Schema for representing resources for calendaring and scheduling
                           services
                  draft-cal-resource-schema-00

Abstract

        This specification describes a schema for representing
   resources for calendaring and scheduling.   A resource in the
   scheduling context is any shared entity that can be scheduled by a
   calendar user, but does not control its own attendance status.

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1. Introduction

        This specification defines a schema for representing
   resources to ease the discovery and scheduling of resources between
   any calendar client and server.
        The Object model chosen is the lowest common denominator to
   adapt for LDAP.

2. 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].

3. Resource Object

   A resource object definition should contain all information
   required to find and schedule the right resource.   For this, it
   should contain all, or a set of the attributes described in
   Section 4.   Resource Kind, described in Section 4.1, and Unique ID,
   described in Section 4.2, MUST be present in any resource object.
   Additional proprietary attributes may be defined as well, but must
   begin with "X-". Clients encountering attributes they don't know
   about must ignore them.

   This document specifies whether a given Attribute or Property is
   required for a query to find the right resource, or is used to just
   give additional information during scheduling of the resource.
   Attributes or Properties required to contact the resource are not
   included in this specification.   LDAP attributes defined in
   [RFC4519] and VCARD properties defined in vCard Format Specification
   [I-D.ietf-vcarddav-vcardrev] can be used to include contact
   information for the resource.

3.1. LDAP Resource ObjectClass Definition

        In LDAP, a resource object SHOULD be defined as an objectclass
   with attributes as defined in Section 4. This objectClass MUST be an
   auxiliary class. Its Superior class MUST be the calEntry objectClass
   as defined in Section 2.4.3.1 of [RFC2739]

```
      ( 1.3.6.1.1.x.1.1
        NAME 'CalendarResource'
        DESC 'Calendar Resource Object Class'
        SUP calEntry
        AUXILIARY
        MUST (calresourcekind $ uid)
        MAY (cn $ nickname $ description $ ou $ categories $ member $
             uniquemember $ accessabilityurl $ capacity $ owner $
             resourcemanager $ timezoneid $ multiplebookings $
             maxinstances $ bookingwindowstart $ bookingwindowend $
             resourcenotes) )
```

4. Resource Attributes

4.1. Resource Kind

    Description:
    The kind of resource. Required for a meaningful resource
  scheduling query and MUST be defined.

  ValueType:
    Some of the possible values are "Location", "Thing", or
"Group".
    Location is used for any physical location resource such as
room, building, etc.
    Thing is used for any physical object that can scheduled like
projector, printer, etc.
    Group is used to specify a group of resources with a specific
skill set. For example: drivers, electricians, etc.

  Example value:
    Location

4.1.1. LDAP Attribute Definition

```
      ( 1.3.6.1.1.x.0.1
        NAME 'CalResourceKind'
        DESC 'Calendar Resource Kind'
        EQUALITY caseIgnoreMatch
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.15
        SINGLE-VALUE )
```

4.1.2. VCard Property Definition

        Property KIND that specifies the kind of objected represented,
   as defined in Section 6.1.5 of [I-D.ietf-vcarddav-vcardrev].

4.2. Unique ID

   Description:
        A Unique Identifier. Not required for a resource scheduling
   query but MUST be defined.

   ValueType:
        Single string value.

   Example value:
        room1-id1

4.2.1. LDAP Attribute Definition

     uid attribute as defined in Section 2.39 of [RFC4519].

4.2.2. VCard Property Definition

        UID property as defined in Section 7.7.7 of
   [I-D.ietf-vcarddav-vcardrev].

4.3. Common Name

   Description:
        Full name of the resource. Not required for a resource
   scheduling query.

   ValueType:
        String value.

   Example value:
        Room One

4.3.1. LDAP Attribute Definition

        cn attribute as defined in Section 2.3 of [RFC4519].

4.3.2. VCard Property Definition

        FN property as defined in Section 7.2.1 of
   [I-D.ietf-vcarddav-vcardrev].

4.4. Nick Name

   Description:
        A short or popular name for the resource. Not required for a
   resource scheduling query.

   ValueType:
        String value.

