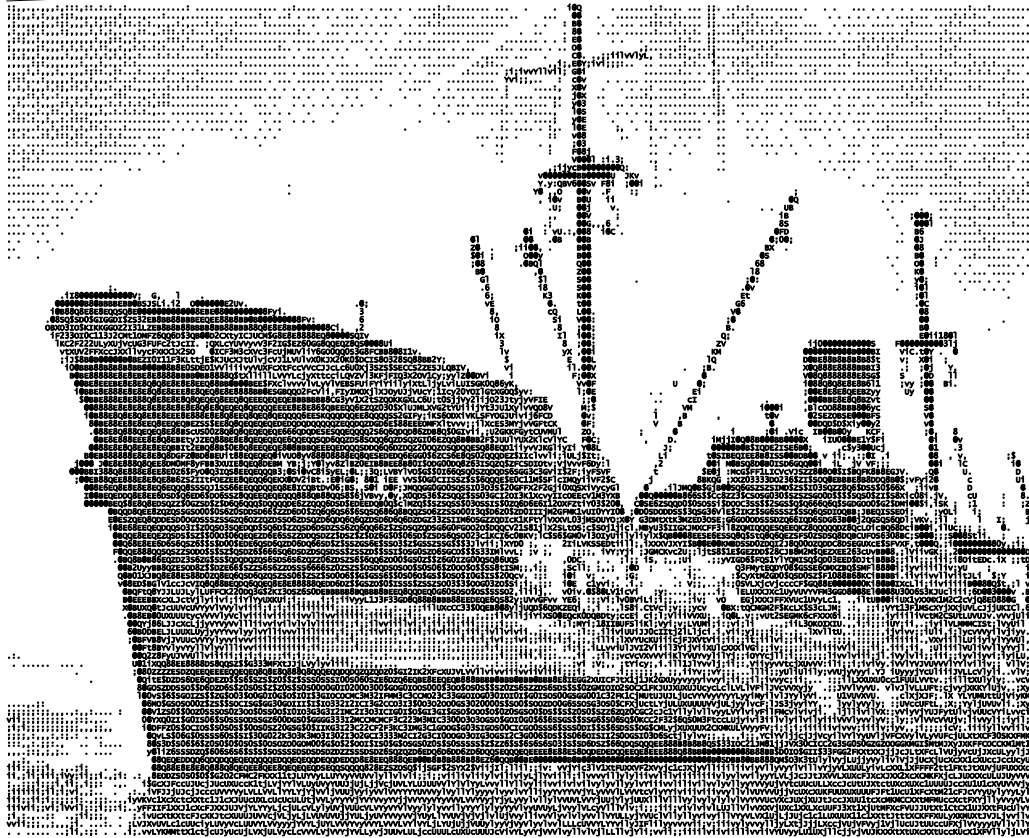


中道死船 - NAKAMICHI 'Shifune' a.k.a. 'Totenschiff'

Fast Outlawish (freefull) LZSS decompressor: <http://www.sanmayce.com/Hayabusa/index.html>



```
uint64_t Decompress (char* ret, char* src, uint64_t srcSize) {
    char* retLOCAL = ret; char* srcLOCAL = src;
    char* srcENDLOCAL = src+srcSize;
    unsigned int DWORdtrio; uint64_t Flag; //FIX
    uint64_t FlagMASK; // = 0xFFFFFFFFFFFFFFFF;
    uint64_t FlagMASKnegated; // = ~0x0000000000000000;
    while (srcLOCAL < srcENDLOCAL) {
        DWORdtrio = *(unsigned int*)srcLOCAL;
        // [1stLSB] [2ndLSB] [3rdLSB] |
        // [00][LL]xxxx[xxxxxxxx][xxxxxxxx]xx
        // [1bit] [16bit] [24bit]
        00LL = 0000 means Literal - to ease the initial check (branchless also)
        LL = 00b means 00 MatchLength, (3+00)uLL or 3+0 + 0+1+8|12 = 3| 7|11|15
        01b = 01b means 04 MatchLength, (3+00)uLL or 3+1 + 0+1+8|12 = 4| 8|12|16
        10b = 10b means 08 MatchLength, (3+00)uLL or 3+2 + 0+1+8|12 = 5| 9|13|17
        11b = 11b means 12 MatchLength, (3+00)uLL or 3+3 + 0+1+8|12 = 6|10|14|18
        00 = 00b MatchOffset, 0xFFFFFFFF>(3-00), 1 bytes long i.e. Sliding Window is 1*8-LL-00=(1+00)*8-4-04 or 168
        01 = 01b MatchOffset, 0xFFFFFFFF>(3-00), 2 bytes long i.e. Sliding Window is 2*8-LL-00=(2+00)*8-4-12 or 4K8
        10 = 10b MatchOffset, 0xFFFFFFFF>(3-00), 3 bytes long i.e. Sliding Window is 3*8-LL-00=(3+00)*8-4-20 or 1MB
        11 = 11b MatchOffset, 0xFFFFFFFF>(3-00), 4 bytes long i.e. Sliding Window is 4*8-LL-00=(4+00)*8-4-28 or 256MB
        (3+0 + 0) : 1 = 3:1 priority#11 #01 15:1 = 15
        (3+0 + 4) : 1 = 7:1 priority#04 #02 11:1 = 11
        (3+0 + 8) : 1 = 11:1 priority#02 #03 16:2 = 8
        (3+0 + 12) : 1 = 15:1 priority#01 #04 7:1 = 7
        (3+1 + 0) : 2 = 4:2 priority#14 #05 12:2 = 6
        (3+1 + 4) : 2 = 8:2 priority#09 #06 17:3 = 5,6
        (3+1 + 8) : 2 = 12:2 priority#05 #07 18:4 = 4,5
        (3+1 + 12) : 2 = 16:2 priority#03 #08 13:3 = 4,3
