components/RuntimeModuleData;",
"getOrCreateModule", "
(Ljava/lang/Class;)Lkotlin/reflect/jvm/internal/impl/descriptors/runtime/components/Run
timeModuleData;", "", "clearModuleByClassLoaderCache", "()V",
"Ljava/util/concurrent/ConcurrentMap;",
"Lkotlin/reflect/jvm/internal/WeakClassLoaderBox;", "Ljava/lang/ref/WeakReference;",
"moduleByClassLoader", "Ljava/util/concurrent/ConcurrentMap;", "kotlin-reflection"}, k
= 2, mv = {1, 5, 1})]
[line 12: /* compiled from: moduleByClassLoader.kt */]
[line 13: public final class ModuleByClassLoaderKt {]
[line 14:     private static final ConcurrentMap<WeakClassLoaderBox,
WeakReference<RuntimeModuleData>> moduleByClassLoader = new ConcurrentHashMap();]
[line 15:]
```

```
[line 18:         Intrinsics.checkNotNullParameter(cls, "$this$getOrCreateModule");]
[line 19:         ClassLoader safeClassLoader =
ReflectClassUtilKt.getSafeClassLoader(cls);]
[line 20:         WeakClassLoaderBox weakClassLoaderBox = new
WeakClassLoaderBox(safeClassLoader);]
[line 21:         ConcurrentMap concurrentMap = moduleByClassLoader;]
[line 22:         WeakReference weakReference = (WeakReference)
concurrentMap.get(weakClassLoaderBox);]
[line 23:         if (weakReference != null) {]
```

```
[line 28:             }]
[line 29:             concurrentMap.remove(weakClassLoaderBox, weakReference);]
[line 30:         }]
[line 31:         RuntimeModuleData create =
RuntimeModuleData.Companion.create(safeClassLoader);]
[line 32:         while (true) {]
[line 33:             try {]
[line 34:                 ConcurrentMap concurrentMap2 = moduleByClassLoader;]
[line 35:                 WeakReference weakReference2 = (WeakReference)
concurrentMap2.putIfAbsent(weakClassLoaderBox, new WeakReference(create));]
[line 36:                 if (weakReference2 != null) {]
```

```
[line 40:                         }]
[line 41:                         concurrentMap2.remove(weakClassLoaderBox,
weakReference2);]
[line 42:              } else {]
[line 43:                  weakClassLoaderBox.setTemporaryStrongRef((ClassLoader)
null);]
[line 44:                  return create;]
```

```
[line 46:              } finally {]
[line 47:                  weakClassLoaderBox.setTemporaryStrongRef((ClassLoader)
null);]
[line 48:              }]
```

```
[line 52: ]
[line 53:      public static final void clearModuleByClassLoaderCache() {]
[line 54:          moduleByClassLoader.clear();]
[line 55:      }]
```

There is **'ClassLoader'** found in file 'kotlin/reflect/jvm/internal/ReflectionFactoryImpl.java':

```
[line 136:          KClassCacheKt.clearKClassCache();]
[line 137:          ModuleByClassLoaderKt.clearModuleByClassLoaderCache();]
[line 138:      }]
```

There is **'ClassLoader'** found in file 'kotlin/reflect/jvm/internal/KPackageImpl$Data$multifileFacade$2.java':

```
[line 52:          r0 = r0.getJClass();]
[line 53:          r0 = r0.getClassLoader();]
[line 54:          r3 = 47;]
```

There is **'ClassLoader'** found in file 'kotlin/reflect/jvm/internal/WeakClassLoaderBox.java':

```
[line 6: ]
[line 7: @Metadata(bv = {1, 0, 3}, d1 =
{"\u0000.\n\u0002\u0018\u0002\n\u0002\u0010\u0000\n\u0000\n\u0002\u0010\u000b\n\u0002\b
\u0002\n\u0002\u0010\b\n\u0002\b\u0002\n\u0002\u0010\u000e\n\u0002\b\u0005\n\u0002\u001
8\u0002\n\u0002\u0018\u0002\n\u0002\b\r\b\u0002\u0018\u00002\u00020\u0001B\u000f\u0012\
u0006\u0010\u001b\u001a\u00020\u0010¢
\u0006\u0004\b\u001c\u0010\u001aJ\u001a\u0010\u0004\u001a\u00020\u00032\b\u0010\u0002\u
001a\u0004\u0018\u00010\u0001H\u0002¢
\u0006\u0004\b\u0004\u0010\u0005J\u000f\u0010\u0007\u001a\u00020\u0006H\u0016¢
\u0006\u0004\b\u0007\u0010\bJ\u000f\u0010\n\u001a\u00020\tH\u0016¢
\u0006\u0004\b\n\u0010\u000bR\u0019\u0010\f\u001a\u00020\u00068\u0006@\u0006¢
\u0006\f\n\u0004\b\f\u0010\r\u001a\u0004\b\u000e\u0010\bR\u001f\u0010\u0011\u001a\b\u00
12\u0004\u0012\u00020\u00100\u000f8\u0006@\u0006¢
\u0006\f\n\u0004\b\u0011\u0010\u0012\u001a\u0004\b\u0013\u0010\u0014R$\u0010\u0015\u001
a\u0004\u0018\u00010\u00108\u0006@\u0006X\u000e¢
\u0006\u0012\n\u0004\b\u0015\u0010\u0016\u001a\u0004\b\u0017\u0010\u0018\"\u0004\b\u001
9\u0010\u001a¨\u0006\u001d"}, d2 = {"Lkotlin/reflect/jvm/internal/WeakClassLoaderBox;",
"", "other", "", "equals", "(Ljava/lang/Object;)Z", "", "hashCode", "()I", "",
"toString", "()Ljava/lang/String;", "identityHashCode", "I", "getIdentityHashCode",
"Ljava/lang/ref/WeakReference;", "Ljava/lang/ClassLoader;", "ref",
"Ljava/lang/ref/WeakReference;", "getRef", "()Ljava/lang/ref/WeakReference;",
"temporaryStrongRef", "Ljava/lang/ClassLoader;", "getTemporaryStrongRef", "
()Ljava/lang/ClassLoader;", "setTemporaryStrongRef", "(Ljava/lang/ClassLoader;)V",
"ClassLoader", "<init>", "kotlin-reflection"}, k = 1, mv = {1, 5, 1})]
[line 8: /* compiled from: moduleByClassLoader.kt */]
[line 9: final class WeakClassLoaderBox {]
[line 10:     private final int identityHashCode;]
[line 11:     private final WeakReference<ClassLoader> ref;]
[line 12:     private ClassLoader temporaryStrongRef;]
[line 13: ]
[line 14:     public WeakClassLoaderBox(ClassLoader ClassLoader) {]
[line 15:         Intrinsics.checkNotNullParameter(classLoader, "ClassLoader");]
[line 16:         this.ref = new WeakReference(ClassLoader);]
[line 17:         this.identityHashCode = System.identityHashCode(ClassLoader);]
[line 18:         this.temporaryStrongRef = ClassLoader;]
[line 19:     }]
[line 20: ]
[line 21:     public final void setTemporaryStrongRef(ClassLoader ClassLoader) {]
[line 22:         this.temporaryStrongRef = ClassLoader;]
[line 23:     }]
```

```
[line 25:     public boolean equals(Object obj) {]
[line 26:          return (obj instanceof WeakClassLoaderBox) && ((ClassLoader)
this.ref.get()) == ((ClassLoader) ((WeakClassLoaderBox) obj).ref.get());]
[line 27:      }]
```

```
[line 33:     public String toString() {]
[line 34:          ClassLoader classLoader = (ClassLoader) this.ref.get();]
[line 35:          if (ClassLoader != null) {]
[line 36:              String classLoader2 = ClassLoader.toString();]
[line 37:              if (ClassLoader2 != null) {]
[line 38:                  return ClassLoader2;]
[line 39:              }]
```

There is **'ClassLoader'** found in file 'kotlin/reflect/jvm/internal/KDeclarationContainerImpl.java':

```
[line 320:              if (z) {]
[line 321:                  ClassLoader safeClassLoader =
ReflectClassUtilKt.getSafeClassLoader(cls3);]
[line 322:                  StringBuilder stringBuilder = new StringBuilder();]
```

```
[line 324:                  stringBuilder.append("$DefaultImpls");]
[line 325:                  superclass =
ReflectJavaClassFinderKt.tryLoadClass(safeClassLoader, stringBuilder.toString());]
[line 326:                  if (superclass != null) {]
```

```
[line 518:          if (charAt == Matrix.MATRIX_TYPE_RANDOM_LT) {]
[line 519:          ClassLoader safeClassLoader =
ReflectClassUtilKt.getSafeClassLoader(getJClass());]
[line 520:          i++;]
```

```
[line 524:          Intrinsics.checkNotNullExpressionValue(substring, "(this as
java.lang.Strin…ing(startIndex, endIndex)");]
[line 525:          loadClass =
safeClassLoader.loadClass(StringsKt__StringsJVMKt.replace$default(substring, (char)
JsonPointer.SEPARATOR, (char) JwtParser.SEPARATOR_CHAR, false, 4, null));]
[line 526:          Intrinsics.checkNotNullExpressionValue(loadClass,
"jClass.safeClassLoader.l…d - 1).replace('/', '.'))");]
[line 527:          return loadClass;]
```

There is **'ClassLoader'** found in file 'kotlin/reflect/jvm/internal/calls/AnnotationConstructorCallerKt.java':

```
[line 102:          Lazy lazy2 = LazyKt__LazyJVMKt.lazy(new
AnnotationConstructorCallerKt$createAnnotationInstance$toString$2(cls, map));]
[line 103:          Object newProxyInstance =
Proxy.newProxyInstance(cls.getClassLoader(), new Class[]{cls}, new
AnnotationConstructorCallerKt$createAnnotationInstance$result$1(cls, lazy2, null, lazy,
null, annotationConstructorCallerKt$createAnnotationInstance$2, map));]
[line 104:          Objects.requireNonNull(newProxyInstance, "null cannot be cast to
non-null type T");]
```

There is **'ClassLoader'** found in file 'kotlin/reflect/jvm/internal/impl/resolve/OverridingUtil.java':

```
[line 59:    private static final TypeConstructorEquality
DEFAULT_TYPE_CONSTRUCTOR_EQUALITY;]
[line 60:    private static final List<ExternalOverridabilityCondition>
EXTERNAL_CONDITIONS =
CollectionsKt___CollectionsKt.toList(ServiceLoader.load(ExternalOverridabilityCondition
.class, ExternalOverridabilityCondition.class.getClassLoader()));]
[line 61:    private final TypeConstructorEquality equalityAxioms;]
```

There is **'ClassLoader'** found in file
'kotlin/reflect/jvm/internal/impl/serialization/deserialization/builtins/BuiltInsResourceLoader.java':