   Example value:
        TheOne

4.4.1. LDAP Attribute Definition

     (1.3.6.1.1.x.0.2
       NAME 'NickName'
       DESC 'Nick Name'
       EQUALITY caseIgnoreIA5Match
       SYNTAX 1.3.6.1.4.1.1466.115.121.1.26)

4.4.2. VCard Property Definition

        NICKNAME property as defined in Section 7.2.3 of
   [I-D.ietf-vcarddav-vcardrev].

4.5. Description

   Description:
        Description of the resource. Not required for a resource
   scheduling query.

   ValueType:
        String value.

   Example value:
        Room 1 in Building X

4.5.1. LDAP Attribute Definition

        description attribute as defined in Section 2.5 of [RFC4519].

4.5.2. VCard Property Definition

        NOTE property as defined in Section 7.7.2 of
   [I-D.ietf-vcarddav-vcardrev].

4.6. Organizational Unit

   Description:
        Organizations the resource belongs to. Not required for a
   resource scheduling query.

   ValueType:
        String value.

   Example value:
        EngineeringDepartment

4.6.1. LDAP Attribute Definition

        ou attribute as defined in Section 2.20 of [RFC4519].

4.6.2. VCard Property Definition

        ORG property as defined in Section 7.6.4 of
   [I-D.ietf-vcarddav-vcardrev].

4.7. Categories

   Description:
        Categories the resource falls under or tags for easy discovery
   of the resource. Can be used for a resource scheduling query.

   ValueType:
        String value.

   Example value:
        Rooms, EngineeringResources

4.7.1. LDAP Attribute Definition

      (1.3.6.1.1.x.0.3
        NAME 'Categories'
        DESC 'Categories'
        EQUALITY caseIgnoreIA5Match
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.26)

4.7.2. VCard Property Definition

        CATEGORIES property as defined in Section 7.7.1 of
   [I-D.ietf-vcarddav-vcardrev].

4.8. Group Member

    Description:
          List of unique resources in a group of resources object. Not
    required for a resource scheduling query.

    ValueType:
          URL value.

    Example value:
          http://www.example.com/printer1.html
          http://www.example.com/printer2.html

4.8.1. LDAP Attribute Definition

    member attribute as defined in Section 2.17 or uniquemember attribute
    as defined in Section 2.40 of [RFC4519].

4.8.2. VCard Property Definition

          MEMBER property as defined in Section 7.6.5 of
    [I-D.ietf-vcarddav-vcardrev].

4.9. Admittance Info

    Description:
          Information required to gain access to the resource.

    ValueType:
          Object value.

4.9.1. LDAP ObjectClass Definition

        (1.3.6.1.1.x.1.2
          NAME 'AdmittanceInfo'
          DESC 'Calendar Resource Admittance Info Class'
          SUP CalendarResource
          AUXILIARY
          MUST (admittanceurl)
          MAY (restricted))

4.9.2. Restricted Access

    Description:
            Is access to the resource restricted? Can be used for a
    resource scheduling query.

    ValueType:

           Boolean value.

    Example value:
             True

4.9.2.1. LDAP Attribute Definition

      (1.3.6.1.1.x.0.4
        NAME 'Restricted'
        DESC 'Access Restricted'
        EQUALITY booleanMatch
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.7)

4.9.2.2. VCard Property Definition

           Purpose: To specify if access is restricted or not.

           Type value: A single boolean value.

           Cardinality: (0,1)

          ABNF:
          RESTRICTEDACCESS-param = ; no parameter allowed
          RESTRICTEDACCESS-value = boolean

          Example:
            RESTRICTEDACCESSS:True

4.9.3. Admittance Info URL

    Description:
             URL pointing to complete information for accessing the
    resource including getting accessibility rights, special entrances,
    and so on.   Not required for a resource scheduling query.

    ValueType:
             URL value.

    Example value:
             http://www.example.com/room1_admittance.html

4.9.3.1. LDAP Attribute Definition

```
      ( 1.3.6.1.1.x.0.5
        NAME 'AdmittanceURL'
        DESC 'Cal Resource Admittance Info URL'
        EQUALITY caseIgnoreIA5Match
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
```

4.9.3.2. VCard Property Definition

          Purpose: To specify URL pointing to Admission
   Information.

             Type value: URI.

             Cardinality: (0,n)

          ABNF:
          ADMISSIONINFO-param = "VALUE=uri" / any-param
          ADMISSIONINFO-value = uri

          Example:
            ADMISSIONINFO:http://www.example.com/
   room1_admittance.html

4.10. Accessibility

   Description:
          Special resource accessibility info for the physically
   disabled. Not required for a resource scheduling query.