        (3+2 + 0) : 3 = 5:3 priority#15 #09 8:2 = 4
        (3+2 + 4) : 3 = 9:3 priority#12 #10 14:4 = 3,5
        (3+2 + 8) : 3 = 13:3 priority#08 #11 3:1 = 3 (NOT U)
        (3+2 + 12) : 3 = 17:3 priority#06 #12 9:3 = 3
        (3+3 + 0) : 4 = 6:4 priority#16 #13 10:4 = 2,5
        (3+3 + 4) : 4 = 10:4 priority#13 #14 4:2 = 2
        (3+3 + 8) : 4 = 14:4 priority#10 #15 5:3 = 1,6
        (3+3 + 12) : 4 = 18:4 priority#07 #16 6:4 = 1,5
        // branchfull [
        if ( (DWORdtrio & 0x0F) == 0x00 ) {
            #ifdef _N_GP
            memcpy(retLOCAL, (const char *) (uint64_t)(srcLOCAL+1), 16);
            #endif
            #ifdef _N_XMM
            SlowCopy128bit( (const char *) (uint64_t)(srcLOCAL+1), retLOCAL );
            #endif
            retLOCAL += ((DWORdtrio>4)&0x0F);
            srcLOCAL += ((DWORdtrio>4)&0x0F)+1;
        } else {
            DWORdtrio = DWORdtrio & (0xFFFFFFFF >> ((3-(DWORdtrio & 0x03))<3));
            #ifdef _N_GP
            memcpy(retLOCAL, (const char *) (uint64_t)(retLOCAL-(DWORdtrio>4)), 24);
            #endif
            #ifdef _N_XMM
            SlowCopy128bit( (const char *) (uint64_t)(retLOCAL-(DWORdtrio>4)), retLOCAL );
            *(uint64_t*)(retLOCAL+8*(0)) = *(uint64_t*)((retLOCAL-(DWORdtrio>4))+8*(0));
            *(uint64_t*)(retLOCAL+8*(1)) = *(uint64_t*)((retLOCAL-(DWORdtrio>4))+8*(1));
            *(uint64_t*)(retLOCAL+8*(2)) = *(uint64_t*)((retLOCAL-(DWORdtrio>4))+8*(2));
            #endif
            srcLOCAL += 1+(DWORdtrio>0x03); // 4|3|2|1
            //retLOCAL += 2+(DWORdtrio>0x03) + (DWORdtrio>0x0C); // 2|3|4|5|6|7|8|9|10|11|12|13|14|15|16 //
            retLOCAL += 3+(DWORdtrio>0x0F); // 3|4|5|6|7|8|9|10|11|12|13|14|15|16|17|18
        }
        // branchfull ]
    }
    return (uint64_t)(retLOCAL - ret);
}
```

Deathship:
// shibana: [死花] noun: a blooming cut flower; glorious death
// shinigami: [死神] noun: god of death; death
// shikai: [死海] noun: Dead Sea
// shima: [死屍] noun: demon of death -Buddhist term.
