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## Management Information Base for the PINT Services Architecture

<[draft-ietf-pint-mib-03.txt](#)>

### Abstract

This memo describes a proposed MIB for the PINT Services Architecture.

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## **1. Introduction**

PINT services are an emerging set of new Internet based applications where voice (and fax) requests to the PSTN (Public Switched Telephone

Network) are carried over the Internet. [RFC 2458](#) [1] gives a good introduction to the (pre-standard) PINT architecture and services. It also has examples of some of the early implementations of pre-PINT.

This document defines a MIB which contains the elements for monitoring the performance of a PINT based service. The MIB consists of details of the four basic PINT services and their performance statistics measured under various criteria.

It is not the purpose of this MIB to enable management of the PINT networking elements. We are concerned only with the PINT specific performance parameters. While it is understood that PINT service performance is closely related to host and network performance, they are not addressed here.

## **2. The SNMP Management Framework**

The SNMP Management Framework presently consists of five major components:

- o An overall architecture, described in [RFC 2571](#) [2].
- o Mechanisms for describing and naming objects and events for the purpose of management. The first version of this Structure of Management Information (SMI) is called SMIV1 and described in [RFC 1155](#) [3], [RFC 1212](#) [4] and [RFC 1215](#) [5]. The second version, called SMIV2, is described in [RFC 2578](#) [6], [RFC 2579](#) [7] and [RFC 2580](#) [8].
- o Message protocols for transferring management information. The first version of the SNMP message protocol is called SNMPv1 and described in [RFC 1157](#) [9]. A second version of the SNMP message protocol, which is not an Internet standards track protocol, is called SNMPv2c and described in [RFC 1901](#) [10] and [RFC 1906](#) [11]. The third version of the message protocol is called SNMPv3 and described in [RFC 1906](#) [11], [RFC 2572](#) [12] and [RFC 2574](#) [13].
- o Protocol operations for accessing management information. The first set of protocol operations and associated PDU formats is described in [RFC 1157](#) [9]. A second set of protocol operations and associated PDU formats is described in [RFC 1905](#) [14].
- o A set of fundamental applications described in [RFC 2573](#) [15] and the view-based access control mechanism described in [RFC 2575](#)



[[16](#)].

A more detailed introduction to the current SNMP Management Framework can be found in [RFC 2570](#) [[17](#)].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. Objects in the MIB are defined using the mechanisms defined in the SMI.

This memo specifies a MIB module that is compliant to the SMIV2. A MIB conforming to the SMIV1 can be produced through the appropriate translations. The resulting translated MIB must be semantically equivalent, except where objects or events are omitted because no translation is possible (use of Counter64). Some machine-readable information in SMIV2 will be converted into textual descriptions in SMIV1 during the translation process. However, this loss of machine readable information is not considered to change the semantics of the MIB.

### **[3.](#) The need for PINT services monitoring MIB**

Traditionally voice (and fax) requests originate and terminate inside a PSTN network. This network is well known for robust handling of the requests, in terms of availability and security. However when the requests originate from the Internet there is a concern both on the part of the user as well as the provider about issues like reliable forwarding of the call requests to the PINT gateway under various network conditions, user/host authentication, secure handling of the user information etc. Performance and security management becomes all the more important where PINT services cross multiple administrative domains (or providers).

This MIB is an attempt to list the parameters that need to be monitored on an user, PINT client, PINT server and PINT gateway basis.

(PINT services, their invocation methods/protocols and security issues associated with the PINT architecture are discussed in detail in [[18](#)]).

### **[4.](#) PINT MIB - Overview**

Following is a list of some explanations on the MIB definitions that



we have chosen to construct.

- o The basic purpose of this MIB is to monitor the access to PINT services both from the performance and security point of view. Information may pertain to a certain user or his/her system (PINT client) or the system providing the PINT services (PINT server) or the PINT gateway that forwards the call to the PSTN network.
- o We propose to build the configuration table as an extension of the Application MIB - [RFC 2287](#) [19] using the augments construct. Server location and contact might be retrieved from the standard MIB-II sysLocation and sysContact objects. There is no need to replicate this information in the PINT MIB. However, the PINT administrator may be a different person than the sysadmin with global responsibilities, thus a pintSysContact object is defined.
- o We chose to monitor the gateway connections from the PINT server. While the agent runs in the PINT servers, the connections to the gateways might need to be monitored in order to understand what goes on. We placed them in a separate MIB group, and by using MODULE-COMPLIANCE clauses, agents that cannot implement this stuff will not be mandated to do it.
- o There is no traps definition in this preliminary proposal. Note that thresholding on counters is always possible by using a standard mechanism defined by the Remote Monitoring MIB, that can be referenced here. Some events that may be defined by using this mechanisms:
  - \* continuous login/authentication failure or refusal from a particular client or user
  - \* nuisance call - repeated calls (within a specified period) to a number originating from the same user
- o The client performance and user performance tables may be rather resource demanding for an agent implementation. In some MIBs, like the Remote Monitoring (RMON) MIBs, control mechanisms were built in order to activate those statistics on demand. If needed, a sorting ('topN') mechanism can be designed, so that a sorted view of clients or users is presented for the high level