```
[line 9:        Intrinsics.checkNotNullParameter(str, "path");]
[line 10:        ClassLoader classLoader = getClass().getClassLoader();]
[line 11:        InputStream resourceAsStream = classLoader == null ? null :
ClassLoader.getResourceAsStream(str);]
[line 12:        return resourceAsStream == null ?
ClassLoader.getSystemResourceAsStream(str) : resourceAsStream;]
[line 13:    }]
```

There is **'ClassLoader'** found in file 'kotlin/reflect/jvm/internal/impl/builtins/BuiltInsLoader$Companion$Instance$2.java':

```
[line 16:    public final BuiltInsLoader invoke() {]
[line 17:        ServiceLoader load = ServiceLoader.load(BuiltInsLoader.class,
BuiltInsLoader.class.getClassLoader());]
[line 18:        Intrinsics.checkNotNullExpressionValue(load, "implementations");]
```

There is **'ClassLoader'** found in file 'kotlin/reflect/jvm/internal/impl/descriptors/DescriptorVisibilities.java':

```
[line 482:        DEFAULT_VISIBILITY = anonymousClass5;]
[line 483:        Iterator it = ServiceLoader.load(ModuleVisibilityHelper.class,
ModuleVisibilityHelper.class.getClassLoader()).iterator();]
[line 484:        MODULE_VISIBILITY_HELPER = it.hasNext() ? (ModuleVisibilityHelper)
it.next() : EMPTY.INSTANCE;]
```

There is **'ClassLoader'** found in file
'kotlin/reflect/jvm/internal/impl/descriptors/runtime/components/ReflectJavaClassFinderKt.java':

```
[line 6: public final class ReflectJavaClassFinderKt {]
[line 7:    public static final Class<?> tryLoadClass(ClassLoader ClassLoader, String
str) {]
[line 8:        Intrinsics.checkNotNullParameter(ClassLoader, "<this>");]
[line 9:        Intrinsics.checkNotNullParameter(str, "fqName");]
[line 10:        try {]
[line 11:            return Class.forName(str, false, ClassLoader);]
[line 12:        } catch (ClassNotFoundException unused) {]
```

There is **'ClassLoader'** found in file
'kotlin/reflect/jvm/internal/impl/descriptors/runtime/components/ReflectJavaClassFinder.java':

```
[line 17: public final class ReflectJavaClassFinder implements JavaClassFinder {]
[line 18:     private final ClassLoader ClassLoader;]
[line 19:]
```

```
[line 24: ]
[line 25:     public ReflectJavaClassFinder(ClassLoader ClassLoader) {]
[line 26:         Intrinsics.checkNotNullParameter(classLoader, "ClassLoader");]
[line 27:         this.classLoader = ClassLoader;]
[line 28:     }]
```

```
[line 44:         }]
[line 45:         Class tryLoadClass =
ReflectJavaClassFinderKt.tryLoadClass(this.ClassLoader, replace$default);]
[line 46:         return tryLoadClass != null ? new ReflectJavaClass(tryLoadClass) :
null;]
```

There is **'ClassLoader'** found in file
'kotlin/reflect/jvm/internal/impl/descriptors/runtime/components/RuntimeModuleData.java':

```
[line 43: ]
[line 44:         public final RuntimeModuleData create(ClassLoader ClassLoader) {]
[line 45:             ClassLoader classLoader2 = ClassLoader;]
[line 46:             Intrinsics.checkNotNullParameter(classLoader2, "ClassLoader");]
[line 47:             StorageManager lockBasedStorageManager = new
LockBasedStorageManager("RuntimeModuleData");]
```

```
[line 50:             stringBuilder.append("<runtime module for ");]
[line 51:             stringBuilder.append(ClassLoader2);]
[line 52:             stringBuilder.append(Typography.greater);]
[line 53:             Name special = Name.special(stringBuilder.toString());]
[line 54:             Intrinsics.checkNotNullExpressionValue(special, "special(\"
<runtime module for $ClassLoader>\")");]
[line 55:             ModuleDescriptorImpl moduleDescriptorImpl = new
ModuleDescriptorImpl(special, lockBasedStorageManager, jvmBuiltIns, null, null, null,
56, null);]
```

```
[line 58:             jvmBuiltIns.initialize(moduleDescriptor, true);]
[line 59:             ReflectKotlinClassFinder reflectKotlinClassFinder = new
ReflectKotlinClassFinder(ClassLoader2);]
[line 60:             DeserializedDescriptorResolver deserializedDescriptorResolver =
new DeserializedDescriptorResolver();]
```

```
[line 66:              StorageManager storageManager = lockBasedStorageManager;]
[line 67:              LazyJavaPackageFragmentProvider
makeLazyJavaPackageFragmentFromClassLoaderProvider$default =
RuntimeModuleDataKt.makeLazyJavaPackageFragmentFromClassLoaderProvider$default(ClassLoa
der2, moduleDescriptor, lockBasedStorageManager, notFoundClasses, kotlinClassFinder,
deserializedDescriptorResolver, singleModuleClassResolver, null, 128, null);]
[line 68:              DeserializationComponentsForJava
makeDeserializationComponentsForJava =
RuntimeModuleDataKt.makeDeserializationComponentsForJava(moduleDescriptor,
storageManager, notFoundClasses2,
makeLazyJavaPackageFragmentFromClassLoaderProvider$default, kotlinClassFinder,
deserializedDescriptorResolver);]
[line 69:
deserializedDescriptorResolver.setComponents(makeDeserializationComponentsForJava);]
```

```
[line 71:              Intrinsics.checkNotNullExpressionValue(javaResolverCache,
"EMPTY");]
[line 72:              singleModuleClassResolver.setResolver(new
JavaDescriptorResolver(makeLazyJavaPackageFragmentFromClassLoaderProvider$default,
javaResolverCache));]
[line 73:              classLoader2 = Unit.class.getClassLoader();]
[line 74:              Intrinsics.checkNotNullExpressionValue(classLoader2,
"stdlibClassLoader");]
[line 75:              StorageManager storageManager2 = storageManager;]
```

```
[line 78:              ReflectKotlinClassFinder reflectKotlinClassFinder2 =
reflectKotlinClassFinder;]
[line 79:              KotlinClassFinder reflectKotlinClassFinder3 = new
ReflectKotlinClassFinder(ClassLoader2);]
[line 80:              int i = 1;]
```

There is **'ClassLoader'** found in file
'kotlin/reflect/jvm/internal/impl/descriptors/runtime/components/ReflectKotlinClassFinder.java':

```
[line 17:     private final BuiltInsResourceLoader builtInsResourceLoader = new
BuiltInsResourceLoader();]
[line 18:     private final ClassLoader ClassLoader;]
[line 19: ]
[line 20:     public ReflectKotlinClassFinder(ClassLoader ClassLoader) {]
[line 21:         Intrinsics.checkNotNullParameter(classLoader, "ClassLoader");]
[line 22:         this.classLoader = ClassLoader;]
[line 23:     }]
```

```
[line 25:     private final Result findKotlinClass(String str) {]
[line 26:         Class tryLoadClass =
ReflectJavaClassFinderKt.tryLoadClass(this.ClassLoader, str);]
[line 27:         byte[] bArr = null;]
```

There is **'ClassLoader'** found in file
'kotlin/reflect/jvm/internal/impl/descriptors/runtime/components/RuntimeModuleDataKt$makeLazyJavaPackageFragmentFromClassLoaderProvider$javaResolverComponents$1.java':

```
[line 9: /* compiled from: RuntimeModuleData.kt */]
[line 10: public final class
RuntimeModuleDataKt$makeLazyJavaPackageFragmentFromClassLoaderProvider$javaResolverComp
onents$1 implements JavaModuleAnnotationsProvider {]
[line 11:    public List<JavaAnnotation> getAnnotationsForModuleOwnerOfClass(ClassId
classId) {]
```

```
[line 15: ]
[line 16:
RuntimeModuleDataKt$makeLazyJavaPackageFragmentFromClassLoaderProvider$javaResolverComp
onents$1() {]
[line 17:    }]
```

There is **'ClassLoader'** found in file
'kotlin/reflect/jvm/internal/impl/descriptors/runtime/components/RuntimeModuleDataKt.java':

```
[line 42: public final class RuntimeModuleDataKt {]
[line 43:    public static /* synthetic */ LazyJavaPackageFragmentProvider
makeLazyJavaPackageFragmentFromClassLoaderProvider$default(ClassLoader ClassLoader,
ModuleDescriptor moduleDescriptor, StorageManager storageManager, NotFoundClasses
notFoundClasses, KotlinClassFinder kotlinClassFinder, DeserializedDescriptorResolver
deserializedDescriptorResolver, ModuleClassResolver moduleClassResolver,
PackagePartProvider packagePartProvider, int i, Object obj) {]
[line 44:        return
makeLazyJavaPackageFragmentFromClassLoaderProvider(ClassLoader, moduleDescriptor,
storageManager, notFoundClasses, kotlinClassFinder, deserializedDescriptorResolver,
moduleClassResolver, (i & 128) != 0 ? Empty.INSTANCE : packagePartProvider);]
[line 45:    }]
[line 46: ]
[line 47:    public static final LazyJavaPackageFragmentProvider
makeLazyJavaPackageFragmentFromClassLoaderProvider(ClassLoader ClassLoader,
ModuleDescriptor moduleDescriptor, StorageManager storageManager, NotFoundClasses
notFoundClasses, KotlinClassFinder kotlinClassFinder, DeserializedDescriptorResolver
deserializedDescriptorResolver, ModuleClassResolver moduleClassResolver,
PackagePartProvider packagePartProvider) {]
[line 48:        ClassLoader classLoader2 = ClassLoader;]
[line 49:        ModuleDescriptor moduleDescriptor2 = moduleDescriptor;]
```

```
[line 57:        PackagePartProvider packagePartProvider2 = packagePartProvider;]
[line 58:        Intrinsics.checkNotNullParameter(classLoader2, "ClassLoader");]
[line 59:        Intrinsics.checkNotNullParameter(moduleDescriptor2, "module");]
```

```
[line 68:          JavaTypeEnhancementState javaTypeEnhancementState =
JavaTypeEnhancementState.DISABLED_JSR_305;]
[line 69:          JavaClassFinder reflectJavaClassFinder = new
ReflectJavaClassFinder(ClassLoader2);]
[line 70:          SignaturePropagator signaturePropagator =
SignaturePropagator.DO_NOTHING;]
```