   ValueType:
          URL value.

   Example value:
          http://www.example.com/room1_specialaccess.html

4.10.1. LDAP Attribute Definition

```
      ( 1.3.6.1.1.x.0.6
        NAME 'AccessabilityURL'
        DESC 'Cal Resource Accessability Info URL'
        EQUALITY caseIgnoreIA5Match
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
```

4.10.2. VCard Property Definition

          Purpose: To specify URL pointing to Disabled Access
   Information.

          Type value: URI.

          Cardinality: (0,n)

          ABNF:
          ACCESSABILITYINFO-param = "VALUE=uri" / any-param
          ACCESSABILITYINFO-value = uri

          Example:
            ACCESSABILITYINFO:http://www.example.com/
    room1_specialaccess.html

4.11. Capacity

   Description:
         Capacity of the resource. Can be used for a resource
   scheduling query.

   ValueType:
         Integer.

   Example value:
          10

4.11.1. LDAP Attribute Definition

       (1.3.6.1.1.x.0.7
         NAME 'Capacity'
         DESC 'Cal Resource Capacity'
         EQUALITY caseIgnoreIA5Match
         SYNTAX 1.3.6.1.4.1.1466.115.121.1.27)

4.11.2. VCard Property Definition

           Purpose: To specify Capacity Information.

           Type value: integer.

           Cardinality: (0,n)

          ABNF:
          CAPACITY-param = "VALUE=integer" / any-param
          CAPACITY-value = integer

          Example:
            CAPACITY:10

4.12. Inventory Info

   Description:
         Information on resources available as part of this resource.

   ValueType:
         Object value.

4.12.1. LDAP ObjectClass Definition

      (1.3.6.1.1.x.1.3
        NAME 'InventoryInfo'
        DESC 'Calendar Resource Inventory Info Class'
        SUP CalendarResource
        AUXILIARY
        MAY (inventorylist $ inventoryurl))

4.12.2. Inventory List

   Description:
         List of resources available as part of this resource. Can be
   used for a resource scheduling query.

   ValueType:
         String value. One or more text values separated by a COMMA
   character.

   Example value:
         Printer, Projector

4.12.2.1. LDAP Attribute Definition

      (1.3.6.1.1.x.0.8
        NAME 'InventoryList'
        DESC 'Inventory List'
        EQUALITY caseIgnoreIA5Match
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.26)

4.12.2.2. VCard Property Definition

            Purpose: List the resources available as part of this
   resource.

            Type value: One or more text values separated by a COMMA
   character   (ASCII decimal 44).

            Cardinality: (0,n)

            ABNF:
            INVENTORYLIST-param = "VALUE=text" / any-param
            INVENTORYLIST-value = text

            Example:
              INVENTORYLIST:projector, phone

4.12.3.   Inventory URL

   Description:
         A URL pointing to other resource URLs related to this
   resource. Not required for a resource scheduling query.

   ValueType:
         URL value.

   Example value:
         http://www.example.com/room1_inventory.html

4.12.3.1.   LDAP Attribute Definition

      (1.3.6.1.1.x.0.9
        NAME 'InventoryURL'
        DESC 'Cal Resource Inventory Info URL'
        EQUALITY caseIgnoreIA5Match
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.26)

4.12.3.2.   VCard Property Definition

            Purpose: To specify URL pointing to Inventory
   Information.

            Type value: URI.

            Cardinality: (0,n)

            ABNF:
            INVENTORYURL-param = "VALUE=uri" / any-param
            INVENTORYURL-value = uri

            Example:
              INVENTORYURL:http://www.example.com/room1_inventory.html

4.13. Owner Info

   Description:
        Complete information on the owners of the resource. An owner
   is anyone who has complete authority over the resource, from naming
   to overall availability.   Not required for a resource
   scheduling query.

   ValueType:
        URL value.

   Example value:
        http://www.example.com/room1_ownerinfo.html

4.13.1. LDAP Attribute Definition

        owner attribute as defined in Section 2.21 of [RFC4519].

4.13.2. VCard Property Definition

           Purpose: To specify URL pointing to Resource Owner
   Information.

          Type value: URI.