debugging.

- o We built a time-distribution trying to cover both short-lived, as well as longer sessions (1-10 secs, 10 secs - 1 min., 1-15 min., 15 mins-24 hours, longer).
- o PintServerClientAddress is defined as a SnmpAdminString. It may include an IPAddress and/or name, but we preferred to minimize the number of indices at this stage, and keep a human-readable format at the same time.
- o We define pintServerUserIdName as the UserId. This UserId needs to be unique across multiple PINT servers and gateways (depending on the architecture) and is mapped to the SessionId. One way to achieve this uniqueness is by appending clientId to the UserId string before sending to the PINT server. The SessionId could then be a combination of this new UserId and a timestamp.

## 5. Definitions

```
PINT-MIB DEFINITIONS ::= BEGIN
```

### IMPORTS

```
    OBJECT-TYPE, Counter32, MODULE-IDENTITY, mib-2
    FROM SNMPv2-SMI
    TEXTUAL-CONVENTION
    FROM SNMPv2-TC
    MODULE-COMPLIANCE, OBJECT-GROUP
    FROM SNMPv2-CONF
    SysApplInstallPkgIndex
    FROM SYSAPPL-MIB
    SnmpAdminString
    FROM SNMP-FRAMEWORK-MIB; -- RFC 2271 [20]
```

```
    pintMib MODULE-IDENTITY
        LAST-UPDATED "200007241525Z"
        ORGANIZATION "IETF PINT Working Group"
        CONTACT-INFO
            "
            Chairs:
```





Steve Bellovin  
E-mail: smb@research.att.com

Igor Faynberg  
E-mail: faynberg@lucent.com

Murali Krishnaswamy  
Postal: 3C-512, 101 Crawfords Corner Rd.  
Holmdel, NJ 07733  
Tel: +1 (732)949-3611  
FAX: +1 (732)949-3210  
E-mail: murali@lucent.com

Dan Romascanu  
Postal: Atidim Technology Park, Bldg 3  
Tel Aviv, Israel  
Tel: +972 3 6458414  
E-mail: dromasca@avaya.com

General Discussion: pint@lists.bell-labs.com  
To Subscribe: pint-request@lists.bell-labs.com  
In Body: subscribe your-email-address  
Archive: <http://www.bell-labs.com/mailling-lists/pint/>  
"

#### DESCRIPTION

"This MIB defines the objects necessary to monitor  
PINT Services"

REVISION "200007241525Z"

#### DESCRIPTION

"Initial version, published as RFC xxxx."

::= { mib-2 99999 } -- Not an IANA number

PintServiceType ::= TEXTUAL-CONVENTION

STATUS current

SYNTAX INTEGER {

r2C(1), -- Request-to-Talk  
r2F(2), -- Request-to-Fax  
r2FB(3), -- Request-to-Fax-Back  
r2HC(4) -- Request-to-Hear-Content  
}

DESCRIPTION



"This TC describes the type of a PINT service."

PintPerfStatPeriod ::= TEXTUAL-CONVENTION

STATUS current

SYNTAX INTEGER {  
    last30sec(1), -- Performance Statics for the last 30 sec  
    last15min(2), -- 15 min  
    last24Hr(3), -- 24 Hour  
    sinceReboot(4) -- Since the time the pint server was  
                    -- last rebooted  
}

DESCRIPTION

"This TC describes the statistics period of time.

Note that the values of the counters indexed with a value SinceReboot(4) can be potentially affected by a counter rollover. It is the responsibility of the application using this object to take into account that the counter has been zeroed each time it reached a value of (2\*\*32-1)."

pintServerConfig OBJECT IDENTIFIER ::= { pintMib 1 }  
pintServerMonitor OBJECT IDENTIFIER ::= { pintMib 2 }  
pintMibConformance OBJECT IDENTIFIER ::= { pintMib 3 }

-- pintServerConfig - PINT configuration MIB variables

pintReleaseNumber OBJECT-TYPE

SYNTAX SnmpAdminString

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"An indication of version of the PINT protocol supported  
by this agent."

