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New Session Initiation Protocol Resource-Priority Header  
Namespaces for the Defense Information Systems Agency  
[draft-polk-sip-rph-new-namespaces-01](#)

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Abstract

This document creates additional Session Initiation Protocol Resource-Priority header namespaces, to be IANA registered. This document intends to update [RFC 4412](#), as a Proposed Standard document if published by the RFC-Editor.



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## [1.](#) Introduction

The US Defense Information Systems Agency (DISA) is rolling out their Session Initiation Protocol (SIP) based architecture at this time. This network will require more Resource-Priority header (RPH) namespaces than were defined, and IANA registered, in [RFC 4412](#) [[RFC4412](#)]. The purpose of this document is to define these additional namespaces. Each will be [RFC 4412](#) defined preemption based in nature, and will have the same 5 priority-values. However, the need for additional namespaces is due to DISA's plan to have multiple divisions within their network, which will limit the ability of one of these divisions from preempting sessions identified as being from another namespace division. A simple example of this is within the DSN network, there may be a specific namespace assigned to the US Army, one to the US Navy, one to the US Air Force, and one to the US Marines. Each of these namespaces will need to be identified as being part of the DSN network, so each namespace will start with "dsn", such as

dsn-usarmy.priority-value

while another namespace within the dsn network is

dsn-usmarines.priority-value

and so on for the Navy and Air Force.

A unique application of these different namespaces is that they will be able to gain preferential treatment only to SIP messages, and by extension - the sessions established with like namespaces, but not other messages/sessions with different namespaces. This is a local policy decision that [RFC 4412](#) considers to be fundamental.

In other words, messages with a namespace of dsn-usarmy may only

have their RPH priority-values compared for preferential treatment  
to other dsn-usarmy namespaces, and not any other namespaces, unless

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two or more (complete) namespaces are considered to be equivalent, as defined in [section 8 of RFC 4412](#) [[RFC4412](#)].

This is all a matter of local policy. However, this policy is a known requirement from DISA to support moving forward.

### **[1.1](#) 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 [[RFC2119](#)].

## **[2.](#) Creating an Implied RPH Namespace Delimiter**

As shown in [section 1](#) of this document, the common ASCII character separating one namespace from another is the '-' dash character. The beginning 3 characters of each namespace created within this document is "dsn". This document does not officially split the RPH namespace into 3 parts, but RECOMMENDS another creating an IANA registered RPH namespace, or one that is not IANA registered, avoid the use of the '-' dash character unless they wish to have some implementations process this character as a delimiter because namespace parts. The DISA network, the original reason for the creation of the SIP Resource-Priority header, intends to use this character in this fashion.

### **[2.1](#) One-Part or Two-Part Namespaces Do Not Change Anything**

The fact that there is a '-' dash character does not change the fact that everything on the left side of the '.' character is either the same or different. This means this document does not create a 2-part namespace, and by extension, a 3-part Resource-Priority header value. The simple fact that anything has changed on the left side of the '.' character means there is a new namespace to process, regardless of whether this difference is on the right or left side of a '-' dash character within what [RFC 4412](#) defines as the namespace field within the RPH.

That said, code in a SIP entity can look for the '-' dash character to identify a virtual delimiter to be used however that implementation wants. This is also viewed as an effective visual delimiter for anyone looking at the RPH namespace to see which subgroup within a primary domain the namespace belongs to (or within).

The purpose of the characters on the left side of the '-' dash

character in the RPH namespace is not binding, but is generally understood to be the domain identifier part of the namespace.

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Equally, the purpose of the characters on the right side of the '-' dash character in the RPH namespace is also not binding, but is generally understood to be the sub-domain identifier. Looking at the namespaces shown in [section 1](#) of this document, DISA is defining all of these new namespaces to be within the "dsn" domain (the first part of all the namespaces here), of which all users within the US Army will communicate within. All the users within the US Navy, US Air Force and US Marines also will only communicate within the "dsn" domain. Thus the subdomain for these 4 groups are "usarmy", "usnavy", "usairforce", and "usmarines". This scenario creates four new RPH namespaces:

```
dsn-usarmy
dsn-usnavy
dsn-usairforce
dsn-usmarines
```

that can be viewed as being part of the same network-ID ("dsn") and different subdomains, called a precedence-domain, which are separated by a '-' dash character. The '-' dash character is part of the overall single namespace of each.