          Cardinality: (0,n)

         ABNF:
         RESOURCEOWNERINFO-param = "VALUE=uri" / any-param
         RESOURCEOWNERINFO-value = uri

         Example:
           RESOURCEOWNERINFO:http://www.example.com/room1_owner.vcf

4.14. Resource Manager Info

   Description:
        Information on the managers of the resource. A manager is
   someone responsible for the day-to-day up keep of the resource. Not
   required for a resource scheduling query.

   ValueType:
        URL value.

   Example value:
        http://www.example.com/room1_managerinfo.html

4.14.1. LDAP Attribute Definition

```
     ( 1.3.6.1.1.x.0.10
       NAME 'ResourceManager'
       DESC 'Cal Resource Manager Info'
       EQUALITY caseIgnoreIA5Match
       SYNTAX 1.3.6.1.4.1.1466.115.121.1.12 )
```

4.14.2. VCard Property Definition

           Purpose: To specify URL pointing to Resource Manager
   Information.

            Type value: URI.

            Cardinality: (0,n)

           ABNF:
           RESOURCEMANAGERINFO-param = "VALUE=uri" / any-param
           RESOURCEMANAGERINFO-value = uri

           Example:
             RESOURCEMANAGERINFO:http://www.example.com/
   room1_manager.vcf

4.15. Calendar URL

   Description:
         URL to access calendar data of the resource. Not required for
   a resource scheduling query.

   ValueType:
         URL value.

   Example value:
         http://www.example.com/calendar/home/Room1/calendar/

4.15.1. LDAP Attribute Definition

         Calendar access attribute calCAPURI as defined in Section
   2.4.4.3 and calOtherCAPURIs as defined in Section 2.4.4.7 of
   [RFC2739] respectively.

4.15.2. VCard Property Definition

         Calendar access property CAPURI as defined in Section 2.3.3 of
   [RFC2739].

4.16. FreeBusy URL

   Description:
         URL to read freebusy information of the resource's calendar.
   Not required for a resource scheduling query.

   ValueType:
         URL value.

   Example value:
         http://www.example.com/freebusy/home/Room1/

4.16.1. LDAP Attribute Definition

         Calendar access attribute calFBURL as defined in Section
   2.4.4.2 and calOtherFBURLs as defined in Section 2.4.4.6 of [RFC2739]
   respectively.

4.16.2. VCard Property Definition

         FBURL attribute as defined in Section 2.3.1 of [RFC2739] and
   further explained in Section 7.9.1 of [I-D.ietf-vcarddav-vcardrev].

4.17. Scheduling Address

   Description:
         Address used for scheduling the resource by a Calendaring and
   Scheduling service. Not required for a resource scheduling query.

   ValueType:
         String value.

   Example value:
         mailto:room1@example.com

4.17.1. LDAP Attribute Definition

         Scheduling Address attribute calCalAdrURI as defined in
   Section 2.4.4.4 and calOtherCalAdrURIs as defined in Section 2.4.4.8
   of [RFC2739] respectively.   This is the address that would be
   used by a Scheduling and Calendaring application to schedule the
   resource.   Its value must be a uri string, in most cases a
   mailto: uri. The mail attribute value of the resource should be used
   for scheduling, in the absence of this attribute.

4.17.2. VCard Property Definition

        Scheduling Address property CALADRURI as defined in Section
   2.3.2 [RFC2739] and further explained in Section 7.9.2 of
   [I-D.ietf-vcarddav-vcardrev].   This is the address that would
   be used by a Scheduling and Calendaring application to schedule the
   resource.   Its value must be a uri string, in most cases a
   mailto: uri. The EMAIL property value of the resource should be used
   for scheduling, in the absence of this attribute.

4.18. Time Zone

   Description:
        TimeZone Identifier for the timezone the resource is in. Not
   required for a resource scheduling query.

   ValueType:
        String value.

   Example value:
        America/New_York

4.18.1. LDAP Attribute Definition

       (1.3.6.1.1.x.0.11
         NAME 'TimeZoneID'
         DESC 'Cal Time Zone ID'
         EQUALITY caseIgnoreIA5Match
         SYNTAX 1.3.6.1.4.1.1466.115.121.1.26)

4.18.2. VCard Property Definition

        TimeZone property TZ as defined in Section 7.5.1 of
   [I-D.ietf-vcarddav-vcardrev].

