악성코드 탐지, 암호화 및 패키징

테스트 결과 보고서

문서번호 : TMD-002

VER1.0

프로젝트 명	Pre-vision	단 계	1
버 전	1.0	작성일	2024.10.02
작성자	우건희	검토자	김효진, 김선우

변경 이력서

변경일자	적용범위	버전	변경내용	작성자
2024-10-02	PROTECT MODULE	1.0	최초 작성	우건희

Ver 1.0

프로젝트 명	Pre-vision	단 계	1
버 전	1.0	작성일	2024.10.02
작성자	우건희	검토자	김효진, 김선우

1. 제목

시스템 명	PROTECT MODULE	작성일	2024-10-02
테스트 대상	Protect file module	작성자	우건희
테스트 책임자	우건희	테스트 완료일	2024-10-02
번호	테스트케이스/예상결과	개발	검증
1	Normal_files colllection 모니터링	O	
2	모듈서버에 파일 저장	O	
3	파일 PE 분석	O	
4	암호화 체크 분석	O	
5	기존 파일 PE 정보 DB 저장	O	
6	Themida를 이용한 프로텍팅	O	
7	프로텍팅된 파일 DB 저장	O	
8	프로텍팅된 파일 PE 정보 DB 저장	O	

검증란:

1. normal_files collection 파일 업로드 모니터링

```
2024-10-01 09:25:31,272 - INFO - New file detected: SourceTree.exe
2024-10-01 09:26:02,546 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-001.exe
2024-10-01 10:13:10,819 - INFO - New file detected: SourceTree.exe
2024-10-01 10:13:41,414 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-002.exe
2024-10-01 10:53:01,792 - INFO - New file detected: SourceTree.exe
2024-10-01 10:53:32,563 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-003.exe
2024-10-01 11:03:11,635 - INFO - New file detected: SourceTree.exe
2024-10-01 11:03:42,711 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-004.exe
2024-10-01 11:08:42,954 - INFO - New file detected: SourceTree.exe
2024-10-01 11:09:12,943 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-005.exe
2024-10-01 11:13:54,569 - INFO - New file detected: SourceTree.exe
2024-10-01 11:14:25,700 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-006.exe
2024-10-01 11:43:37,014 - INFO - New file detected: SourceTree.exe
2024-10-01 11:44:07,719 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-007.exe
2024-10-01 13:35:03,799 - INFO - New file detected: SourceTree.exe
2024-10-01 13:35:34,269 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-008.exe
2024-10-01 13:56:36,588 - INFO - New file detected: SourceTree.exe
2024-10-01 13:57:07,096 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-009.exe
2024-10-01 14:09:41,804 - INFO - New file detected: SourceTree.exe
2024-10-01 14:10:13,197 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-010.exe
2024-10-01 14:58:19,669 - INFO - New file detected: SourceTree.exe
2024-10-01 14:58:50,772 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-011.exe
2024-10-01 15:12:46,859 - INFO - New file detected: SourceTree.exe
2024-10-01 15:13:17,433 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-012.exe
2024-10-01 16:56:16,022 - INFO - New file detected: SourceTree.exe
2024-10-01 16:56:46,706 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-013.exe
2024-10-01 17:28:42,769 - INFO - New file detected: SourceTree.exe
2024-10-01 17:29:13,272 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-014.exe
2024-10-01 17:50:05,709 - INFO - New file detected: SourceTree.exe
2024-10-01 17:50:37,380 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-015.exe
2024-10-01 18:35:42,423 - INFO - New file detected: SourceTree.exe
2024-10-01 18:36:13,232 - INFO - File SourceTree.exe has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-016.exe
```

프로젝트 명	Pre-vision	단 계	1
버 전	1.0	작성일	2024.10.02
작성자	우건희	검토자	김효진, 김선우

시스템 명	PROTECT MODULE	작성일	2024-10-02
테스트 대상	Protect file module	작성자	우건희
테스트 책임자	우건희	테스트 완료일	2024-10-02
검증			

1. 모니터링 서비스 등록

프로젝트 명	Pre-vision	단 계	1
버 전	1.0	작성일	2024.10.02
작성자	우건희	검토자	김효진, 김선우

2. 샘플 파일 업로드

```
2024-10-01 16:22:28,781 - INFO - File with ID 66fa598901d2a9b2522e190d has been retrieved from MongoDB.
2024-10-01 16:22:34,045 - INFO - File has been saved to C:\Users\Administrator\Downloads\test.exe
2024-10-01 16:23:23,963 - INFO - File with ID 66fb92fc01d2a9b2522e1ba9 has been retrieved from MongoDB.
2024-10-01 16:23:32,397 - INFO - File has been saved to C:\Users\Administrator\Downloads\sourcetree.exe
```