```
[line 96:          storageManager3 = storageManager4;]
[line 97:          JavaResolverComponents javaResolverComponents3 = new
JavaResolverComponents(storageManager3, javaClassFinder, kotlinClassFinder3,
deserializedDescriptorResolver2, signaturePropagator2, errorReporter,
javaResolverCache2, javaPropertyInitializerEvaluator, samConversionResolverImpl,
javaSourceElementFactory, moduleClassResolver2, packagePartProvider2,
supertypeLoopChecker, lookupTracker, moduleDescriptor3, reflectionTypes,
annotationTypeQualifierResolver, signatureEnhancement,
JavaClassesTracker.Default.INSTANCE, Default.INSTANCE,
NewKotlinTypeChecker.Companion.getDefault(), javaTypeEnhancementState, new
RuntimeModuleDataKt$makeLazyJavaPackageFragmentFromClassLoaderProvider$javaResolverComp
onents$1(), null, 8388608, null);]
[line 98:          return new LazyJavaPackageFragmentProvider(javaResolverComponents);]
```

There is **'ClassLoader'** found in file 'kotlin/reflect/jvm/internal/impl/descriptors/runtime/structure/ReflectClassUtilKt.java':

```
[line 51: ]
[line 52:      public static final ClassLoader getSafeClassLoader(Class<?> cls) {]
[line 53:          Intrinsics.checkNotNullParameter(cls, "<this>");]
[line 54:          ClassLoader classLoader = cls.getClassLoader();]
[line 55:          if (ClassLoader != null) {]
[line 56:              return ClassLoader;]
[line 57:          }]
[line 58:          classLoader = ClassLoader.getSystemClassLoader();]
[line 59:          Intrinsics.checkNotNullExpressionValue(classLoader,
"getSystemClassLoader()");]
[line 60:          return ClassLoader;]
[line 61:      }]
```

There is **'ClassLoader'** found in file
'kotlin/reflect/jvm/internal/impl/descriptors/runtime/structure/Java8ParameterNamesLoader.java':

```
[line 41:          try {]
[line 42:              return new Cache(cls.getMethod("getParameters", new Class[0]),
ReflectClassUtilKt.getSafeClassLoader(cls).loadClass("java.lang.reflect.Parameter").get
Method("getName", new Class[0]));]
[line 43:          } catch (NoSuchMethodException unused) {]
```

There is **'ClassLoader'** found in file 'kotlin/internal/PlatformImplementationsKt.java':

```
[line 19:         r1 = "ClassCastException(\"Inst…baseTypeCL\").initCause(e)";]
[line 20:         r2 = ", base type ClassLoader: ";]
[line 21:         r3 = "Instance ClassLoader: ";]
[line 22:         r4 = "null cannot be cast to non-null type
kotlin.internal.PlatformImplementations";]
```

```
[line 43:         r6 = r6.getClass();    Catch:{ ClassNotFoundException -> 0x0060 }]
[line 44:         r6 = r6.getClassLoader();      Catch:{ ClassNotFoundException ->
0x0060 }]
[line 45:         r8 = kotlin.internal.PlatformImplementations.class;]
[line 46:         r8 = r8.getClassLoader();      Catch:{ ClassNotFoundException ->
0x0060 }]
[line 47:         r9 = new java.lang.ClassCastException;        Catch:{
ClassNotFoundException -> 0x0060 }]
```

```
[line 77:         r6 = r6.getClass();    Catch:{ ClassNotFoundException -> 0x00ad }]
[line 78:         r6 = r6.getClassLoader();      Catch:{ ClassNotFoundException ->
0x00ad }]
[line 79:         r8 = kotlin.internal.PlatformImplementations.class;]
[line 80:         r8 = r8.getClassLoader();      Catch:{ ClassNotFoundException ->
0x00ad }]
[line 81:         r9 = new java.lang.ClassCastException;        Catch:{
ClassNotFoundException -> 0x00ad }]
```

```
[line 115:         r0 = r0.getClass();    Catch:{ ClassNotFoundException -> 0x0100 }]
[line 116:         r0 = r0.getClassLoader();      Catch:{ ClassNotFoundException ->
0x0100 }]
[line 117:         r7 = kotlin.internal.PlatformImplementations.class;]
[line 118:         r7 = r7.getClassLoader();      Catch:{ ClassNotFoundException ->
0x0100 }]
[line 119:         r8 = new java.lang.ClassCastException;        Catch:{
ClassNotFoundException -> 0x0100 }]
```

```
[line 150:          r0 = r0.getClass();   Catch:{ ClassNotFoundException -> 0x014d }]
[line 151:          r0 = r0.getClassLoader();     Catch:{ ClassNotFoundException ->
0x014d }]
[line 152:          r5 = kotlin.internal.PlatformImplementations.class;]
[line 153:          r5 = r5.getClassLoader();     Catch:{ ClassNotFoundException ->
0x014d }]
[line 154:          r6 = new java.lang.ClassCastException;         Catch:{
ClassNotFoundException -> 0x014d }]
```

```
[line 182:          } catch (ClassCastException e) {]
[line 183:              ClassLoader classLoader = obj.getClass().getClassLoader();]
[line 184:              Intrinsics.reifiedOperationMarker(4, str);]
[line 185:              ClassLoader classLoader2 = Object.class.getClassLoader();]
[line 186:              StringBuilder stringBuilder = new StringBuilder();]
[line 187:              stringBuilder.append("Instance ClassLoader: ");]
[line 188:              stringBuilder.append(ClassLoader);]
[line 189:              stringBuilder.append(", base type ClassLoader: ");]
[line 190:              stringBuilder.append(ClassLoader2);]
[line 191:              Throwable initCause = new
ClassCastException(stringBuilder.toString()).initCause(e);]
```

There is **'ClassLoader'** found in file 'kotlin/concurrent/ThreadsKt.java':

```
[line 7: ]
[line 8: @Metadata(bv = {1, 0, 3}, d1 =
{"\u0000:\n\u0002\u0010\u000b\n\u0002\b\u0002\n\u0002\u0018\u0002\n\u0000\n\u0002\u0010
\u000e\n\u0000\n\u0002\u0010\b\n\u0000\n\u0002\u0018\u0002\n\u0002\u0010\u0002\n\u0000\
n\u0002\u0018\u0002\n\u0002\b\u0002\n\u0002\u0010\u0000\n\u0000\n\u0002\u0018\u0002\n\u
0002\b\u0004\u001aQ\u0010\r\u001a\u00020\f2\b\b\u0002\u0010\u0001\u001a\u00020\u00002\b
\b\u0002\u0010\u0002\u001a\u00020\u00002\n\b\u0002\u0010\u0004\u001a\u0004\u0018\u00010
\u00032\n\b\u0002\u0010\u0006\u001a\u0004\u0018\u00010\u00052\b\b\u0002\u0010\b\u001a\u
00020\u00072\f\u0010\u000b\u001a\b\u0012\u0004\u0012\u00020\n0\t¢
\u0006\u0004\b\r\u0010\u000e\u001a5\u0010\u0013\u001a\u00028\u0000\"\b\b\u0000\u0010\u0
010*\u00020\u000f*\b\u0012\u0004\u0012\u00028\u00000\u00112\f\u0010\u0012\u001a\b\u0012
\u0004\u0012\u00028\u00000\tH\u0000¢\bø\u0001\u0000¢
\u0006\u0004\b\u0013\u0010\u0014\u0002\u0007\n\u0005\b20\u0001¨\u0006\u0015"}, d2 =
{"", "start", "isDaemon", "Ljava/lang/ClassLoader;", "contextClassLoader", "", "name",
"", "priority", "Lkotlin/Function0;", "", "block", "Ljava/lang/Thread;", "thread", "
(ZZLjava/lang/ClassLoader;Ljava/lang/String;ILkotlin/jvm/functions/Function0;)Ljava/lan
g/Thread;", "", "T", "Ljava/lang/ThreadLocal;", "default", "getOrSet", "
(Ljava/lang/ThreadLocal;Lkotlin/jvm/functions/Function0;)Ljava/lang/Object;", "kotlin-
stdlib"}, k = 2, mv = {1, 5, 1})]
[line 9: /* compiled from: Thread.kt */]
[line 10: public final class ThreadsKt {]
[line 11:     public static /* synthetic */ Thread thread$default(boolean z, boolean
z2, ClassLoader ClassLoader, String str, int i, Function0 function0, int i2, Object
obj) {]
[line 12:         if ((i2 & 1) != 0) {]
```

```
[line 20:          if ((i2 & 4) != 0) {]
[line 21:              classLoader = (ClassLoader) null;]
[line 22:          }]
[line 23:          ClassLoader classLoader2 = ClassLoader;]
[line 24:          if ((i2 & 8) != 0) {]
```

```
[line 30:          }]
[line 31:          return thread(z3, z4, ClassLoader2, str2, i, function0);]
[line 32:      }]
[line 33: ]
[line 34:      public static final Thread thread(boolean z, boolean z2, ClassLoader
ClassLoader, String str, int i, Function0<Unit> function0) {]
[line 35:          Intrinsics.checkNotNullParameter(function0, "block");]
```

```
[line 45:          }]
[line 46:          if (ClassLoader != null) {]
[line 47:              threadsKt$thread$thread$1.setContextClassLoader(ClassLoader);]
[line 48:          }]
```

There is **'ClassLoader'** found in file 'kotlin/coroutines/jvm/internal/ModuleNameRetriever.java':

```
[line 63:          try {]
[line 64:              Cache cache = new
Cache(Class.class.getDeclaredMethod("getModule", new Class[0]),
baseContinuationImpl.getClass().getClassLoader().loadClass("java.lang.Module").getDecla
redMethod("getDescriptor", new Class[0]),
baseContinuationImpl.getClass().getClassLoader().loadClass("java.lang.module.ModuleDesc
riptor").getDeclaredMethod("name", new Class[0]));]
[line 65:          cache = cache;]
```

There is **'ClassLoader'** found in file 'retrofit2/Retrofit.java':

```
[line 179:          validateServiceInterface(cls);]
[line 180:          return Proxy.newProxyInstance(cls.getClassLoader(), new Class[]
{cls}, new InvocationHandler() {]
[line 181:              private final Object[] emptyArgs = new Object[0];]
```

There is **'ClassLoader'** found in file 'ehn/techiop/hcert/kotlin/chain/impl/JvmSchemaLoader.java':