4.19. Multiple Bookings

   Description:
        Number of simultaneous bookings allowed. Not required for a
   resource scheduling query.

   ValueType:
        Integer value.
        Value of 0 indicates no limits.

   Example value:
        1

4.19.1. LDAP Attribute Definition

      (1.3.6.1.1.x.0.12
        NAME 'Multiplebookings'
        DESC 'Cal Num Bookings Allowed'
        EQUALITY integerMatch
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.27)

4.19.2. VCard Property Definition

           Purpose: To specify number of simultaneous bookings
   allowed.

           Type value: integer.

           Cardinality: (0,1)

          ABNF:
          MULTIBOOK-param = "VALUE=integer" / any-param
          MULTIBOOK-value = integer

          Example:
            MULTIBOOK:10

4.20. Maximum Instances

   Description:
        Maximum number of instances of an event, the resource can be
   scheduled for from NOW. Not required for a resource scheduling
   query.

   ValueType:
        Integer value.
        Value of 0 indicates no limits.

   Example value:
        60

4.20.1. LDAP Attribute Definition

      (1.3.6.1.1.x.0.13
        NAME 'MaxInstances'
        DESC 'Cal Maximum Instances allowed'
        EQUALITY integerMatch
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.27)

4.20.2. VCard Property Definition

        Purpose: To specify maximum number of instances of an
   event, the resource can be scheduled for from NOW.

        Type value: integer.

        Cardinality: (0,1)

       ABNF:
       MAXINSTANCES-param = "VALUE=integer" / any-param
       MAXINSTANCES-value = integer

       Example:
         MAXINSTANCES:10

4.21. BookingWindow Start

   Description:
        Defines how much time in advance the resource can be booked.
   That is, what is the earliest opportunity for booking a resource for
   a given date and time.   Not required for a resource scheduling
   query.

   ValueType: Duration value.
        The format is based on the   [ISO.8601.2004]
        duration representation basic format with designators for
   the duration of time.   The format can represent nominal
   durations (weeks and days) and accurate   durations (hours,
   minutes, and seconds).

   Example value:
        -P3M

4.21.1. LDAP Attribute Definition

      (1.3.6.1.1.x.0.14
        NAME 'BookingWindowStart'
        DESC 'Cal Booking Window Start'
        EQUALITY caseIgnoreIA5Match
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.26)

4.21.2. VCard Property Definition

        Purpose: To specify how much time in advance the resource
   can be booked.

        Type value: duration.

          The format is based on the   [ISO.8601.2004]
          duration representation basic format with designators for
   the duration of time.   The format can represent nominal
   durations (weeks and days) and accurate   durations (hours,
   minutes, and seconds).

          Cardinality: (0,1)

          ABNF:
          BOOKINGSTART-param = "VALUE=text" / any-param
          BOOKINGSTART-value = text

          Example:
            BOOKINGSTART:-P3M

4.22. BookingWindow End

   Description:
          Defines how much time in advance the resource booking is
   closed. That is, what is the latest opportunity for booking a
   resource for a given date or time.   Not required for a resource
   scheduling query.   BookingWindow Start and End together provide
   the window of time a resource can be booked relative to the start of
   the event.

   ValueType: Duration value.
          The format is based on the   [ISO.8601.2004]
          duration representation basic format with designators for
   the duration of time.   The format can represent nominal
   durations (weeks and days) and accurate   durations (hours,
   minutes, and seconds).

   Example value:
        -P5D

4.22.1. LDAP Attribute Definition

      (1.3.6.1.1.x.0.15
        NAME 'BookingWindowEnd'
        DESC 'Cal Booking Window End'
        EQUALITY caseIgnoreIA5Match
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.26)

4.22.2. VCard Property Definition

          Purpose: To specify how much time in advance the resource
   booking is closed.

          Type value: duration.
          The format is based on the   [ISO.8601.2004]
          duration representation basic format with designators for
the duration of time.   The format can represent nominal
durations (weeks and days) and accurate   durations (hours,
minutes, and seconds).

          Cardinality: (0,1)

          ABNF:
          BOOKINGEND-param = "VALUE=text" / any-param
          BOOKINGEND-value = text

          Example:
            BOOKINGEND:-P5D

4.23. Scheduling Approval Info

   Description:
          Information regarding approval of a scheduling request to the
   resource.

   ValueType:
          Object value.