// Source: <http://tangorin.com>
// Dedicated to **B.Traven** a.k.a. *Hermann-Albert-Otto-Maksymilian-Feige*, (parents: Hermine wiencke and Adolf Feige).

On Core 2 Q950s @2.83Ghz:
D:_KAZE\Nakamichi_Shifune-Nakamichi_Shifune_branchfull.exe ewik8.Nakamichi /report
Decompressing 34218460 bytes ...
RAM-to-RAM performance: **256 MB/s**
D:_KAZE\Nakamichi_Shifune-Nakamichi_Shifune_branchfull.exe Agatha_Christie_89-ebooks.TXT.tar.Nakamichi /report
Decompressing 10623335 bytes ...
RAM-to-RAM performance: **320 MB/s**
D:_KAZE\Nakamichi_Mustang-zstd.exe -b ewik8
ewik8 : 10000000 -> 3957323 (39.57%), 107.7 MB/s, **324.6 MB/s**
D:_KAZE\Nakamichi_Mustang-zstd.exe -b Agatha_Christie_89-ebooks.TXT.tar
Agatha_Christie_ : 33258496 -> 12404504 (37.30%), 105.1 MB/s, **304.5 MB/s**

Nakamichi 'Shifune-Totenschiff' targets big English texts, that's it.

```
; 'Nakamichi_Shifune_branchfull1' decompression loop:
; Size in bytes: 93-15+2-128
; Size in instructions: 38
; Intel(R) C++ Intel(R) 64 Compiler XE for applications running
on Intel(R) 64, version 15.0.0.108 build 20140";
.B7.3:
00015 45 8b 1a mov r1d, DWORD PTR [r10]
00018 41 f7 c3 0f 00 test r1d, 15
0001f 74 4d je .B7.5
0001f 74 4d je .B7.5
.B7.4:
00021 44 89 d9 mov ecx, r11d
00024 ba ff ff ff ff mov edx, -1
00029 83 f1 03 xor ecx, 3
0002c c1 e1 03 shl ecx, 3
0002f 43 03 shr edx, cl
00031 44 23 da and r1d, edx
00034 44 89 da mov edx, r11d
00037 c1 ea 04 shr edx, 4
0003a 48 f7 da neg rdx, 4
0003d 48 03 d0 add rdx, rax
00040 48 0a 0a mov rcx, QWORD PTR [rdx]
00043 48 89 08 mov QWORD PTR [rax], rcx
00046 48 8b 4a 08 mov rcx, QWORD PTR [8+rdx]
0004a 48 89 48 08 mov QWORD PTR [8+rdx], rcx
0004e 44 89 d9 mov ecx, r11d
00051 83 e1 03 and ecx, 3
00054 41 83 e3 0f and r1d, 15
00058 ff c1 inc ecx
0005a 41 83 c3 03 and r1d, 3
0005e 48 8b 52 10 mov rdx, QWORD PTR [16+rdx]
00062 43 03 d1 add r10, rcx
00065 48 89 50 10 mov QWORD PTR [16+rdx], rdx
00069 49 03 c2 add rax, r11
0006c eb 23 jmp .B7.6
.B7.5:
0006e 41 c1 eb 04 shr r1d, 4
00072 44 89 da mov rcx, r11d
00075 41 83 e3 0f and r1d, 15
00079 f3 41 0f 6f 42 movdqu xmm0, XMMWORD PTR [1+r10]
0007f 41 ff c3 inc r1d
00082 48 83 e2 0f and rdx, 15
00086 f3 0f 7f 00 movdqu XMMWORD PTR [rax], xmm0
0008a 48 03 c2 add rax, rdx
0008d 4d 03 d3 add r10, r11
.B7.6:
00090 4d 3b d0 cmp r10, r8
00093 72 80 jb .B7.3
// Каково ви засягат моите дрими?