If any one (or more) character(s) in a namespace is different, it is to be considered a different namespace. For example, "dsn-usarmy" is a different namespace than "dsn-usarmy1", which is different than "dsn-usarmy2". The fact that the differences between these namespaces are on the right side of the '-' dash character means SIP, through [RFC 4412](#), interprets the difference to be a namespace difference. Hence, a 417 (Unknown Namespace) is the appropriate response to a Resource-Priority header with an unrecognized namespace. The same is true for a comparison between these namespaces: "dsn-usarmy" and "dsn2-usarmy".

### **3. New RPH Namespaces Created**

The following 50 SIP Resource Priority header namespaces are created by this document:

dsn-000000	dsn-000010	dsn-000020	dsn-000030
dsn-000001	dsn-000011	dsn-000021	dsn-000031
dsn-000002	dsn-000012	dsn-000022	
dsn-000003	dsn-000013	dsn-000023	
dsn-000004	dsn-000014	dsn-000024	
dsn-000005	dsn-000015	dsn-000025	
dsn-000006	dsn-000016	dsn-000026	
dsn-000007	dsn-000017	dsn-000027	
dsn-000008	dsn-000018	dsn-000028	
dsn-000009	dsn-000019	dsn-000029	

dsn-00000A	dsn-00001A	dsn-00002A
dsn-00000B	dsn-00001B	dsn-00002B
dsn-00000C	dsn-00001C	dsn-00002C

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dsn-00000D	dsn-00001D	dsn-00002D
dsn-00000E	dsn-00001E	dsn-00002E
dsn-00000F	dsn-00001F	dsn-00002F

Each namespace listed above will have the same 5 priority-levels:

.0 (lowest priority)  
.2  
.4  
.6  
.8 (highest priority)

As stated earlier, one namespace will not be considered for preferential treatment over another namespace unless local policy has configured a SIP entity processing two messages (each with different namespaces) as being equivalent (see [section 8 of RFC 4412](#) [[RFC4412](#)] for this detailed).

The reality of this is, a message (or a call) with this RPH field of:

dsn-000001.8

for example, will not have any preferential treatment over a message, for example, with this RPH field:

dsn-000010.0

This is currently the policy within DISA.

As stated in [Section 9 of RFC 4412](#) [[RFC4412](#)], an IANA registered namespace SHOULD NOT change the number, and MUST NOT change the relative priority order, of its assigned priority-values.

#### **4. IANA Considerations**

Abiding by the rules established within [RFC 4412](#) [[RFC4412](#)], this is a Standards-Track document registering new SIP Resource-Priority header namespaces, and their associated priority-values and intended algorithms.

##### **[4.1](#) IANA Resource-Priority Namespace Registration**

Within the "Resource-Priority Namespaces" registry in the sip-parameters section of IANA, the following table lists the new RPH namespaces registered by this document (NOTE: RFCXXXX is to be replaced by this document's RFC number if this document is published by the RFC-Editor):