4.23.1. LDAP ObjectClass Definition

      (1.3.6.1.1.x.1.4
        NAME 'SchedApprovalInfo'
        DESC 'Calendar Sched Approval Class'
        SUP CalendarResource
        AUXILIARY
        MAY(autoaccept $ approvalinfourl $ schedadmin))

4.23.2. Auto accept

   Description:
            No approval required. Auto accepted. Not required for a
   resource scheduling query.

   ValueType:
            Boolean value.

   Example value:
            True

4.23.2.1. LDAP Attribute Definition

```
     ( 1.3.6.1.1.x.0.16
       NAME 'Autoaccept'
       DESC 'Cal Scheduling auto accept'
       EQUALITY booleanMatch
       SYNTAX 1.3.6.1.4.1.1466.115.121.1.7 )
```

4.23.2.2. VCard Property Definition

          Purpose: To specify if invitations should be
   automatically accepted.

           Type value: Boolean.

           Cardinality: (0,1)

          ABNF:
          AUTOACCEPT-param = "VALUE=boolean" / any-param
          AUTOACCEPT-value = "TRUE" / "FALSE"

          Example:
            AUTOACCEPT:TRUE

4.23.3. Approval Info URL

   Description:
           URL pointing to complete information on scheduling request
   approval process for the resource.   Not required for a
   resource scheduling query.

   ValueType:
           URL value.

   Example value:
           http://www.example.com/room1_approval.html

4.23.3.1. LDAP Attribute Definition

```
     ( 1.3.6.1.1.x.0.17
       NAME 'ApprovalInfoURL'
       DESC 'Cal Sched Approval Info'
       EQUALITY caseIgnoreIA5Match
       SYNTAX 1.3.6.1.4.1.1466.115.121.1.26 )
```

4.23.3.2. VCard Property Definition

          Purpose: To specify URL pointing to Scheduling Approval
   Information.

            Type value: URI.

            Cardinality: (0,n)

          ABNF:
          APPROVALINFO-param = "VALUE=uri" / any-param
          APPROVALINFO-value = uri

          Example:
            APPROVALINFO:http://www.example.com/room1_approval.html

4.23.4. Scheduling Admin Contact

   Description:
          Contact information for the scheduling approvers, if
   approval required. Not required for a resource scheduling query.

   ValueType:
          URL value.

   Example value:
          http://www.example.com/SchedAdmin1.vcf

4.23.4.1. LDAP Attribute Definition

       (1.3.6.1.1.x.0.18
         NAME 'SchedAdmin'
         DESC 'Cal Sched Admin Info'
         EQUALITY caseIgnoreIA5Match
         SYNTAX 1.3.6.1.4.1.1466.115.121.1.12)

4.23.4.2. VCard Property Definition

          Purpose: To specify URL pointing to Scheduling Manager
   Information.

            Type value: URI.

            Cardinality: (0,n)

          ABNF:

```
            SCHEDADMININFO-param = "VALUE=uri" / any-param
            SCHEDADMININFO-value = uri

            Example:
               SCHEDADMININFO:http://www.example.com/SchedAdmin1.vcf
```

4.24. Cost

   Description:
         Scheduling costs for this resource.

   ValueType:
         Object value.

4.24.1. LDAP ObjectClass Definition

```
      ( 1.3.6.1.1.x.1.5
        NAME 'CalendarResourceCost'
        DESC 'Calendar Resource Cost Object Class'
        SUP CalendarResource
        AUXILIARY
        MAY (free $ costurl)
```

4.24.2. Free

   Description:
            No cost for using the resource. Can be used for a
   resource scheduling query.

   ValueType:
            Boolean value.

   Example value:
            True

4.24.2.1. LDAP Attribute Definition

```
      ( 1.3.6.1.1.x.0.19
        NAME 'Free'
        DESC 'Free or Priced resource'
        EQUALITY booleanMatch
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.7 )
```

4.24.2.2. VCard Property Definition

          Purpose: To specify if resource usage is free.

          Type value: A single boolean value.

          Cardinality: (0,1)

        ABNF:
        FREE-param = ; no parameter allowed
        FREE-value = boolean

        Example:
          FREE:True

4.24.3. Cost URL

   Description:
          URL pointing to complete pricing information for usage of
   the resource. Not required for a resource scheduling query.