3. normal file PE 분석 및 DB 저장

```
2024-10-01 09:25:31,414 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-001) successfully stored in MongoDB.
2024-10-01 10:13:10,973 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-002) successfully stored in MongoDB.
2024-10-01 10:53:01,930 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-003) successfully stored in MongoDB.
2024-10-01 11:03:11,758 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-004) successfully stored in MongoDB.
2024-10-01 11:08:43,132 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-005) successfully stored in MongoDB.
2024-10-01 11:13:54,718 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-006) successfully stored in MongoDB.
2024-10-01 11:43:37,190 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-007) successfully stored in MongoDB.
2024-10-01 13:35:03,950 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-008) successfully stored in MongoDB.
2024-10-01 13:56:36,725 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-009) successfully stored in MongoDB.
2024-10-01 14:09:41,993 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-010) successfully stored in MongoDB.
2024-10-01 14:58:19,845 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-011) successfully stored in MongoDB.
2024-10-01 15:12:46,987 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-012) successfully stored in MongoDB.
2024-10-01 16:56:16,180 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-013) successfully stored in MongoDB.
2024-10-01 17:28:42,916 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-014) successfully stored in MongoDB.
2024-10-01 17:50:05,900 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-015) successfully stored in MongoDB.
2024-10-01 18:35:42,552 - INFO - PE information for file SourceTree.exe (signature_id: 20241001-016) successfully stored in MongoDB.
```

프로젝트 명	Pre-vision	단 계	1
버 전	1.0	작성일	2024.10.02
작성자	우건희	검토자	김효진, 김선우

4. PE의 섹션별로 암호화 확인

```
2024-10-01 17:29:13,212 - INFO - Section .idata: Not Encrypted (Entropy: 1.3293255577468028)
2024-10-01 17:29:13,213 - INFO - Section .tls: Not Encrypted (Entropy: 0.18120187678200297)
2024-10-01 17:29:13,213 - INFO - Section .rsrc: Not Encrypted (Entropy: 4.909792549546962)
2024-10-01 17:29:13,213 - INFO - Section .themida: Not Encrypted (Entropy: 0.0)
2024-10-01 17:29:13,213 - INFO - Section .boot: Encrypted (Entropy: 7.950862353872665)
2024-10-01 17:29:13,213 - INFO - Section .reloc: Not Encrypted (Entropy: 2.474601752714581)
2024-10-01 17:29:13,213 - INFO - File encryption status check completed successfully.
2024-10-01 17:50:05,840 - INFO - PE section analysis completed successfully.
2024-10-01 17:50:05,840 - INFO - Section .text: Not Encrypted (Entropy: 6.662484723628816)
2024-10-01 17:50:05,840 - INFO - Section .rdata: Not Encrypted (Entropy: 5.340084256493759)
2024-10-01 17:50:05,840 - INFO - Section .data: Not Encrypted (Entropy: 4.082083024912733)
2024-10-01 17:50:05,840 - INFO - Section .rsrc: Not Encrypted (Entropy: 4.922647574902386)
2024-10-01 17:50:05,840 - INFO - Section .reloc: Not Encrypted (Entropy: 6.406080223461487)
2024-10-01 17:50:05,841 - INFO - File encryption status check completed successfully.
2024-10-01 17:50:37,333 - INFO - PE section analysis completed successfully.
2024-10-01 17:50:37,333 - INFO - Section          : Encrypted (Entropy: 7.891714821029424)
2024-10-01 17:50:37,333 - INFO - Section .idata: Not Encrypted (Entropy: 1.3293255577468028)
2024-10-01 17:50:37,333 - INFO - Section .tls: Not Encrypted (Entropy: 0.18120187678200297)
2024-10-01 17:50:37,333 - INFO - Section .rsrc: Not Encrypted (Entropy: 4.909792549546962)
2024-10-01 17:50:37,334 - INFO - Section .themida: Not Encrypted (Entropy: 0.0)
2024-10-01 17:50:37,334 - INFO - Section .boot: Encrypted (Entropy: 7.951785584317025)
2024-10-01 17:50:37,334 - INFO - Section .reloc: Not Encrypted (Entropy: 2.474601752714581)
2024-10-01 17:50:37,334 - INFO - File encryption status check completed successfully.
2024-10-01 18:35:42,503 - INFO - PE section analysis completed successfully.
2024-10-01 18:35:42,504 - INFO - Section .text: Not Encrypted (Entropy: 6.662484723628816)
2024-10-01 18:35:42,504 - INFO - Section .rdata: Not Encrypted (Entropy: 5.340084256493759)
2024-10-01 18:35:42,504 - INFO - Section .data: Not Encrypted (Entropy: 4.082083024912733)
2024-10-01 18:35:42,504 - INFO - Section .rsrc: Not Encrypted (Entropy: 4.922647574902386)
2024-10-01 18:35:42,504 - INFO - Section .reloc: Not Encrypted (Entropy: 6.406080223461487)
2024-10-01 18:35:42,504 - INFO - File encryption status check completed successfully.
2024-10-01 18:36:13,179 - INFO - PE section analysis completed successfully.
2024-10-01 18:36:13,180 - INFO - Section          : Encrypted (Entropy: 7.9145539871415105)
2024-10-01 18:36:13,180 - INFO - Section .idata: Not Encrypted (Entropy: 1.3293255577468028)
2024-10-01 18:36:13,180 - INFO - Section .tls: Not Encrypted (Entropy: 0.18120187678200297)
2024-10-01 18:36:13,180 - INFO - Section .rsrc: Not Encrypted (Entropy: 4.909792549546962)
2024-10-01 18:36:13,180 - INFO - Section .themida: Not Encrypted (Entropy: 0.0)
2024-10-01 18:36:13,180 - INFO - Section .boot: Encrypted (Entropy: 7.95737652891564)
2024-10-01 18:36:13,180 - INFO - Section .reloc: Not Encrypted (Entropy: 2.474601752714581)
2024-10-01 18:36:13,180 - INFO - File encryption status check completed successfully.
```