```
[line 9: ]
[line 10: @Metadata(bv = {1, 0, 3}, d1 =
{"\u0000$\n\u0002\u0018\u0002\n\u0002\u0018\u0002\n\u0002\u0018\u0002\n\u0002\u0018\u00
02\n\u0002\b\u0003\n\u0002\u0010\u000e\n\u0002\b\u0005\n\u0002\u0018\u0002\n\u0002\b\f\
u0018\u00002\b\u0012\u0004\u0012\u00020\u00020\u0001B\u0007¢
\u0006\u0004\b\u0017\u0010\u0018J\u0017\u0010\u0005\u001a\u00020\u00022\u0006\u0010\u00
04\u001a\u00020\u0003H\u0002¢
\u0006\u0004\b\u0005\u0010\u0006J\u0017\u0010\t\u001a\u00020\u00032\u0006\u0010\b\u001a
\u00020\u0007H\u0002¢
\u0006\u0004\b\t\u0010\nJ\u000f\u0010\u000b\u001a\u00020\u0003H\u0002¢
\u0006\u0004\b\u000b\u0010\fJ\u0017\u0010\u000f\u001a\n
\u000e*\u0004\u0018\u00010\r0\rH\u0002¢
\u0006\u0004\b\u000f\u0010\u0010J\u0017\u0010\u0013\u001a\u00020\u00022\u0006\u0010\b\u
001a\u00020\u0007H\u0010¢
\u0006\u0004\b\u0011\u0010\u0012J\u000f\u0010\u0016\u001a\u00020\u0002H\u0010¢
\u0006\u0004\b\u0014\u0010\u0015¨\u0006\u0019"}, d2 =
{"Lehn/techiop/hcert/kotlin/chain/impl/JvmSchemaLoader;",
"Lehn/techiop/hcert/kotlin/chain/impl/SchemaLoader;",
"Lnet/pwall/json/schema/JSONSchema;", "Ljava/io/InputStream;", "resource", "parse", "
(Ljava/io/InputStream;)Lnet/pwall/json/schema/JSONSchema;", "", "version",
"getSchemaResource", "(Ljava/lang/String;)Ljava/io/InputStream;", "getFallbackSchema",
"()Ljava/io/InputStream;", "Ljava/lang/ClassLoader;", "kotlin.jvm.PlatformType",
"classLoader", "()Ljava/lang/ClassLoader;", "loadSchema$hcert_kotlin", "
(Ljava/lang/String;)Lnet/pwall/json/schema/JSONSchema;", "loadSchema",
"loadFallbackSchema$hcert_kotlin", "()Lnet/pwall/json/schema/JSONSchema;",
"loadFallbackSchema", "<init>", "()V", "hcert-kotlin"}, k = 1, mv = {1, 5, 1})]
[line 11: /* compiled from: SchemaValidationAdapter.kt */]
```

```
[line 74:      private final InputStream getSchemaResource(String str) {]
[line 75:          ClassLoader classLoader = ClassLoader();]
[line 76:          StringBuilder stringBuilder = new StringBuilder();]
```

```
[line 79:          stringBuilder.append("/DCC.combined-schema.json");]
[line 80:          InputStream resourceAsStream =
ClassLoader.getResourceAsStream(stringBuilder.toString());]
[line 81:          if (resourceAsStream != null) {]
```

```
[line 87:      private final InputStream getFallbackSchema() {]
[line 88:          InputStream resourceAsStream =
ClassLoader().getResourceAsStream("json/schema/fallback/DCC.combined-schema.json");]
[line 89:          if (resourceAsStream != null) {]
```

```
[line 94: ]
[line 95:      private final ClassLoader ClassLoader() {]
[line 96:          return SchemaValidationAdapter.class.getClassLoader();]
[line 97:      }]
```

There is **'ClassLoader'** found in file 'com/squareup/moshi/Types.java':

```
[line 253:          } else if (cls.getDeclaredMethods().length == 0) {]
[line 254:              return (Annotation) Proxy.newProxyInstance(cls.getClassLoader(),
new Class[]{cls}, new InvocationHandler() {]
[line 255:              public Object invoke(Object obj, Method method, Object[]
objArr) throws Throwable {]
```

There is **'ClassLoader'** found in file 'com/squareup/moshi/internal/Util.java':

```
[line 600:          r0 = com.squareup.moshi.Types.generatedJsonAdapterName(r0);]
[line 601:          r8 = r8.getClassLoader();    Catch:{ ClassNotFoundException ->
0x00fb, NoSuchMethodException -> 0x00b0, IllegalAccessException -> 0x0098,
InstantiationException -> 0x0080, InvocationTargetException -> 0x007a }]
[line 602:          r2 = 1;]
```

There is **'ClassLoader'** found in file 'com/beust/jcommander/defaultprovider/PropertyFileDefaultProvider.java':

```
[line 24:          this.properties = new Properties();]
[line 25:          URL systemResource = ClassLoader.getSystemResource(str);]
[line 26:          if (systemResource != null) {]
```

There is **'ClassLoader'** found in file 'com/fasterxml/jackson/databind/ObjectMapper.java':

```
[line 599: ]
[line 600:    public static List<Module> findModules(ClassLoader ClassLoader) {]
[line 601:        ArrayList arrayList = new ArrayList();]
[line 602:        Iterator it = secureGetServiceLoader(Module.class,
ClassLoader).iterator();]
[line 603:        while (it.hasNext()) {]
```

```
[line 608: ]
[line 609:    private static <T> ServiceLoader<T> secureGetServiceLoader(final
Class<T> cls, final ClassLoader ClassLoader) {]
[line 610:        if (System.getSecurityManager() != null) {]
```

```
[line 612:              public ServiceLoader<T> run() {]
[line 613:                  ClassLoader classLoader = ClassLoader;]
[line 614:                  return classLoader == null ? ServiceLoader.load(cls) :
ServiceLoader.load(cls, ClassLoader);]
[line 615:              }]
```

```
[line 617:        }]
[line 618:        return classLoader == null ? ServiceLoader.load(cls) :
ServiceLoader.load(cls, ClassLoader);]
[line 619:    }]
```

There is **'ClassLoader'** found in file 'com/fasterxml/jackson/databind/util/ClassUtil.java':

```
[line 822:              NoClassDefFoundError e2 = e;]
[line 823:              ClassLoader contextClassLoader =
Thread.currentThread().getContextClassLoader();]
[line 824:              if (contextClassLoader == null) {]
[line 825:                  return _failGetClassMethods(cls2, e2);]
```

```
[line 827:              try {]
[line 828:                  e2 = contextClassLoader.loadClass(cls2.getName());]
[line 829:                  cls2 = e2.getDeclaredMethods();]
```

There is **'ClassLoader'** found in file 'com/fasterxml/jackson/databind/cfg/MapperBuilder.java':

```
[line 231: ]
[line 232:     public static List<Module> findModules(ClassLoader ClassLoader) {]
[line 233:         ArrayList arrayList = new ArrayList();]
[line 234:         Iterator it = secureGetServiceLoader(Module.class,
ClassLoader).iterator();]
[line 235:         while (it.hasNext()) {]
```

```
[line 240: ]
[line 241:     private static <T> ServiceLoader<T> secureGetServiceLoader(final
Class<T> cls, final ClassLoader ClassLoader) {]
[line 242:         if (System.getSecurityManager() != null) {]
```

```
[line 244:                 public ServiceLoader<T> run() {]
[line 245:                     ClassLoader classLoader = ClassLoader;]
[line 246:                     return classLoader == null ? ServiceLoader.load(cls) :
ServiceLoader.load(cls, ClassLoader);]
[line 247:                 }]
```

```
[line 249:         }]
[line 250:         return classLoader == null ? ServiceLoader.load(cls) :
ServiceLoader.load(cls, ClassLoader);]
[line 251:     }]
```

There is **'ClassLoader'** found in file 'com/fasterxml/jackson/databind/type/TypeFactory.java':

```
[line 53:     private static final long serialVersionUID = 1;]
[line 54:     protected final ClassLoader _ClassLoader;]
[line 55:     protected final TypeModifier[] _modifiers;]
```

```
[line 105:         this._modifiers = null;]
[line 106:         this._ClassLoader = null;]
[line 107:     }]
```

```
[line 109:      @Deprecated]
[line 110:      protected TypeFactory(LRUMap<Object, JavaType> lRUMap, TypeParser
typeParser, TypeModifier[] typeModifierArr, ClassLoader ClassLoader) {]
[line 111:         this((LookupCache) lRUMap, typeParser, typeModifierArr,
ClassLoader);]
[line 112:      }]
[line 113: ]
[line 114:      protected TypeFactory(LookupCache<Object, JavaType> lookupCache,
TypeParser typeParser, TypeModifier[] typeModifierArr, ClassLoader ClassLoader) {]
[line 115:         LookupCache lookupCache2;]
```

```
[line 121:         this._modifiers = typeModifierArr;]
[line 122:         this._classLoader = ClassLoader;]
[line 123:      }]
```

```
[line 138:         }]
[line 139:      return new TypeFactory(lookupCache, this._parser, typeModifierArr,
this._ClassLoader);]
[line 140:      }]
[line 141: ]
[line 142:      public TypeFactory withClassLoader(ClassLoader ClassLoader) {]
[line 143:         return new TypeFactory(this._typeCache, this._parser,
this._modifiers, ClassLoader);]
[line 144:      }]
```

```
[line 147:      public TypeFactory withCache(LRUMap<Object, JavaType> lRUMap) {]
[line 148:         return new TypeFactory((LRUMap) lRUMap, this._parser,
this._modifiers, this._ClassLoader);]
[line 149:      }]
```

```
[line 151:      public TypeFactory withCache(LookupCache<Object, JavaType> lookupCache)
{]
[line 152:         return new TypeFactory((LookupCache) lookupCache, this._parser,
this._modifiers, this._ClassLoader);]
[line 153:      }]
```

```
[line 162: ]
[line 163:      public ClassLoader getClassLoader() {]
[line 164:         return this._ClassLoader;]
[line 165:      }]
```

```
[line 185:        Throwable th = null;]
[line 186:        ClassLoader classLoader = getClassLoader();]
[line 187:        if (ClassLoader == null) {]
[line 188:           classLoader = Thread.currentThread().getContextClassLoader();]
[line 189:        }]
[line 190:        if (ClassLoader != null) {]
[line 191:           try {]
[line 192:              str = classForName(str, true, ClassLoader);]
[line 193:              return str;]
```

```
[line 209:     /* Access modifiers changed, original: protected */]
[line 210:     public Class<?> classForName(String str, boolean z, ClassLoader
ClassLoader) throws ClassNotFoundException {]
[line 211:        return Class.forName(str, true, ClassLoader);]
[line 212:     }]
```

There is **'ClassLoader'** found in file 'com/fasterxml/jackson/databind/jsontype/impl/SubTypeValidator.java':