// По тях има радост и много съзми.
// Каково ви е грижа дали аз дида?
// За вашата милост аз не пльза.
// Защо ви е грижа какво ми хареса?
// Тук вече е моят, не вашият съвет.
// Небето ви аз не искам да зная,
// добре ми е само в горещия ад.
// За вашата милост не искам да зная.
// И мъртви ли нося или богове,
// не ще ви призная. Каково ви засяга?
// С проклятие никои не ще ви зове.
// Аз пльза на мита за бога възкръснал.
// Не вярвам в небето и Страшния съд.
// Възмездие адско не ще ме уплаши.
// За мен е единствен широкият път,
// Хопла, хей, в открито море, хопла, хопла, хей!
// Б. Травен. Корабът на Мъртвите!
// "There it now stands for ever. Black on white.
// I can't get away from it. Ahoj, Yorikke! ahoj, hoy, ho!
// Go to hell now if you wish. What do I care? It's all the same now to me.
// I am part of you now. Where you go I go, where you leave I leave, when you go to the devil I go. Married.
// Vanished from the living. Damed and doomed. Of me there is not left a breath in all the vast world.
// Ahoj, Yorikke! Ahoj, hoy, ho!
// I am not buried in the sea,
// The death ship is now part of me
// So far from sunny New Orleans
// So far from lovely Louisiana."
// An excerpt from "THE DEATH SHIP - THE STORY OF AN AMERICAN SAILOR" by B. TRAVEN
// "Walking home to our good old Yorikke, I could not help thinking of this beautiful ship, with a crew on board that had faces as if they were seeing ghosts by day and by night.
// Compared to that glided Eborard, the Yorikke was an honorable old lady with lavender sachets in her drawers.
// Yorikke did not pretend to anything she was not. She lived up to her looks. Honest to her lowest ribs and to the leaks in her bilge.
// Now, what is this? I find myself falling in love with that old jane.
// All right, I cannot pass by you, Yorikke; I have to tell you I love you. Honest, baby, I love you.
// I have six black finger-nails, and four black and green-blue nails on my toes, which you, honey, gave me when necking you.
// Grate-bars have crushed some of my toes. And each finger-nail has its own painful story to tell.
// My chest, my back, my arms, my legs are covered with scars of burns and scorchings.
// Each scar, when it was being created, caused me pains which I shall surely never forget.
// But every outcry of pain was a love-cry for you, honey.
// You are no hypocrite. Your heart does not bleed tears when you do not feel heart-aches deeply and truly.
// You do not dance on the water if you do not feel like being jolly and kicking chasers in the pants.
// Your heart never lies. It is fine and clean like polished gold. Never mind the rags, honey dear.
// When you laugh, your whole soul and all your body is laughing.
// And when you weep, sweetly, then you weep so that even the reefs you pass feel like weeping with you.
// I never want to leave you again, honey. I mean it. Not for all the rich and elegant buckets in the world.
// I love you, my gypsy of the sea!"
// An excerpt from "THE DEATH SHIP - THE STORY OF AN AMERICAN SAILOR" by B. TRAVEN/
07/26/2015 11:55 PM 10,192,446 dickens
08/17/2015 02:55 AM 3,740,418 dickens.Nakamichi
08/05/2015 04:32 AM 3,681,828 dickens.zip ! Zsa-a-gzip-mw9 dickens.zip dickens !
On core 2 Q950s @2.83Ghz laptop:
D:\_KAZE\Nakamichi_Shifune-Nakamichi_Shifune_branchfull.exe dickens.Nakamichi /report
Nakamichi 'Shifune-Totenschiff', written by Kaze, based on Nbuo Ito's LZSS source, babealicious suggestion by m2 enforced, mufins Finesse suggestion by Jim Dempsey enforced.
Decompressing 3740418 bytes ...
RAM-to-RAM performance: 512 MB/s.
D:\_KAZE\Nakamichi_Mustang\124-9-b -x -r1 dickens
Nb of threads = 1 ; Compression Level = 9
dickens : 10192446 -> 4442965 (43.59%), 11.8 MB/s, 896.2 MB/s
```