프로젝트 명	Pre-vision	단 계	1
버 전	1.0	작성일	2024.10.02
작성자	우건희	검토자	김효진, 김선우

5. Themida를 통한 파일 프로텍팅

```
2024-10-01 09:25:31,282 - INFO - File with signature_id 20241001-001 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-001.exe
2024-10-01 09:26:02,546 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-001.exe has been successfully encrypted.
2024-10-01 10:13:10,829 - INFO - File with signature_id 20241001-002 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-002.exe
2024-10-01 10:13:41,413 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-002.exe has been successfully encrypted.
2024-10-01 10:53:01,803 - INFO - File with signature_id 20241001-003 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-003.exe
2024-10-01 10:53:32,563 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-003.exe has been successfully encrypted.
2024-10-01 11:03:11,645 - INFO - File with signature_id 20241001-004 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-004.exe
2024-10-01 11:03:42,711 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-004.exe has been successfully encrypted.
2024-10-01 11:08:42,965 - INFO - File with signature_id 20241001-005 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-005.exe
2024-10-01 11:09:12,943 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-005.exe has been successfully encrypted.
2024-10-01 11:13:54,579 - INFO - File with signature_id 20241001-006 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-006.exe
2024-10-01 11:14:25,700 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-006.exe has been successfully encrypted.
2024-10-01 11:43:37,025 - INFO - File with signature_id 20241001-007 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-007.exe
2024-10-01 11:44:07,719 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-007.exe has been successfully encrypted.
2024-10-01 13:35:03,810 - INFO - File with signature_id 20241001-008 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-008.exe
2024-10-01 13:35:34,269 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-008.exe has been successfully encrypted.
2024-10-01 13:56:36,599 - INFO - File with signature_id 20241001-009 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-009.exe
2024-10-01 13:57:07,096 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-009.exe has been successfully encrypted.
2024-10-01 14:09:41,815 - INFO - File with signature_id 20241001-010 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-010.exe
2024-10-01 14:10:13,197 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-010.exe has been successfully encrypted.
2024-10-01 14:58:19,681 - INFO - File with signature_id 20241001-011 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-011.exe
2024-10-01 14:58:50,772 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-011.exe has been successfully encrypted.
2024-10-01 15:12:46,869 - INFO - File with signature_id 20241001-012 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-012.exe
2024-10-01 15:13:17,433 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-012.exe has been successfully encrypted.
2024-10-01 16:56:16,033 - INFO - File with signature_id 20241001-013 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-013.exe
2024-10-01 16:56:46,706 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-013.exe has been successfully encrypted.
2024-10-01 17:28:42,779 - INFO - File with signature_id 20241001-014 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-014.exe
2024-10-01 17:29:13,272 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-014.exe has been successfully encrypted.
2024-10-01 17:50:05,719 - INFO - File with signature_id 20241001-015 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-015.exe
2024-10-01 17:50:37,380 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-015.exe has been successfully encrypted.
2024-10-01 18:35:42,434 - INFO - File with signature_id 20241001-016 has been saved to C:\DBFiles\2024-10-01\origin_files\20241001-016.exe
2024-10-01 18:36:13,232 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-016.exe has been successfully encrypted.
```