```
[line 35:        hashSet.add("org.apache.tomcat.dbcp.dbcp2.BasicDataSource");]
[line 36:        hashSet.add("com.sun.org.apache.bcel.internal.util.ClassLoader");]
[line 37:        hashSet.add("org.hibernate.jmx.StatisticsService");]
```

There is **'ClassLoader'** found in file 'com/fasterxml/jackson/core/util/VersionUtil.java':

```
[line 33:        r1 = 1;]
[line 34:        r3 = r3.getClassLoader();      Catch:{ Exception -> 0x004d }]
[line 35:        r3 = java.lang.Class.forName(r0, r1, r3);      Catch:{ Exception ->
0x004d }]
```

```
[line 71:     @Deprecated]
[line 72:     public static Version mavenVersionFor(ClassLoader ClassLoader, String
str, String str2) {]
[line 73:        StringBuilder stringBuilder = new StringBuilder();]
```

```
[line 80:        Version stringBuilder2 = stringBuilder.toString();]
[line 81:        InputStream resourceAsStream =
ClassLoader.getResourceAsStream(stringBuilder2);]
[line 82:        if (resourceAsStream != null) {]
```

Reference:

- https://developer.android.com/reference/java/lang/ClassLoader.html
- https://developer.android.com/reference/dalvik/system/DexClassLoader.html
- https://developer.android.com/reference/java/security/SecureClassLoader.html
- https://developer.android.com/reference/java/net/URLClassLoader.html

OBJECT DESERIALIZATION FOUND [M7] [CWE-502] [SAST]   WARNING

Description:

Object deserialization performed on an untrusted resource (e.g. user-supplied input or external storage), can be dangerous if the data for deserialization is tampered by an attacker.

Example of insecure code:

```
bundle.putSerializable("exampleClass", exampleOfSerializabledClass);
exampleOfSerializabledClass = bundle.getSerializable("exampleClass");
```

Example of secure code:

```
// Use only serialization when you have the control over data
```

Details:

There is **'implements Serializable'** found in file 'net/i2p/crypto/eddsa/math/Curve.java':

```
[line 5: ]
[line 6: public class Curve implements Serializable {]
[line 7:    private static final long serialVersionUID = 4578920872509827L;]
```

There is **'implements Serializable'** found in file 'net/i2p/crypto/eddsa/math/Field.java':

```
[line 4: ]
[line 5: public class Field implements Serializable {]
[line 6:    private static final long serialVersionUID = 8746587465875676L;]
```

There is **'implements Serializable'** found in file 'net/i2p/crypto/eddsa/math/GroupElement.java':

```
[line 7: ]
[line 8: public class GroupElement implements Serializable {]
[line 9:    private static final long serialVersionUID = 2395879087349587L;]
```

There is **'implements Serializable'** found in file 'net/i2p/crypto/eddsa/math/FieldElement.java':

```
[line 4: ]
[line 5: public abstract class FieldElement implements Serializable {]
[line 6:    private static final long serialVersionUID = 1239527465875676L;]
```

There is **'implements Serializable'** found in file 'net/i2p/crypto/eddsa/math/bigint/BigIntegerLittleEndianEncoding.java':

```
[line 8: ]
[line 9: public class BigIntegerLittleEndianEncoding extends Encoding implements Serializable {]
[line 10:     private static final long serialVersionUID = 3984579843759837L;]
```

There is **'implements Serializable'** found in file 'net/i2p/crypto/eddsa/math/bigint/BigIntegerFieldElement.java':

```
[line 7: ]
[line 8: public class BigIntegerFieldElement extends FieldElement implements Serializable {]
[line 9:    private static final long serialVersionUID = 4890398908392808L;]
```

There is **'implements Serializable'** found in file 'net/pwall/util/Ref.java':

```
[line 4: ]
[line 5: public class Ref<T> implements Serializable {]
[line 6:     private static final long serialVersionUID = 6434890119379911833L;]
```

There is **'implements Serializable'** found in file 'net/pwall/util/Pair.java':

```
[line 5: ]
[line 6: public class Pair<F, S> implements Serializable {]
[line 7:     private static final long serialVersionUID = 3881544420119098149L;]
```

There is **'implements Serializable'** found in file 'net/pwall/yaml/YAMLDocument.java':

```
[line 4: ]
[line 5: public class YAMLDocument implements Serializable {]
[line 6:     public static final int defaultMajorVersion = 1;]
```

There is **'implements Serializable'** found in file 'j$/util/concurrent/ConcurrentHashMap.java':

```
[line 79: ]
[line 80:     static class Segment<K, V> extends ReentrantLock implements Serializable
{]
[line 81:         Segment(float f) {]
```

There is **'implements Serializable'** found in file 'j$/time/ZoneRegion.java':

```
[line 10: ]
[line 11: final class ZoneRegion extends ZoneId implements Serializable {]
[line 12:     private final String id;]
```

There is **'implements Serializable'** found in file 'j$/time/ZoneId.java':

```
[line 17: ]
[line 18: public abstract class ZoneId implements Serializable {]
[line 19:     public static final Map SHORT_IDS;]
```

There is **'implements Serializable'** found in file 'j$/time/Clock.java':

```
[line 7: ]
[line 8:     static final class SystemClock extends Clock implements Serializable {]
[line 9:         private final ZoneId zone;]
```

There is **'implements Serializable'** found in file 'j$/time/temporal/WeekFields.java':

```
[line 17: ]
[line 18: public final class WeekFields implements Serializable {]
[line 19:     private static final ConcurrentMap CACHE = new ConcurrentHashMap(4,
0.75f, 2);]
```

There is **'implements Serializable'** found in file 'j$/time/temporal/ValueRange.java':

```
[line 6: ]
[line 7: public final class ValueRange implements Serializable {]
[line 8:     private final long maxLargest;]
```

There is **'implements Serializable'** found in file 'j$/time/chrono/IsoChronology.java':

```
[line 19: ]
[line 20: public final class IsoChronology extends AbstractChronology implements
Serializable {]
[line 21:     public static final IsoChronology INSTANCE = new IsoChronology();]
```

There is **'implements Serializable'** found in file 'j$/time/zone/ZoneRules.java':

```
[line 19: ]
[line 20: public final class ZoneRules implements Serializable {]
[line 21:     private static final ZoneOffsetTransitionRule[] EMPTY_LASTRULES = new
ZoneOffsetTransitionRule[0];]
```

There is **'implements Serializable'** found in file 'j$/time/zone/ZoneOffsetTransitionRule.java':

```
[line 4: ]
[line 5: public final class ZoneOffsetTransitionRule implements Serializable {]
[line 6: }]
```

There is **'implements Serializable'** found in file 'kotlin/Pair.java':

```
[line 6: /* compiled from: Tuples.kt */]
[line 7: public final class Pair<A, B> implements Serializable {]
[line 8:     private final A first;]
```

There is **'implements Serializable'** found in file 'kotlin/Triple.java':

```
[line 6: /* compiled from: Tuples.kt */]
[line 7: public final class Triple<A, B, C> implements Serializable {]
[line 8:     private final A first;]
```

There is **'implements Serializable'** found in file 'kotlin/Result.java':

```
[line 10: /* compiled from: Result.kt */]
[line 11: public final class Result<T> implements Serializable {]
[line 12:     public static final Companion Companion = new Companion();]
```

```
[line 35:     /* compiled from: Result.kt */]
[line 36:     public static final class Failure implements Serializable {]
[line 37:         public final Throwable exception;]
```

There is **'implements Serializable'** found in file 'kotlin/reflect/jvm/internal/impl/incremental/components/Position.java':

```
[line 6: /* compiled from: LookupLocation.kt */]
[line 7: public final class Position implements Serializable {]
[line 8:     public static final Companion Companion = new Companion();]
```

There is **'implements Serializable'** found in file 'kotlin/reflect/jvm/internal/impl/protobuf/GeneratedMessageLite.java':

```
[line 17: ]
[line 18: public abstract class GeneratedMessageLite extends AbstractMessageLite implements Serializable {]
[line 19:]
```

There is **'implements Serializable'** found in file 'kotlin/reflect/jvm/internal/pcollections/MapEntry.java':

```
[line 4: ]
[line 5: final class MapEntry<K, V> implements Serializable {]
[line 6:     public final K key;]
```

There is **'implements Serializable'** found in file 'kotlin/jvm/internal/Ref.java':

```
[line 6: ]
[line 7:     public static final class BooleanRef implements Serializable {]
[line 8:         public boolean element;]
```

```
[line 14: ]
[line 15:     public static final class ByteRef implements Serializable {]
[line 16:         public byte element;]
```

```
[line 22: ]
[line 23:     public static final class CharRef implements Serializable {]
[line 24:         public char element;]
```

```
[line 30: ]
[line 31:     public static final class DoubleRef implements Serializable {]
[line 32:         public double element;]
```

```
[line 38: ]
[line 39:     public static final class FloatRef implements Serializable {]
[line 40:         public float element;]
```

```
[line 46: ]
[line 47:     public static final class IntRef implements Serializable {]
[line 48:         public int element;]
```

```
[line 54: ]
[line 55:     public static final class LongRef implements Serializable {]
[line 56:         public long element;]
```

```
[line 62: ]
[line 63:    public static final class ObjectRef<T> implements Serializable {]
[line 64:        public T element;]
```

```
[line 70: ]
[line 71:    public static final class ShortRef implements Serializable {]
[line 72:        public short element;]
```

There is **'implements Serializable'** found in file 'kotlin/jvm/internal/CallableReference.java':

```
[line 24: ]
[line 25:    private static class NoReceiver implements Serializable {]
[line 26:        private static final NoReceiver INSTANCE = new NoReceiver();]
```

There is **'implements Serializable'** found in file 'kotlin/coroutines/CombinedContext.java':

```
[line 22:    /* compiled from: CoroutineContextImpl.kt */]
[line 23:    private static final class Serialized implements Serializable {]
[line 24:        public static final Companion Companion = new Companion();]
```

There is **'implements Serializable'** found in file 'kotlin/text/Regex.java':

```
[line 20: /* compiled from: Regex.kt */]
[line 21: public final class Regex implements Serializable {]
[line 22:    public static final Companion Companion = new Companion();]
```

```
[line 61:    /* compiled from: Regex.kt */]
[line 62:    private static final class Serialized implements Serializable {]
[line 63:        public static final Companion Companion = new Companion();]
```

There is **'implements Serializable'** found in file 'kotlin/random/XorWowRandom.java':