   ValueType:
          URL value.

   Example value:
          http://www.example.com/cost.html

4.24.3.1. LDAP Attribute Definition

      (1.3.6.1.1.x.0.20
        NAME 'CostURL'
        DESC 'Cal Resource Cost Info'
        EQUALITY caseIgnoreIA5Match
        SYNTAX 1.3.6.1.4.1.1466.115.121.1.26)

4.24.3.2. VCard Property Definition

          Purpose: To specify URL pointing Resource Scheduling Cost
   Information.

          Type value: URI.

          Cardinality: (0,n)

        ABNF:
        COSTINFO-param = "VALUE=uri" / any-param
        COSTINFO-value = uri

          Example:
             COSTINFO:http://www.example.com/cost.html

4.25. ResourceNotes

   Description:
         Extra information on the resource. Not required for a
   resource scheduling query.

   ValueType:
         Text value.

   Example value:
         This is a special resource.

4.25.1. LDAP Attribute Definition

       (1.3.6.1.1.x.0.21
         NAME 'ResourceNotes'
         DESC 'Cal Resource Notes'
         EQUALITY caseIgnoreIA5Match
         SYNTAX 1.3.6.1.4.1.1466.115.121.1.26)

4.25.2. VCard Property Definition

         NOTE property as defined in Section 6.7.2 of
   [I-D.ietf-vcarddav-vcardrev].

5. Examples

5.1. LDAP Examples

5.1.1. Location Resource

```
dn: cn=Room One,ou=Engineering,dc=example,dc=com
objectclass: top
objectclass: calendarresource
objectclass: admittanceinfo
objectclass: inventoryinfo
objectclass: schedapprovalinfo
objectclass: calendarresourcecost
calresourcekind: location
uid: room1-id
cn: Room One
ou: Engineering
nickname: The One
description: Room 1 in Engineering Building X
categories: rooms
categories: engineering_resources
restricted: true
admittanceurl: http://www.example.com/room1_admittance.html
accessabilityurl: http://www.example.com/room1_specialaccess.html
capacity: 100
inventorylist:phone, projector
inventoryurl: http://www.example.com/room1_inventory.html
owner: cn=RoomOwner,ou=Engineering,dc=example,dc=com
resourcemanager: cn=RoomOwner,ou=Engineering,dc=example,dc=com
calcapuri: http://www.example.com/calendar/home/Room1/calendar/
calfburl: http://www.example.com/freebusy/home/Room1/
calcaladruri: mailto:room1@example.com
timezoneid: America/Los_Angeles
multiplebookings: 1
maxinstances: 10
bookingwindowstart:-P3M
bookingwindowend: -P3D
autoaccept: false
approvalinfourl: http://www.example.com/room1_approval.html
schedadmin: cn=RoomOwner,ou=Engineering,dc=example,dc=com
free: false
costurl: http://www.example.com/cost.html
resourcenotes: This is a special resource.
```

5.1.2. Role Resources Group

```
dn: cn=Drivers X,ou=Transportation,dc=example,dc=com
objectclass: top
objectclass: groupOfuniqueNames
objectclass: calendarresource
objectclass: schedapprovalinfo
objectclass: calendarresourcecost
calresourcekind: group
uid: driversX-id
cn: Driver One
ou: Transportation
nickname: The X
description: Drivers in the Transportation department driver pool X
categories: drivers
uniquemember: cn=Driver1,ou=Transportation,dc=example,dc=com
uniquemember: cn=Driver2,ou=Transportation,dc=example,dc=com
uniquemember: cn=Driver3,ou=Transportation,dc=example,dc=com
owner: cn=Transportation_Manager,ou=Transportation,dc=example,dc=com
calfburl: http://www.example.com/freebusy/home/DriversX/
calcaladruri: mailto:driversX@example.com
timezoneid: America/Los_Angeles
multiplebookings: 3
maxinstances: 10
bookingwindowstart:-P3M
bookingwindowend: -P3D
autoaccept: false
approvalinfourl: http://www.example.com/driversX_approval.html
schedadmin: cn=TransportationManager,ou=Transportation,dc=example,dc=com
free: false
costurl: http://www.example.com/driversXcost.html
resourcenotes: This is Driver Pool X with three drivers.
```