실행되고 있는 Themida process

🛡 Themida.exe   9628   Running   Administrat...   12   43,784 K   x86   Themida - Advanced Windows Software Protection

6. 프로텍팅된 파일 protected_files collection에 저장

```
2024-10-01 14:09:41,994 - INFO - Starting encryption for file: C:\DBFiles\2024-10-01\origin_files\20241001-010.exe
2024-10-01 14:10:12,672 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-010.exe has been encrypted successfully to C:\DBFiles\2024-10-01\protected\20241001-010_protected.exe
2024-10-01 14:10:12,722 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-010_protected.exe has been stored in MongoDB successfully.
2024-10-01 14:10:12,723 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-010_protected.exe has been saved to MongoDB.
2024-10-01 14:10:13,196 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-010_protected.exe successfully stored in MongoDB.
2024-10-01 14:58:19,846 - INFO - Starting encryption for file: C:\DBFiles\2024-10-01\origin_files\20241001-011.exe
2024-10-01 14:58:50,214 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-011.exe has been encrypted successfully to C:\DBFiles\2024-10-01\protected\20241001-011_protected.exe
2024-10-01 14:58:50,275 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-011_protected.exe has been stored in MongoDB successfully.
2024-10-01 14:58:50,275 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-011_protected.exe has been saved to MongoDB.
2024-10-01 14:58:50,772 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-011_protected.exe successfully stored in MongoDB.
2024-10-01 15:12:46,987 - INFO - Starting encryption for file: C:\DBFiles\2024-10-01\origin_files\20241001-012.exe
2024-10-01 15:13:16,885 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-012.exe has been encrypted successfully to C:\DBFiles\2024-10-01\protected\20241001-012_protected.exe
2024-10-01 15:13:16,937 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-012_protected.exe has been stored in MongoDB successfully.
2024-10-01 15:13:16,938 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-012_protected.exe has been saved to MongoDB.
2024-10-01 15:13:17,433 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-012_protected.exe successfully stored in MongoDB.
2024-10-01 16:56:16,180 - INFO - Starting encryption for file: C:\DBFiles\2024-10-01\origin_files\20241001-013.exe
2024-10-01 16:56:46,175 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-013.exe has been encrypted successfully to C:\DBFiles\2024-10-01\protected\20241001-013_protected.exe
2024-10-01 16:56:46,231 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-013_protected.exe has been stored in MongoDB successfully.
2024-10-01 16:56:46,231 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-013_protected.exe has been saved to MongoDB.
2024-10-01 16:56:46,706 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-013_protected.exe successfully stored in MongoDB.
2024-10-01 17:28:42,916 - INFO - Starting encryption for file: C:\DBFiles\2024-10-01\origin_files\20241001-014.exe
2024-10-01 17:29:12,735 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-014.exe has been encrypted successfully to C:\DBFiles\2024-10-01\protected\20241001-014_protected.exe
2024-10-01 17:29:12,788 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-014_protected.exe has been stored in MongoDB successfully.
2024-10-01 17:29:12,788 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-014_protected.exe has been saved to MongoDB.
2024-10-01 17:29:13,272 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-014_protected.exe successfully stored in MongoDB.
2024-10-01 17:50:05,900 - INFO - Starting encryption for file: C:\DBFiles\2024-10-01\origin_files\20241001-015.exe
2024-10-01 17:50:36,829 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-015.exe has been encrypted successfully to C:\DBFiles\2024-10-01\protected\20241001-015_protected.exe
2024-10-01 17:50:36,881 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-015_protected.exe has been stored in MongoDB successfully.
2024-10-01 17:50:36,881 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-015_protected.exe has been saved to MongoDB.
2024-10-01 17:50:37,380 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-015_protected.exe successfully stored in MongoDB.
2024-10-01 18:35:42,552 - INFO - Starting encryption for file: C:\DBFiles\2024-10-01\origin_files\20241001-016.exe
2024-10-01 18:36:12,725 - INFO - File C:\DBFiles\2024-10-01\origin_files\20241001-016.exe has been encrypted successfully to C:\DBFiles\2024-10-01\protected\20241001-016_protected.exe
2024-10-01 18:36:12,775 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-016_protected.exe has been stored in MongoDB successfully.
2024-10-01 18:36:12,776 - INFO - Encrypted file C:\DBFiles\2024-10-01\protected\20241001-016_protected.exe has been saved to MongoDB.
2024-10-01 18:36:13,232 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-016_protected.exe successfully stored in MongoDB.
```

