

You say Luhn, I say mod 10



Joe Pruitt, 2005-18-07

Some fun stuff has been going on in the [iRules forum](#) with regards to security.

If you are interested in securing your site from exported social security numbers, you might want to take a look at this [Tech Tip](#) derived from an iRule.



Most recently we've been having some [fun](#) with the [LUHN algorithm](#). Basically it can tell a good credit card number from a bad one. Here's the algorithm (from [wikipedia](#)):

```
function checkLuhn(string purportedCC) {
  int sum := 0
  int ndigits := length(purportedCC)
  int parity := ndigits modulus 2
  for i from 0 to ndigits - 1 {
    int digit := integer(purportedCC[i])
    if i modulus 2 = parity
      digit := digit x 2
    if digit > 9
      digit := digit - 9
    sum := sum + digit
  }
  return (sum modulus 10) = 0
}
```

Unfortunately, there aren't any TCL implementations, but that didn't stop unRuleY. Here's unRuleY's optimized version. Always one to outdo himself, he replaced the expensive modulus operator with the less CPU-intensive bitwise AND.

```
# Calculate MOD10
for { set i 0 } { $i < $card_len } { incr i } {
  set c [string index $card_number $i]
  if {($i & 1) == $double} {
    if {[incr c $c] >= 10} {incr c -9}
  }
  incr chksum $c
}

# Determine Card Type
switch [string index $card_number 0] {
  3 { set type AmericanExpress }
  4 { set type Visa }
  5 { set type MasterCard }
  6 { set type Discover }
  default { set type Unknown }
}

# If valid card number, then mask out numbers with X's
if { ($chksum % 10) == 0 } {
  set iscard valid
}
```

Check out the [thread](#) for the entire rule!

-Joe

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