```
[line 8: /* compiled from: XorWowRandom.kt */]
[line 9: public final class XorWowRandom extends Random implements Serializable {]
[line 10:    private static final Companion Companion = new Companion();]
```

There is **'implements Serializable'** found in file 'kotlin/random/Random.java':

```
[line 17:    /* compiled from: Random.kt */]
[line 18:    public static final class Default extends Random implements Serializable
{]
[line 19:]
```

```
[line 21:        /* compiled from: Random.kt */]
[line 22:        private static final class Serialized implements Serializable {]
[line 23:            public static final Serialized INSTANCE = new Serialized();]
```

There is **'implements Serializable'** found in file 'kotlin/random/PlatformRandom.java':

```
[line 10: /* compiled from: PlatformRandom.kt */]
[line 11: final class PlatformRandom extends AbstractPlatformRandom implements
Serializable {]
[line 12:     private static final Companion Companion = new Companion();]
```

There is **'implements Serializable'** found in file 'at/gv/brz/common/html/BuildInfo.java':

```
[line 8: /* compiled from: BuildInfo.kt */]
[line 9: public final class BuildInfo implements Serializable {]
[line 10:     private final String agbUrl;]
```

There is **'implements Serializable'** found in file 'at/gv/brz/eval/models/DccHolder.java':

```
[line 12: /* compiled from: DccHolder.kt */]
[line 13: public final class DccHolder implements Serializable {]
[line 14:     private CertType certType;]
```

There is **'implements Serializable'** found in file 'at/gv/brz/eval/euhealthcert/RecoveryEntry.java':

```
[line 12: /* compiled from: RecoveryEntry.kt */]
[line 13: public final class RecoveryEntry implements Serializable {]
[line 14:     private final String certificateIdentifier;]
```

There is **'implements Serializable'** found in file 'at/gv/brz/eval/euhealthcert/Eudgc.java':

```
[line 13: /* compiled from: Eudgc.kt */]
[line 14: public final class Eudgc implements Serializable {]
[line 15:     private final String dateOfBirth;]
```

There is **'implements Serializable'** found in file 'at/gv/brz/eval/euhealthcert/PersonName.java':

```
[line 12: /* compiled from: PersonName.kt */]
[line 13: public final class PersonName implements Serializable {]
[line 14:     private final String familyName;]
```

There is **'implements Serializable'** found in file 'at/gv/brz/eval/euhealthcert/VaccinationEntry.java':

```
[line 12: /* compiled from: VaccinationEntry.kt */]
[line 13: public final class VaccinationEntry implements Serializable {]
[line 14:     private final String certificateIdentifier;]
```

There is **'implements Serializable'** found in file 'at/gv/brz/eval/euhealthcert/TestEntry.java':

```
[line 14: /* compiled from: TestEntry.kt */]
[line 15: public final class TestEntry implements Serializable {]
[line 16:     private final String certificateIdentifier;]
```

There is **'implements Serializable'** found in file 'com/squareup/moshi/LinkedHashTreeMap.java':

```
[line 18: ]
[line 19: final class LinkedHashTreeMap<K, V> extends AbstractMap<K, V> implements
Serializable, Map {]
[line 20:     static final /* synthetic */ boolean $assertionsDisabled = false;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/DeserializationConfig.java':

```
[line 30: ]
[line 31: public final class DeserializationConfig extends
MapperConfigBase<DeserializationFeature, DeserializationConfig> implements Serializable
{]
[line 32:     private static final int DESER_FEATURE_DEFAULTS =
MapperConfig.collectFeatureDefaults(DeserializationFeature.class);]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/PropertyNamingStrategies.java':

```
[line 9: ]
[line 10: public abstract class PropertyNamingStrategies implements Serializable {]
[line 11:     public static final PropertyNamingStrategy KEBAB_CASE = new
KebabCaseStrategy();]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/JavaType.java':

```
[line 11: ]
[line 12: public abstract class JavaType extends ResolvedType implements Serializable,
Type {]
[line 13:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/DeserializationContext.java':

```
[line 55: ]
[line 56: public abstract class DeserializationContext extends DatabindContext
implements Serializable {]
[line 57:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/PropertyName.java':

```
[line 9: ]
[line 10: public class PropertyName implements Serializable {]
[line 11:     public static final PropertyName NO_NAME;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/JsonMappingException.java':

```
[line 25: ]
[line 26:     public static class Reference implements Serializable {]
[line 27:         private static final long serialVersionUID = 2;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/ObjectMapper.java':

```
[line 208: ]
[line 209:      public static class DefaultTypeResolverBuilder extends
StdTypeResolverBuilder implements Serializable {]
[line 210:          private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/PropertyMetadata.java':

```
[line 6: ]
[line 7: public class PropertyMetadata implements Serializable {]
[line 8:      public static final PropertyMetadata STD_OPTIONAL = new
PropertyMetadata(Boolean.FALSE, null, null, null, null, null, null);]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/SerializationConfig.java':

```
[line 24: ]
[line 25: public final class SerializationConfig extends
MapperConfigBase<SerializationFeature, SerializationConfig> implements Serializable {]
[line 26:      protected static final PrettyPrinter DEFAULT_PRETTY_PRINTER = new
DefaultPrettyPrinter();]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/InjectableValues.java':

```
[line 9: ]
[line 10:      public static class Std extends InjectableValues implements Serializable
{]
[line 11:          private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/PropertyNamingStrategy.java':

```
[line 9: ]
[line 10: public class PropertyNamingStrategy implements Serializable {]
[line 11:      @Deprecated]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/ObjectWriter.java':

```
[line 57: ]
[line 58:      public static final class GeneratorSettings implements Serializable {]
[line 59:          public static final GeneratorSettings empty = new
GeneratorSettings(null, null, null, null);]
```

```
[line 145: ]
[line 146:      public static final class Prefetch implements Serializable {]
[line 147:          public static final Prefetch empty = new Prefetch(null, null,
null);]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/util/CompactStringObjectMap.java':

```
[line 9: ]
[line 10: public final class CompactStringObjectMap implements Serializable {]
[line 11:     private static final CompactStringObjectMap EMPTY = new
CompactStringObjectMap(1, 0, new Object[4]);]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/util/EnumValues.java':

```
[line 14: ]
[line 15: public final class EnumValues implements Serializable {]
[line 16:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/util/ViewMatcher.java':

```
[line 4: ]
[line 5: public class ViewMatcher implements Serializable {]
[line 6:     protected static final ViewMatcher EMPTY = new ViewMatcher();]
```

```
[line 8: ]
[line 9:     private static final class Multi extends ViewMatcher implements
Serializable {]
[line 10:         private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/util/IgnorePropertiesUtil.java':

```
[line 10: ]
[line 11:     public static final class Checker implements Serializable {]
[line 12:         private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/util/RootNameLookup.java':

```
[line 8: ]
[line 9: public class RootNameLookup implements Serializable {]
[line 10:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/util/NameTransformer.java':

```
[line 7: ]
[line 8:     public static class Chained extends NameTransformer implements
Serializable {]
[line 9:         private static final long serialVersionUID = 1;]
```

```
[line 37: ]
[line 38:     protected static final class NopTransformer extends NameTransformer
implements Serializable {]
[line 39:         private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/util/EnumResolver.java':

```
[line 13: ]
[line 14: public class EnumResolver implements Serializable {]
[line 15:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/introspect/AnnotatedMethod.java':

```
[line 9: ]
[line 10: public final class AnnotatedMethod extends AnnotatedWithParams implements Serializable {]
[line 11:     private static final long serialVersionUID = 1;]
```

```
[line 15: ]
[line 16:     private static final class Serialization implements Serializable {]
[line 17:         private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/introspect/AnnotationIntrospectorPair.java':

```
[line 34: ]
[line 35: public class AnnotationIntrospectorPair extends AnnotationIntrospector implements Serializable {]
[line 36:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/introspect/AnnotatedConstructor.java':

```
[line 14: ]
[line 15:     private static final class Serialization implements Serializable {]
[line 16:         private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/introspect/DefaultAccessorNamingStrategy.java':

```
[line 48: ]
[line 49:     public static class Provider extends
com.fasterxml.jackson.databind.introspect.AccessorNamingStrategy.Provider implements Serializable {]
[line 50:         private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/introspect/NopAnnotationIntrospector.java':

```
[line 7: ]
[line 8: public abstract class NopAnnotationIntrospector extends AnnotationIntrospector implements Serializable {]
[line 9:     public static final NopAnnotationIntrospector instance = new
NopAnnotationIntrospector() {]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/introspect/AnnotatedMember.java':

```
[line 8: ]
[line 9: public abstract class AnnotatedMember extends Annotated implements
Serializable {]
[line 10:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/introspect/VirtualAnnotatedMember.java':

```
[line 8: ]
[line 9: public class VirtualAnnotatedMember extends AnnotatedMember implements
Serializable {]
[line 10:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/introspect/AnnotatedField.java':

```
[line 9: ]
[line 10: public final class AnnotatedField extends AnnotatedMember implements
Serializable {]
[line 11:     private static final long serialVersionUID = 1;]
```

```
[line 14: ]
[line 15:     private static final class Serialization implements Serializable {]
[line 16:         private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/introspect/AccessorNamingStrategy.java':

```
[line 8: ]
[line 9:     public static abstract class Provider implements Serializable {]
[line 10:         private static final long serialVersionUID = 1;]
```

```
[line 18: ]
[line 19:     public static class Base extends AccessorNamingStrategy implements
Serializable {]
[line 20:         private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file
'com/fasterxml/jackson/databind/introspect/JacksonAnnotationIntrospector.java':

```
[line 95: ]
[line 96: public class JacksonAnnotationIntrospector extends AnnotationIntrospector
implements Serializable {]
[line 97:     private static final Class<? extends Annotation>[]
ANNOTATIONS_TO_INFER_DESER = new Class[]{JsonDeserialize.class, JsonView.class,
JsonFormat.class, JsonTypeInfo.class, JsonUnwrapped.class, JsonBackReference.class,
JsonManagedReference.class, JsonMerge.class};]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/introspect/BasicClassIntrospector.java':

```
[line 16: ]
[line 17: public class BasicClassIntrospector extends ClassIntrospector implements
Serializable {]
[line 18:     protected static final BasicBeanDescription BOOLEAN_DESC =
BasicBeanDescription.forOtherUse(null, SimpleType.constructUnsafe(Boolean.TYPE),
AnnotatedClassResolver.createPrimordial(Boolean.TYPE));]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/deser/SettableAnyProperty.java':

```
[line 22: ]
[line 23: public class SettableAnyProperty implements Serializable {]
[line 24:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/deser/BeanDeserializer.java':