7. 프로텍팅 된 파일 PE 분석 및 DB 저장

프로젝트 명	Pre-vision	단 계	1
버 전	1.0	작성일	2024.10.02
작성자	우건희	검토자	김효진, 김선우

```
2024-10-01 00:16:40,360 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-009_protected.exe (signature_id: 20240930-009) successfully stored in MongoDB.
2024-10-01 00:21:09,246 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-010_protected.exe (signature_id: 20240930-010) successfully stored in MongoDB.
2024-10-01 00:23:06,718 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-011_protected.exe (signature_id: 20240930-011) successfully stored in MongoDB.
2024-10-01 00:29:49,778 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-012_protected.exe (signature_id: 20240930-012) successfully stored in MongoDB.
2024-10-01 00:42:23,753 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-013_protected.exe (signature_id: 20240930-013) successfully stored in MongoDB.
2024-10-01 01:05:39,652 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-014_protected.exe (signature_id: 20240930-014) successfully stored in MongoDB.
2024-10-01 01:27:18,141 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-015_protected.exe (signature_id: 20240930-015) successfully stored in MongoDB.
2024-10-01 01:29:08,837 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-016_protected.exe (signature_id: 20240930-016) successfully stored in MongoDB.
2024-10-01 01:39:46,676 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-017_protected.exe (signature_id: 20240930-017) successfully stored in MongoDB.
2024-10-01 01:56:19,827 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-018_protected.exe (signature_id: 20240930-018) successfully stored in MongoDB.
2024-10-01 02:00:15,987 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-019_protected.exe (signature_id: 20240930-019) successfully stored in MongoDB.
2024-10-01 02:14:34,353 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-020_protected.exe (signature_id: 20240930-020) successfully stored in MongoDB.
2024-10-01 02:20:37,782 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-021_protected.exe (signature_id: 20240930-021) successfully stored in MongoDB.
2024-10-01 02:22:34,422 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-022_protected.exe (signature_id: 20240930-022) successfully stored in MongoDB.
2024-10-01 02:29:01,943 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-023_protected.exe (signature_id: 20240930-023) successfully stored in MongoDB.
2024-10-01 02:32:06,867 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-024_protected.exe (signature_id: 20240930-024) successfully stored in MongoDB.
2024-10-01 02:37:34,425 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-025_protected.exe (signature_id: 20240930-025) successfully stored in MongoDB.
2024-10-01 02:42:12,235 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20240930-026_protected.exe (signature_id: 20240930-026) successfully stored in MongoDB.
2024-10-01 09:26:02,546 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-001_protected.exe (signature_id: 20241001-001) successfully stored in MongoDB.
2024-10-01 10:13:41,413 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-002_protected.exe (signature_id: 20241001-002) successfully stored in MongoDB.
2024-10-01 10:53:32,563 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-003_protected.exe (signature_id: 20241001-003) successfully stored in MongoDB.
2024-10-01 11:03:42,711 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-004_protected.exe (signature_id: 20241001-004) successfully stored in MongoDB.
2024-10-01 11:09:12,942 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-005_protected.exe (signature_id: 20241001-005) successfully stored in MongoDB.
2024-10-01 11:14:25,700 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-006_protected.exe (signature_id: 20241001-006) successfully stored in MongoDB.
2024-10-01 11:44:07,718 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-007_protected.exe (signature_id: 20241001-007) successfully stored in MongoDB.
2024-10-01 13:35:34,268 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-008_protected.exe (signature_id: 20241001-008) successfully stored in MongoDB.
2024-10-01 13:57:07,095 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-009_protected.exe (signature_id: 20241001-009) successfully stored in MongoDB.
2024-10-01 14:10:13,196 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-010_protected.exe (signature_id: 20241001-010) successfully stored in MongoDB.
2024-10-01 14:58:50,772 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-011_protected.exe (signature_id: 20241001-011) successfully stored in MongoDB.
2024-10-01 15:13:17,432 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-012_protected.exe (signature_id: 20241001-012) successfully stored in MongoDB.
2024-10-01 16:56:46,706 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-013_protected.exe (signature_id: 20241001-013) successfully stored in MongoDB.
2024-10-01 17:29:13,271 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-014_protected.exe (signature_id: 20241001-014) successfully stored in MongoDB.
2024-10-01 17:50:37,379 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-015_protected.exe (signature_id: 20241001-015) successfully stored in MongoDB.
2024-10-01 18:36:13,232 - INFO - PE information and encryption status for encrypted file C:\DBFiles\2024-10-01\protected\20241001-016_protected.exe (signature_id: 20241001-016) successfully stored in MongoDB.
```

Ver 1.0