5.2. VCard Examples

5.2.1. Location Resource

```
   BEGIN:VCARD
   VERSION:4.0
   UID:urn:uuid:room1-id
   KIND: location
   FN: Room One
   ORG: Engineering
   NICKNAME: The One
   NOTE: Room 1 in Engineering Building X
   CATEGORIES: rooms
   CATEGORIES: engineering_resources
   RESTRICTED-ACCESS: true
   ADMISSIONINFO: http://www.example.com/room1_admittance.html
   ACCESSABILITYINFO: http://www.example.com/room1_specialaccess.html
   CAPACITY: 100
   INVENTORYLIST: phone, projector
   INVENTORYURL: http://www.example.com/room1_inventory.html
   RESOURCEOWNERINFO: http://www.example.com/ResOwner1.vcf
   RESOURCEMANAGERINFO: http://www.example.com/ResManager1.vcf
   CAPURI: http://www.example.com/calendar/home/Room1/calendar/
   FBURL: http://www.example.com/freebusy/home/Room1/
   CALADRURI: mailto:room1@example.com
   TZ: America/Los_Angeles
   MULTIBOOK: 1
   MAXINSTANCES: 10
   BOOKINGSTART:-P3M
   BOOKINGEND: -P3D
   AUTOACCEPT: false
   APPROVALINFO: http://www.example.com/room1_approval.html
   SCHEDADMININFO: http://www.example.com/SchedAdmin1.vcf
   FREE: false
   COSTINFO: http://www.example.com/cost.html
   END:VCARD
```

5.2.2. Role Resources Group

```
BEGIN:VCARD
VERSION:4.0
UID:urn:uuid:driverXPool-id
KIND: group
FN: Driver X Pool
ORG: Transportation
NICKNAME: The X Group
NOTE: Drivers in the Transportation department driver pool X
CATEGORIES: drivers
MEMBER:urn:uuid:driver1-id
MEMBER:urn:uuid:driver2-id
MEMBER:urn:uuid:driver3-id
RESOURCEOWNERINFO: http://www.example.com/DriversManager.vcf
FBURL: http://www.example.com/freebusy/home/DriversX/
CALADRURI: mailto:driversX@example.com
TZ: America/Los_Angeles
MULTIBOOK: 3
MAXINSTANCES: 10
BOOKINGSTART:-P3M
BOOKINGEND: -P3D
AUTOACCEPT: false
APPROVALINFO: http://www.example.com/driversX_approval.html
SCHEDADMININFO: http://www.example.com/DriversX_SchedAdmin.vcf
FREE: false
COSTINFO: http://www.example.com/driversXcost.html
END:VCARD
```

6. Security Considerations

        As this document only defines schema for representing resource
information for calendaring and scheduling   and does not refer
to the actual storage mechanism itself, or the calendaring and
scheduling protocol,   no special security considerations are
required as part of this document.

7. IANA Considerations

        A new IANA token 'resource', that can be used as a value
representing a Resource in a VCard,   as defined in
Section 4.1.2 needs to be registered.   In addition, the
following new VCard Properties need to be registered by IANA.

New VCard Properties Table:

```
+--------------------+--------------------------+
| VCard Property Name | VCard Property Definition |
+--------------------+--------------------------+
| RESTRICTEDACCESS   | Section 4.9.2.2          |
| ADMISSIONINFO      | Section 4.9.3.2          |
| SPECIALACCESS      | Section 4.10.2           |
| CAPACITY           | Section 4.11.2           |
| INVENTORYLIST      | Section 4.12.2.2         |
| INVENTORYINFO      | Section 4.12.3.2         |
| RESOURCEOWNER      | Section 4.13.2           |
| RESOURCEMANAGER    | Section 4.14.2           |
| MAXINSTANCE        | Section 4.20.2           |
| BOOKINGSTART       | Section 4.21.2           |
| BOOKINGEND         | Section 4.22.2           |
| AUTOACCEPT         | Section 4.23.2.2         |
| APPROVALINFO       | Section 4.23.3.2         |
| APPROVERINFO       | Section 4.23.4.2         |
| FREE               | Section 4.24.2.2         |
| COST               | Section 4.24.3.2         |
+--------------------+--------------------------+
```

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   within the Calendaring and Scheduling Consortium's Resource Technical
   Committee. The authors thank the participants of that group, and
   specifically the following individuals for contributing their ideas
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   Petit, and Jason Miller.

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