IISC/CTF: replme

Review of Enowars 8

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About service: replme

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- Clone of replit.com

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- Provides ”REPLs” in browser

DEMO

Architecture

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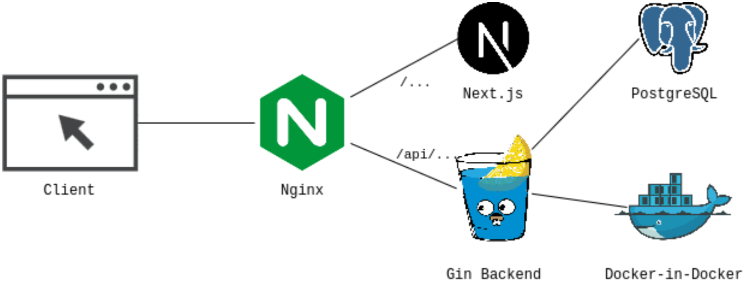

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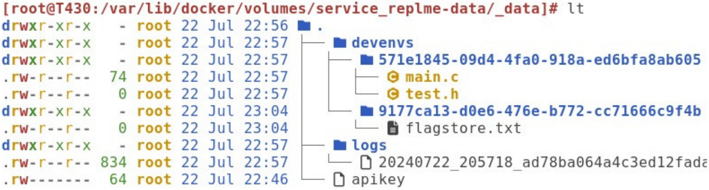

```
[root@T430:/var/lib/docker/volumes/service_replme-data/_data]# lt
drwxr-xr-x    - root 22 Jul 22:56 .
drwxr-xr-x    - root 22 Jul 22:57 ├── devenvs
drwxr-xr-x    - root 22 Jul 22:57 │   ├── 571e1845-09d4-4fa0-918a-ed6bfa8ab605
.rw-r--r--   74 root 22 Jul 22:57 │   │   ├── main.c
.rw-r--r--    0 root 22 Jul 22:57 │   │   └── test.h
drwxr-xr-x    - root 22 Jul 23:04 │   └── 9177ca13-d0e6-476e-b772-cc71666c9f4b
.rw-r--r--    0 root 22 Jul 23:04 │       └── flagstore.txt
drwxr-xr-x    - root 22 Jul 22:57 ├── logs
.rw-r--r--  834 root 22 Jul 22:57 │   └── 20240722_205718_ad78ba064a4c3ed12fada
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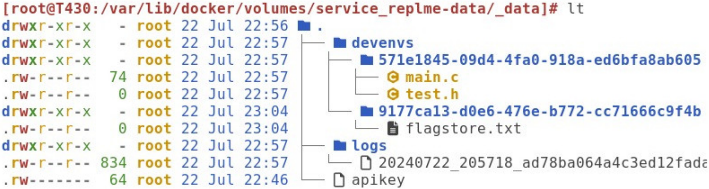

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- /api/devenv/{571..}/files/flagstore.txt
  ?uuid={571..}%2F..%2F{917..}

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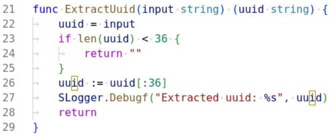
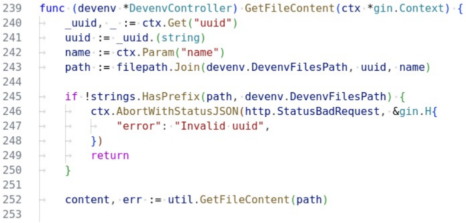


```go
func ExtractUuid(input string) (uuid string) {
	uuid = input
	if len(uuid) < 36 {
		return ""
	}
	uuid := uuid[:36]
	SLogger.Debugf("Extracted uuid: %s", uuid)
	return
}
```

Figure: service/backend/util/encoding.go



```go
func (devenv *DevenvController) GetFileContent(ctx *gin.Context) {
	_uuid, _ := ctx.Get("uuid")
	uuid := _uuid.(string)
	name := ctx.Param("name")
	path := filepath.Join(devenv.DevenvFilesPath, uuid, name)

	if !strings.HasPrefix(path, devenv.DevenvFilesPath) {
		ctx.AbortWithStatusJSON(http.StatusBadRequest, &gin.H{
			"error": "Invalid uuid",
		})
		return
	}

	content, err := util.GetFileContent(path)

```

Figure: service/backend/controller/devenv.go

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$$\begin{aligned} h(a \oplus \Delta) &= (a \oplus b \cdot p) \;\texttt{\%}\; p \\ &= a \;\texttt{\%}\; p \end{aligned}$$

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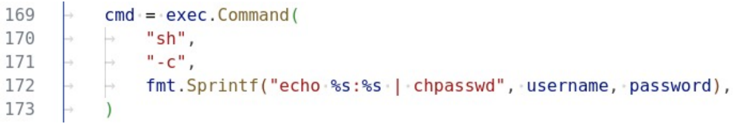

```go
	cmd = exec.Command(
		"sh",
		"-c",
		fmt.Sprintf("echo %s:%s | chpasswd", username, password),
	)
```

Figure: service/image/service/user.go

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What worked

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- People had fun

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- CRC unexploited

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- ”i wanted to do that, but i missed the crypto knowledge”
- ”exploitation wasn’t simple even with this unintended bug though, so it was a fun task”

Lessons learned

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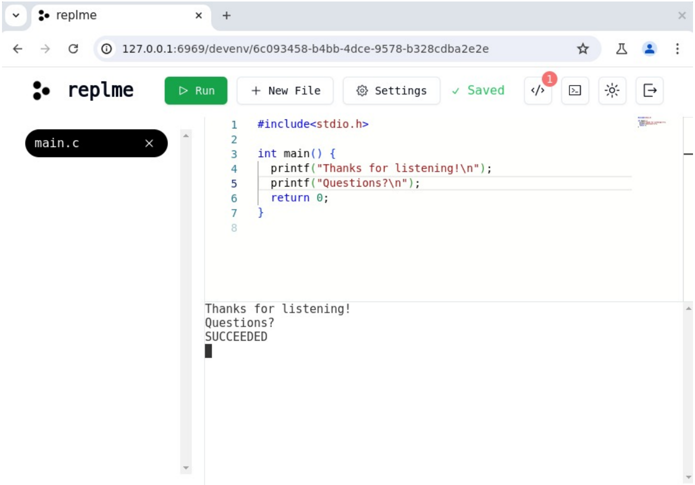
- Stay calm and take the time to think
- Do not get lost in details



```c
#include<stdio.h>

int main() {
  printf("Thanks for listening!\n");
  printf("Questions?\n");
  return 0;
}
```

```
Thanks for listening!
Questions?
SUCCEEDED
```