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Namespace	Levels	Intended Algorithm	New warn-code	New resp. code	Reference
-----	-----	-----	-----	-----	-----
dsn-000000	5	preemption	no	no	[RFCXXXX]
dsn-000001	5	preemption	no	no	[RFCXXXX]
dsn-000002	5	preemption	no	no	[RFCXXXX]
dsn-000003	5	preemption	no	no	[RFCXXXX]
dsn-000004	5	preemption	no	no	[RFCXXXX]
dsn-000005	5	preemption	no	no	[RFCXXXX]
dsn-000006	5	preemption	no	no	[RFCXXXX]
dsn-000007	5	preemption	no	no	[RFCXXXX]
dsn-000008	5	preemption	no	no	[RFCXXXX]
dsn-000009	5	preemption	no	no	[RFCXXXX]
dsn-00000A	5	preemption	no	no	[RFCXXXX]
dsn-00000B	5	preemption	no	no	[RFCXXXX]
dsn-00000C	5	preemption	no	no	[RFCXXXX]
dsn-00000D	5	preemption	no	no	[RFCXXXX]
dsn-00000E	5	preemption	no	no	[RFCXXXX]
dsn-00000F	5	preemption	no	no	[RFCXXXX]
dsn-000010	5	preemption	no	no	[RFCXXXX]
dsn-000011	5	preemption	no	no	[RFCXXXX]
dsn-000012	5	preemption	no	no	[RFCXXXX]
dsn-000013	5	preemption	no	no	[RFCXXXX]
dsn-000014	5	preemption	no	no	[RFCXXXX]
dsn-000015	5	preemption	no	no	[RFCXXXX]
dsn-000016	5	preemption	no	no	[RFCXXXX]
dsn-000017	5	preemption	no	no	[RFCXXXX]
dsn-000018	5	preemption	no	no	[RFCXXXX]
dsn-000019	5	preemption	no	no	[RFCXXXX]
dsn-00001A	5	preemption	no	no	[RFCXXXX]
dsn-00001B	5	preemption	no	no	[RFCXXXX]
dsn-00001C	5	preemption	no	no	[RFCXXXX]
dsn-00001D	5	preemption	no	no	[RFCXXXX]
dsn-00001E	5	preemption	no	no	[RFCXXXX]
dsn-00001F	5	preemption	no	no	[RFCXXXX]
dsn-000020	5	preemption	no	no	[RFCXXXX]
dsn-000021	5	preemption	no	no	[RFCXXXX]
dsn-000022	5	preemption	no	no	[RFCXXXX]
dsn-000023	5	preemption	no	no	[RFCXXXX]
dsn-000024	5	preemption	no	no	[RFCXXXX]
dsn-000025	5	preemption	no	no	[RFCXXXX]
dsn-000026	5	preemption	no	no	[RFCXXXX]
dsn-000027	5	preemption	no	no	[RFCXXXX]
dsn-000028	5	preemption	no	no	[RFCXXXX]
dsn-000029	5	preemption	no	no	[RFCXXXX]
dsn-00002A	5	preemption	no	no	[RFCXXXX]
dsn-00002B	5	preemption	no	no	[RFCXXXX]
dsn-00002C	5	preemption	no	no	[RFCXXXX]
dsn-00002D	5	preemption	no	no	[RFCXXXX]

dsn-00002E	5	preemption	no	no	[RFCXXXX]
dsn-00002F	5	preemption	no	no	[RFCXXXX]
dsn-000030	5	preemption	no	no	[RFCXXXX]

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dsn-000031      5      preemption      no      no      [RFCXXXX]

## 4.2 IANA Priority-Value Registrations

Within the "Resource-Priority Priority-values" registry in the sip-parameters section of IANA, the list of priority-values for each of the newly created RPH namespaces from [section 4.1](#) of this document, prioritized least to greatest, is registered by the following:

Namespace: dsn-000000

Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000001

Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000002

Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000003

Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000004

Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000005

Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000006

Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000007

Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000008

Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000009

Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

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Namespace: dsn-00000A  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00000B  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00000C  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00000D  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00000E  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00000F  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000010  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000011  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000012  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000013  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000014  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000015  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000016  
Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

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Namespace: dsn-000017  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000018  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000019  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00001A  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00001B  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00001C  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00001D  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00001E  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00001F  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000020  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000021  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000022  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000023  
Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

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Namespace: dsn-000024  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000025  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000026  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000027  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000028  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000029  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00002A  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00002B  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00002C  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00002D  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00002E  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-00002F  
Reference: RFCXXXX (this document)  
Priority-Values (least to greatest): "0", "2", "4", "6", "8"

Namespace: dsn-000030  
Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

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Namespace: dsn-000031

Reference: RFCXXXX (this document)

Priority-Values (least to greatest): "0", "2", "4", "6", "8"

## 5. Security Considerations

This document has the same Security Considerations as [RFC 4412](#).

## 6. Acknowledgements

To Jeff Hewett for his helpful guidance in this effort.

## 7. References

### 7.1 Normative References

[RFC4412] Schulzrinne, H., Polk, J., "Communications Resource Priority for the Session Initiation Protocol (SIP)", [RFC 4411](#), Feb 2006

[RFC2119] S. Bradner, "Key words for use in RFCs to Indicate Requirement Levels", [RFC 2119](#), March 1997

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