```
[line 30: ]
[line 31: public class BeanDeserializer extends BeanDeserializerBase implements
Serializable {]
[line 32:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/deser/BasicDeserializerFactory.java':

```
[line 104: ]
[line 105: public abstract class BasicDeserializerFactory extends DeserializerFactory
implements Serializable {]
[line 106:     private static final Class<?> CLASS_CHAR_SEQUENCE = CharSequence.class;]
```

There is **'implements Serializable'** found in file
'com/fasterxml/jackson/databind/deser/DefaultDeserializationContext.java':

```
[line 29: ]
[line 30: public abstract class DefaultDeserializationContext extends
DeserializationContext implements Serializable {]
[line 31:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/deser/BeanDeserializerFactory.java':

```
[line 54: ]
[line 55: public class BeanDeserializerFactory extends BasicDeserializerFactory
implements Serializable {]
[line 56:     private static final Class<?>[] INIT_CAUSE_PARAMS = new Class[]
{Throwable.class};]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/deser/SettableBeanProperty.java':

```
[line 27: ]
[line 28: public abstract class SettableBeanProperty extends ConcreteBeanPropertyBase
implements Serializable {]
[line 29:     protected static final JsonDeserializer<Object>
MISSING_VALUE_DESERIALIZER = new FailingDeserializer("No _valueDeserializer
assigned");]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/deser/DeserializerCache.java':

```
[line 27: ]
[line 28: public final class DeserializerCache implements Serializable {]
[line 29:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/deser/ValueInstantiator.java':

```
[line 24: ]
[line 25:     public static class Base extends ValueInstantiator implements Serializable {]
[line 26:         private static final long serialVersionUID = 1;]
```

```
[line 45: ]
[line 46:     public static class Delegating extends ValueInstantiator implements Serializable {]
[line 47:         private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/deser/impl/JDKValueInstantiators.java':

```
[line 19: ]
[line 20:     private static class ArrayListInstantiator extends Base implements Serializable {]
[line 21:         public static final ArrayListInstantiator INSTANCE = new ArrayListInstantiator();]
```

```
[line 40: ]
[line 41:     private static class ConstantValueInstantiator extends Base implements Serializable {]
[line 42:         private static final long serialVersionUID = 2;]
```

```
[line 62: ]
[line 63:     private static class HashMapInstantiator extends Base implements Serializable {]
[line 64:         public static final HashMapInstantiator INSTANCE = new HashMapInstantiator();]
```

```
[line 83: ]
[line 84:     private static class LinkedHashMapInstantiator extends Base implements Serializable {]
[line 85:         public static final LinkedHashMapInstantiator INSTANCE = new LinkedHashMapInstantiator();]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/deser/impl/ObjectIdReader.java':

```
[line 13: ]
[line 14: public class ObjectIdReader implements Serializable {]
[line 15:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/deser/impl/TypeWrappedDeserializer.java':

```
[line 13: ]
[line 14: public final class TypeWrappedDeserializer extends JsonDeserializer<Object>
implements Serializable {]
[line 15:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/deser/std/StdKeyDeserializer.java':

```
[line 28: @JacksonStdImpl]
[line 29: public class StdKeyDeserializer extends KeyDeserializer implements
Serializable {]
[line 30:     public static final int TYPE_BOOLEAN = 1;]
```

```
[line 51: ]
[line 52:     static final class DelegatingKD extends KeyDeserializer implements
Serializable {]
[line 53:         private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/deser/std/StdDeserializer.java':

```
[line 45: ]
[line 46: public abstract class StdDeserializer<T> extends JsonDeserializer<T>
implements Serializable, Gettable {]
[line 47:     @Deprecated]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/deser/std/StdValueInstantiator.java':

```
[line 18: @JacksonStdImpl]
[line 19: public class StdValueInstantiator extends ValueInstantiator implements
Serializable {]
[line 20:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/module/SimpleSerializers.java':

```
[line 18: ]
[line 19: public class SimpleSerializers extends Base implements Serializable {]
[line 20:     private static final long serialVersionUID = 3;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/module/SimpleDeserializers.java':

```
[line 23: ]
[line 24: public class SimpleDeserializers extends Base implements Serializable {]
[line 25:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/module/SimpleModule.java':

```
[line 21: ]
[line 22: public class SimpleModule extends Module implements Serializable {]
[line 23:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file
'com/fasterxml/jackson/databind/module/SimpleAbstractTypeResolver.java':

```
[line 11: ]
[line 12: public class SimpleAbstractTypeResolver extends AbstractTypeResolver
implements Serializable {]
[line 13:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/module/SimpleValueInstantiators.java':

```
[line 10: ]
[line 11: public class SimpleValueInstantiators extends Base implements Serializable {]
[line 12:     private static final long serialVersionUID = -8929386427526115130L;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/ext/OptionalHandlerFactory.java':

```
[line 19: ]
[line 20: public class OptionalHandlerFactory implements Serializable {]
[line 21:     private static final Class<?> CLASS_DOM_DOCUMENT;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/cfg/DeserializerFactoryConfig.java':

```
[line 12: ]
[line 13: public class DeserializerFactoryConfig implements Serializable {]
[line 14:     protected static final KeyDeserializers[] DEFAULT_KEY_DESERIALIZERS = new
KeyDeserializers[]{new StdKeyDeserializers()};]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/cfg/CoercionConfigs.java':

```
[line 11: ]
[line 12: public class CoercionConfigs implements Serializable {]
[line 13:     private static final int TARGET_TYPE_COUNT =
LogicalType.values().length;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/cfg/ConstructorDetector.java':

```
[line 5: ]
[line 6: public final class ConstructorDetector implements Serializable {]
[line 7:     public static final ConstructorDetector DEFAULT = new
ConstructorDetector(SingleArgConstructor.HEURISTIC);]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/cfg/ConfigOverrides.java':

```
[line 12: ]
[line 13: public class ConfigOverrides implements Serializable {]
[line 14:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/cfg/ContextAttributes.java':

```
[line 9: ]
[line 10:     public static class Impl extends ContextAttributes implements
Serializable {]
[line 11:         protected static final Impl EMPTY = new
Impl(Collections.emptyMap());]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/cfg/BaseSettings.java':

```
[line 19: ]
[line 20: public final class BaseSettings implements Serializable {]
[line 21:    private static final TimeZone DEFAULT_TIMEZONE =
DesugarTimeZone.getTimeZone("UTC");]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/cfg/MapperConfigBase.java':

```
[line 30: ]
[line 31: public abstract class MapperConfigBase<CFG extends ConfigFeature, T extends
MapperConfigBase<CFG, T>> extends MapperConfig<T> implements Serializable {]
[line 32:    private static final int AUTO_DETECT_MASK =
((((MapperFeature.AUTO_DETECT_FIELDS.getMask() |
MapperFeature.AUTO_DETECT_GETTERS.getMask()) |
MapperFeature.AUTO_DETECT_IS_GETTERS.getMask()) |
MapperFeature.AUTO_DETECT_SETTERS.getMask()) |
MapperFeature.AUTO_DETECT_CREATORS.getMask());]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/cfg/CoercionConfig.java':

```
[line 5: ]
[line 6: public class CoercionConfig implements Serializable {]
[line 7:    private static final int INPUT_SHAPE_COUNT =
CoercionInputShape.values().length;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/cfg/MutableCoercionConfig.java':

```
[line 4: ]
[line 5: public class MutableCoercionConfig extends CoercionConfig implements
Serializable {]
[line 6:    private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/cfg/MutableConfigOverride.java':

```
[line 9: ]
[line 10: public class MutableConfigOverride extends ConfigOverride implements
Serializable {]
[line 11:    private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/cfg/SerializerFactoryConfig.java':

```
[line 8: ]
[line 9: public final class SerializerFactoryConfig implements Serializable {]
[line 10:    protected static final BeanSerializerModifier[] NO_MODIFIERS = new
BeanSerializerModifier[0];]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/type/TypeFactory.java':

```
[line 30: ]
[line 31: public class TypeFactory implements Serializable {]
[line 32:    private static final Class<?> CLS_BOOL;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/type/TypeBindings.java':

```
[line 18: ]
[line 19: public class TypeBindings implements Serializable {]
[line 20:     private static final TypeBindings EMPTY;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/type/TypeParser.java':

```
[line 9: ]
[line 10: public class TypeParser implements Serializable {]
[line 11:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/ser/DefaultSerializerProvider.java':

```
[line 32: ]
[line 33: public abstract class DefaultSerializerProvider extends SerializerProvider
implements Serializable {]
[line 34:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/ser/VirtualBeanPropertyWriter.java':

```
[line 17: ]
[line 18: public abstract class VirtualBeanPropertyWriter extends BeanPropertyWriter
implements Serializable {]
[line 19:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/ser/BeanSerializerFactory.java':

```
[line 47: ]
[line 48: public class BeanSerializerFactory extends BasicSerializerFactory implements
Serializable {]
[line 49:     public static final BeanSerializerFactory instance = new
BeanSerializerFactory(null);]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/ser/PropertyWriter.java':

```
[line 14: ]
[line 15: public abstract class PropertyWriter extends ConcreteBeanPropertyBase
implements Serializable {]
[line 16:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/ser/BasicSerializerFactory.java':

```
[line 86: ]
[line 87: public abstract class BasicSerializerFactory extends SerializerFactory
implements Serializable {]
[line 88:     protected static final HashMap<String, JsonSerializer<?>> _concrete;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/ser/BeanPropertyWriter.java':

```
[line 43: @JacksonStdImpl]
[line 44: public class BeanPropertyWriter extends PropertyWriter implements
Serializable {]
[line 45:     public static final Object MARKER_FOR_EMPTY = Include.NON_EMPTY;]
```

There is **'implements Serializable'** found in file
'com/fasterxml/jackson/databind/ser/impl/UnwrappingBeanPropertyWriter.java':

```
[line 19: ]
[line 20: public class UnwrappingBeanPropertyWriter extends BeanPropertyWriter
implements Serializable {]
[line 21:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/ser/impl/SimpleFilterProvider.java':

```
[line 10: ]
[line 11: public class SimpleFilterProvider extends FilterProvider implements
Serializable {]
[line 12:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/ser/impl/UnwrappingBeanSerializer.java':

```
[line 14: ]
[line 15: public class UnwrappingBeanSerializer extends BeanSerializerBase implements
Serializable {]
[line 16:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/ser/impl/SimpleBeanPropertyFilter.java':

