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A. Melnikov  
Isode Limited  
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**Additional collation algorithms for use in IMAP and Sieve  
draft-ietf-morg-collations-00**

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Abstract

This document defines extra collation that were found useful when searching for text in email messages.

Note

A revised version of this draft document will be submitted to the RFC editor as a Proposed Standard for the Internet Community. Discussion and suggestions for improvement are requested, and should be sent to morg@ietf.org.

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## **1. Conventions used in this document**

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#) [[Kwds](#)].

## **2. ASCII Signed Numeric Collation Description**

The "i;ascii-signed-numeric" collation is a simple collation intended for use with arbitrarily-sized, signed decimal integer numbers stored as octet strings. US-ASCII digits (0x30 to 0x39) represent digits of the numbers. The numbers can have an arbitrary number of leading US-ASCII whitespace characters (0x20), optionally followed by the sign ("+", "-") and then by digits of the number. If the "+" sign is omitted, the number is considered to be positive.

Before converting from string to integer, all leading whitespace characters are removed. If no "+" or "-" character is found, "+" is then prepended to the string. And finally, the input string is truncated at the first non-digit character, not counting the "+"/"-" prefix. All input is valid for this collation; strings that do not start (after whitespace removal) with a "+", "-", or a digit represent positive infinity.

The collation supports equality and ordering, but does not support the substring operation.

The equality operation returns "match" if the two strings represent the same number (i.e., leading whitespaces, zeroes and trailing non-digits are disregarded), and "no-match" if the two strings represent different numbers.

The ordering operation returns "less" if the first string represents a smaller number than the second, "equal" if they represent the same number, and "greater" if the first string represents a larger number than the second.

Some examples: "-500" is less than "-90", "0" is less than "1M", and "1" is less than "4294967298". "4294967298", "04294967298", and "4294967298b" are all equal. "04294967298" is less than "". "+", "-", "", "x", and "y" are equal.



### **2.1. ASCII Signed Numeric Collation Registration**

```
<?xml version='1.0'?>
<!DOCTYPE collation SYSTEM 'collationreg.dtd'>
<collation rfc="XXXX" scope="other" intendedUse="common">
  <identifier>i;ascii-signed-numeric</identifier>
  <title>ASCII Signed Numeric</title>
  <operations>equality order</operations>
  <specification>RFC XXXX</specification>
  <owner>IETF</owner>
  <submitter>alexey.melnikov@isode.com</submitter>
</collation>
```

### **3. ASCII Punctuation Ignore Numeric Collation Description**

The "i;ascii-punc-ignore-numeric" collation is a collation intended for use with arbitrarily-sized, unsigned decimal integer numbers stored as octet strings. US-ASCII digits (0x30 to 0x39) represent digits of the numbers. Any digit of such numbers can be followed or preceded by any number of the following US-ASCII characters, which are ignored for the purpose of comparison: " " (0x20), "-", "+", ",", ";", ".". [[anchor5: The list of characters to ignore is to be discussed.]]

Before converting from string to integer, all characters to be ignored are removed from the string. After that, the input string is truncated at the first non-digit character. All input is valid for this collation; strings that do not start (after removal of all characters to ignore) with a digit represent positive infinity.

The collation supports equality and ordering, but does not support the substring operation.

The equality operation returns "match" if the two strings represent the same number (i.e., leading whitespaces, zeroes and trailing non-digits are disregarded), and "no-match" if the two strings represent different numbers.

The ordering operation returns "less" if the first string represents a smaller number than the second, "equal" if they represent the same number, and "greater" if the first string represents a larger number than the second.

Some examples: "+1-500" is less than "2 50.0", " 0" is less than "1M", and "1" is less than "4294967298". "4294967298", "04294967298", and "4294967298b" are all equal. "04294967298" is less than ". "+, "-", "", "x", and "y" are equal.



### **[3.1.](#) ASCII Punctuation Ignore Numeric Collation Registration**

```
<?xml version='1.0'?>
<!DOCTYPE collation SYSTEM 'collationreg.dtd'>
<collation rfc="XXXX" scope="other" intendedUse="common">
  <identifier>i;ascii-punc-ignore-numeric</identifier>
  <title>ASCII Punctuation Ignore Numeric</title>
  <operations>equality order</operations>
  <specification>RFC XXXX</specification>
  <owner>IETF</owner>
  <submitter>alexey.melnikov@isode.com</submitter>
</collation>
```

## **[4.](#) Other Collations**

[[anchor8: Other collations to consider: case preserving version of i;unicode-casemap defined in [RFC 5051](#).]]

## **[5.](#) Formal Syntax**

The following syntax specification uses the augmented Backus-Naur Form (BNF) as described in [\[ABNF\]](#). Terms not defined here are taken from [\[ABNF\]](#).

```
ascii-signed-numeric = *SP [("-" / "+")] 1*DIGIT
    ; This production defines valid string prefixes
```

```
punc-ignore-unsigned-numeric = *punctuation DIGIT
    *(punctuation / DIGIT)
    ; This production defines valid string prefixes
```

```
punctuation = SP / "+" / "-" / "." / "," / ";"
```

## **[6.](#) Security Considerations**

[[anchor9: TBD.]]

## **[7.](#) IANA Considerations**

TBD.





## **8. Acknowledgements**

TBD.

## **9. References**

### **9.1. Normative References**

- [ABNF] Crocker, D., Ed. and P. Overell, "Augmented BNF for Syntax Specifications: ABNF", [RFC 5234](#), January 2008.
- [Kwds] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [RFC 2119](#), March 1997.
- [RFC4790] Newman, C., Duerst, M., and A. Gulbrandsen, "Internet Application Protocol Collation Registry", [RFC 4790](#), March 2007.

### **9.2. Informative References**

- [RFC3501] Crispin, M., "INTERNET MESSAGE ACCESS PROTOCOL - VERSION 4rev1", [RFC 3501](#), March 2003.

#### Author's Address

Alexey Melnikov  
Isode Limited  
5 Castle Business Village  
36 Station Road  
Hampton, Middlesex TW12 2BX  
UK

Email: [Alexey.Melnikov@isode.com](mailto:Alexey.Melnikov@isode.com)

URI: <http://www.melnikov.ca/>