```
[line 18: ]
[line 19:     public static class FilterExceptFilter extends SimpleBeanPropertyFilter
implements Serializable {]
[line 20:         private static final long serialVersionUID = 1;]
```

```
[line 37: ]
[line 38:     public static class SerializeExceptFilter extends
SimpleBeanPropertyFilter implements Serializable {]
[line 39:         static final SerializeExceptFilter INCLUDE_ALL = new
SerializeExceptFilter();]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/ser/impl/FilteredBeanPropertyWriter.java':

```
[line 13: ]
[line 14:     private static final class MultiView extends BeanPropertyWriter
implements Serializable {]
[line 15:         private static final long serialVersionUID = 1;]
```

```
[line 71: ]
[line 72:     private static final class SingleView extends BeanPropertyWriter
implements Serializable {]
[line 73:         private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/node/JsonNodeFactory.java':

```
[line 8: ]
[line 9: public class JsonNodeFactory implements Serializable, JsonNodeCreator {]
[line 10:     private static final JsonNodeFactory decimalsAsIs = new
JsonNodeFactory(true);]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/node/NodeSerialization.java':

```
[line 8: ]
[line 9: class NodeSerialization implements Serializable, Externalizable {]
[line 10:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/node/ObjectNode.java':

```
[line 25: ]
[line 26: public class ObjectNode extends ContainerNode<ObjectNode> implements
Serializable {]
[line 27:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/node/BaseJsonNode.java':

```
[line 14: ]
[line 15: public abstract class BaseJsonNode extends JsonNode implements Serializable
{]
[line 16:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/node/ArrayNode.java':

```
[line 20: ]
[line 21: public class ArrayNode extends ContainerNode<ArrayNode> implements
Serializable {]
[line 22:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/jsontype/PolymorphicTypeValidator.java':

```
[line 7: ]
[line 8: public abstract class PolymorphicTypeValidator implements Serializable {]
[line 9:     private static final long serialVersionUID = 1;]
```

```
[line 16: ]
[line 17:     public static abstract class Base extends PolymorphicTypeValidator
implements Serializable {]
[line 18:         private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file
'com/fasterxml/jackson/databind/jsontype/DefaultBaseTypeLimitingValidator.java':

```
[line 10: ]
[line 11: public class DefaultBaseTypeLimitingValidator extends
PolymorphicTypeValidator implements Serializable {]
[line 12:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file
'com/fasterxml/jackson/databind/jsontype/BasicPolymorphicTypeValidator.java':

```
[line 14: ]
[line 15: public class BasicPolymorphicTypeValidator extends Base implements
Serializable {]
[line 16:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/jsontype/NamedType.java':

```
[line 6: ]
[line 7: public final class NamedType implements Serializable {]
[line 8:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file
'com/fasterxml/jackson/databind/jsontype/impl/AsWrapperTypeDeserializer.java':

```
[line 16: ]
[line 17: public class AsWrapperTypeDeserializer extends TypeDeserializerBase
implements Serializable {]
[line 18:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/jsontype/impl/StdSubtypeResolver.java':

```
[line 23: ]
[line 24: public class StdSubtypeResolver extends SubtypeResolver implements
Serializable {]
[line 25:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/databind/jsontype/impl/TypeDeserializerBase.java':

```
[line 19: ]
[line 20: public abstract class TypeDeserializerBase extends TypeDeserializer
implements Serializable {]
[line 21:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file
'com/fasterxml/jackson/databind/jsontype/impl/AsArrayTypeDeserializer.java':

```
[line 16: ]
[line 17: public class AsArrayTypeDeserializer extends TypeDeserializerBase implements
Serializable {]
[line 18:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/core/Base64Variant.java':

```
[line 7: ]
[line 8: public final class Base64Variant implements Serializable {]
[line 9:     public static final int BASE64_VALUE_INVALID = -1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/core/JsonLocation.java':

```
[line 5: ]
[line 6: public class JsonLocation implements Serializable {]
[line 7:     public static final int MAX_CONTENT_SNIPPET = 500;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/core/util/Separators.java':

```
[line 5: ]
[line 6: public class Separators implements Serializable {]
[line 7:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/core/util/RequestPayload.java':

```
[line 5: ]
[line 6: public class RequestPayload implements Serializable {]
[line 7:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/core/io/CharacterEscapes.java':

```
[line 6: ]
[line 7: public abstract class CharacterEscapes implements Serializable {]
[line 8:     public static final int ESCAPE_CUSTOM = -2;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/core/io/SerializedString.java':

```
[line 10: ]
[line 11: public class SerializedString implements SerializableString, Serializable {]
[line 12:     private static final JsonStringEncoder JSON_ENCODER =
JsonStringEncoder.getInstance();]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/core/io/InputDecorator.java':

```
[line 8: ]
[line 9: public abstract class InputDecorator implements Serializable {]
[line 10:     private static final long serialVersionUID = 1;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/core/io/OutputDecorator.java':

```
[line 7: ]
[line 8: public abstract class OutputDecorator implements Serializable {]
[line 9:     public abstract OutputStream decorate(IOContext iOContext, OutputStream
outputStream) throws IOException;]
```

There is **'implements Serializable'** found in file 'com/fasterxml/jackson/annotation/ObjectIdGenerator.java':

```
[line 4: ]
[line 5: public abstract class ObjectIdGenerator<T> implements Serializable {]
[line 6: ]
[line 7:    public static final class IdKey implements Serializable {]
[line 8:        private static final long serialVersionUID = 1;]
```

There is **'getSerializable()'** found in file 'at/gv/brz/wallet/html/HtmlFragment.java':

```
[line 70:              this.baseUrl = string;]
[line 71:              Serializable serializable =
bundle.getSerializable(ARG_BUILD_INFO);]
[line 72:              this.buildInfo = serializable instanceof BuildInfo ? (BuildInfo)
serializable : null;]
```

There is **'getSerializable()'** found in file 'at/gv/brz/wallet/detail/CertificateDetailFragment.java':

```
[line 118:         DccHolder dccHolder = null;]
[line 119:         Serializable serializable = bundle == null ? null :
bundle.getSerializable(ARG_CERTIFICATE);]
[line 120:         if (serializable instanceof DccHolder) {]
```

There is **'getSerializable()'** found in file 'at/gv/brz/wallet/add/CertificateAddFragment.java':

```
[line 87:          bundle = getArguments();]
[line 88:          Serializable serializable = bundle == null ? null :
bundle.getSerializable(ARG_CERTIFICATE);]
[line 89:          DccHolder dccHolder = serializable instanceof DccHolder ? (DccHolder)
serializable : null;]
```

Reference:

- https://developer.android.com/reference/android/os/Bundle.html

MISSING ANTI-EMULATION [SAST]   WARNING

Description:

The mobile application does not use any anti-emulation or anti-debugger techniques (e.g. detecting rooted devices or checking if contacts are authentic).
This can significantly facilitate application debugging and reverse-engineering processes.

Reference:

- https://github.com/strazzere/anti-emulator

External Communications and Outgoing Traffic

Mobile Application Endpoints

Static mobile application security test revealed the following remote hosts where the mobile application may send or receive data:

Hostname	IP:Port	SSL Encryption	Websec Server Security	Domain Domain Security
pwall.net:80	Not Resolved:80	Not Tested Yet	Not Tested Yet	Not Tested Yet
javax.xml.xmlconstants:80	Not Resolved:80	Not Tested Yet	Not Tested Yet	Not Tested Yet
tools.ietf.org:443	4.31.198.62:443	C+	Not Tested Yet	Not Tested Yet
dgc-trust.qr.gv.at:443	Not Resolved:443	Not Tested Yet	Not Tested Yet	Not Tested Yet
dgc-trust.qr.gv.at:N/A	Not Resolved:N/A	Not Tested Yet	Not Tested Yet	Not Tested Yet

Mobile Application Outgoing Traffic

The following HTTP/S requests were sent by mobile application without interaction with user:

🔒 GET `https://dgc-trust.qr.gv.at HTTP/1.1`

Date/Time: 12.05.2022 12:02 CET
Requested URL: https://dgc-trust.qr.gv.at/valuesetssig

🔒 GET `https://dgc-trust.qr.gv.at HTTP/1.1`

Date/Time: 12.05.2022 12:02 CET
Requested URL: https://dgc-trust.qr.gv.at/rules

🔒 GET `https://dgc-trust.qr.gv.at HTTP/1.1`

Date/Time: 12.05.2022 12:02 CET
Requested URL: https://dgc-trust.qr.gv.at/trustlist

🔒 GET `https://dgc-trust.qr.gv.at HTTP/1.1`

Date/Time: 12.05.2022 12:02 CET
Requested URL: https://dgc-trust.qr.gv.at/valuesets

🔒 GET `https://dgc-trust.qr.gv.at HTTP/1.1`

Date/Time: 12.05.2022 12:02 CET
Requested URL: https://dgc-trust.qr.gv.at/config_wallet.json

🔒 GET `https://dgc-trust.qr.gv.at HTTP/1.1`

Date/Time: 12.05.2022 12:02 CET
Requested URL: https://dgc-trust.qr.gv.at/rulessig

🔒 GET `https://dgc-trust.qr.gv.at HTTP/1.1`

Date/Time: 12.05.2022 12:02 CET
Requested URL: https://dgc-trust.qr.gv.at/trustlistsig

Software Composition Analysis Test

The mobile application uses the following external and native libraries:

External

- net.i2p
- net.pwall
- kotlinx.datetime
- kotlinx.serialization
- kotlinx.coroutines
- io.jsonwebtoken
- io.github
- ehn.techiop
- COSE
- eu.ehn
- com.lyft
- com.beust
- com.upokecenter
- com.fasterxml
- dgca.verifier

Android Native

- androidx.transition
- androidx.tracing
- androidx.collection
- androidx.exifinterface
- androidx.room
- androidx.core
- androidx.drawerlayout
- androidx.interpolator
- androidx.versionedparcelable
- androidx.security
- androidx.activity
- androidx.camera
- androidx.viewpager
- androidx.vectordrawable
- androidx.lifecycle
- androidx.legacy
- androidx.documentfile
- androidx.annotation
- androidx.sqlite
- androidx.print
- androidx.localbroadcastmanager
- androidx.inspection
- androidx.cursoradapter
- androidx.dynamicanimation
- androidx.fragment
- androidx.loader
- androidx.recyclerview
- androidx.work
- androidx.arch
- androidx.concurrent
- androidx.appcompat
- androidx.viewpager2
- androidx.customview
- androidx.coordinatorlayout
- androidx.savedstate
- androidx.cardview
- androidx.viewbinding
- androidx.constraintlayout
- kotlin

- retrofit2
- android.support