::= { pintServerConfig 1 }

pintSysContact OBJECT-TYPE

SYNTAX SnmpAdminString

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Contact information related to the administration of the PINT  
services."

::= { pintServerConfig 2 }

pintApplInstallPkgTable OBJECT-TYPE



SYNTAX       SEQUENCE OF PintApplInstallPkgEntry

MAX-ACCESS   not-accessible

STATUS       current

DESCRIPTION

"Table describing the PINT applications that are installed."

::= { pintServerConfig 3 }

pintApplInstallPkgEntry OBJECT-TYPE

SYNTAX       PintApplInstallPkgEntry

MAX-ACCESS   not-accessible

STATUS       current

DESCRIPTION

"Entries per PINT Application."

AUGMENTS { sysApplInstallPkgIndex }

::= { pintApplInstallPkgTable 1 }

PintApplInstallPkgEntry ::= SEQUENCE {

  pintApplInstallPkgDescription   SnmpAdminString

}

pintApplInstallPkgDescription OBJECT-TYPE

SYNTAX       SnmpAdminString

MAX-ACCESS   read-only

STATUS       current

DESCRIPTION

"Textual description of the installed PINT application."

::= { pintApplInstallPkgEntry 1 }

pintRegisteredGatewayTable OBJECT-TYPE

SYNTAX       SEQUENCE OF PintRegisteredGatewayEntry

MAX-ACCESS   not-accessible

STATUS       current

DESCRIPTION

"Table describing the registered gateway applications."

::= { pintServerConfig 4 }

pintRegisteredGatewayEntry OBJECT-TYPE

SYNTAX       PintRegisteredGatewayEntry

MAX-ACCESS   not-accessible

STATUS       current

DESCRIPTION

"Entries per Registered Gateway Application."

AUGMENTS { sysApplInstallPkgIndex, pintRegisteredGatewayName }

::= { pintRegisteredGatewayTable 1 }

pintRegisteredGatewayEntry ::= SEQUENCE {

  pintRegisteredGatewayName       SnmpAdminString



```
        pintRegisteredGatewayDescription SnmpAdminString
    }

pintRegisteredGatewayName OBJECT-TYPE
    SYNTAX      SnmpAdminString
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Name of the registered gateway."
    ::= { pintRegisteredGatewayEntry 1 }

pintRegisteredGatewayDescription OBJECT-TYPE
    SYNTAX      SnmpAdminString
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Textual description of the registered gateway."
    ::= { pintRegisteredGatewayEntry 2 }

-- pintServerMonitor - PINT monitoring statistics MIB variables

pintServerGlobalPerf      OBJECT IDENTIFIER ::= {pintServerMonitor 1 }
pintServerClientPerf      OBJECT IDENTIFIER ::= {pintServerMonitor 2 }
pintServerUserIdPerf      OBJECT IDENTIFIER ::= {pintServerMonitor 3 }
pintServerGatewayPerf     OBJECT IDENTIFIER ::= {pintServerMonitor 4 }

pintServerGlobalStatsTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF PintServerGlobalStatsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Table displaying the monitored global server statistics."
    ::= { pintServerGlobalPerf 1 }

pintServerGlobalStatsEntry OBJECT-TYPE
    SYNTAX      PintServerGlobalStatsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Entries in the global statistics table.
        One entry is defined for each monitored service type and
        performance statistics collection period."
    INDEX {pintServerServiceTypeIndex, pintServerPerfStatPeriodIndex}
    ::= { pintServerGlobalStatsTable 1 }

PintServerGlobalStatsEntry ::= SEQUENCE {
```





```
pintServerServiceTypeIndex          PintServiceType,
pintServerPerfStatPeriodIndex        PintPerfStatPeriod,
pintServerGlobalCallsReceived        Counter32,
pintServerGlobalSuccessfulCalls      Counter32,
pintServerGlobalDisconnectedCalls    Counter32,
pintServerGlobalDisconnectedClientUserAuthorizationFailureCalls
                                     Counter32,
pintServerGlobalDisconnectedServerProblemCalls Counter32,
pintServerGlobalDisconnectedGatewayProblemCalls Counter32
}
```

```
pintServerServiceTypeIndex OBJECT-TYPE
    SYNTAX      PintServiceType
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The unique identifier of the monitored service."
 ::= { pintServerGlobalStatsEntry 1 }
```

```
pintServerPerfStatPeriodIndex OBJECT-TYPE
    SYNTAX      PintPerfStatPeriod
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Time period for which the performance statistics are requested
         from the pint server."
 ::= { pintServerGlobalStatsEntry 2 }
```

```
pintServerGlobalCallsReceived OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of received global calls."
 ::= { pintServerGlobalStatsEntry 3 }
```

```
pintServerGlobalSuccessfulCalls OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of global successful calls."
 ::= { pintServerGlobalStatsEntry 4 }
```

```
pintServerGlobalDisconnectedCalls OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS  read-only
```



```
    STATUS      current
    DESCRIPTION
    "Number of global disconnected (failed) calls."
 ::= { pintServerGlobalStatsEntry 5 }
```

```
pintServerGlobalDisconnectedClientUserAuthorizationFailureCalls
OBJECT-TYPE
```

```
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
    "Number of global calls that were disconnected because of client
    or user authorization failure."
 ::= { pintServerGlobalStatsEntry 6 }
```

```
pintServerGlobalDisconnectedServerProblemCalls OBJECT-TYPE
```

```
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
    "Number of global calls that were disconnected because of
    server problems."
 ::= { pintServerGlobalStatsEntry 7 }
```

```
pintServerGlobalDisconnectedGatewayProblemCalls OBJECT-TYPE
```

```
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
    "Number of global calls that were disconnected because of
    gateway problems."
 ::= { pintServerGlobalStatsEntry 8 }
```

```
pintServerClientStatsTable      OBJECT-TYPE
```

```
    SYNTAX      SEQUENCE OF PintServerClientStatsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
    "Table displaying the monitored server client statistics."
 ::= { pintServerClientPerf 1 }
```

```
pintServerClientStatsEntry OBJECT-TYPE
```

```
    SYNTAX      PintServerClientStatsEntry
```



MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION

"Entries in the client server statistics table.

One entry is defined for each client identified by name,  
monitored service type and performance statistics collection  
period."

INDEX {pintServerClientAddress, pintServerServiceTypeIndex,  
pintServerPerfStatPeriodIndex}  
::= { pintServerClientStatsTable 1 }

PintServerClientStatsEntry ::= SEQUENCE {  
pintServerClientAddress SnmpAdminString,  
pintServerClientCallsReceived Counter32,  
pintServerClientSuccessfulCalls Counter32,  
pintServerClientDisconnectedCalls Counter32,  
pintServerClientDisconnectedClientAuthorizationFailureCalls  
Counter32,  
pintServerClientDisconnectedEgressFacilityProblemCalls Counter32  
}

pintServerClientAddress OBJECT-TYPE

SYNTAX SnmpAdminString  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION

"The unique identifier of the monitored client

identified by its address represented as as a string."

::= { pintServerClientStatsEntry 1 }

pintServerClientCallsReceived OBJECT-TYPE

SYNTAX Counter32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION

"Number of calls received from the specific client."

::= { pintServerClientStatsEntry 2 }

pintServerClientSuccessfulCalls OBJECT-TYPE

SYNTAX Counter32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION

"Number of calls from the client successfully completed."

::= { pintServerClientStatsEntry 3 }



pintServerClientDisconnectedCalls OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Number of calls received from the client, and that were disconnected (failed)."

::= { pintServerClientStatsEntry 4 }

pintServerClientDisconnectedClientAuthorizationFailureCalls

OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Number of calls from the client that were disconnected because of client authorization failure."

::= { pintServerClientStatsEntry 5 }

pintServerClientDisconnectedEgressFacilityProblemCalls OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Number of calls from the client that were disconnected because of egress facility problems."

::= { pintServerClientStatsEntry 6 }

pintServerUserIdStatsTable OBJECT-TYPE

SYNTAX SEQUENCE OF PintServerUserIdStatsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Table displaying the monitored Pint service user statistics."

::= { pintServerUserIdPerf 1 }

pintServerUserIdStatsEntry OBJECT-TYPE

SYNTAX PintServerUserIdStatsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Entries in the user statistics table.

One entry is defined for each user identified by name, each monitored service type and performance statistics collection period."





```
INDEX {pintServerUserIdName, pintServerServiceTypeIndex,
      pintServerPerfStatPeriodIndex}
 ::= { pintServerUserIdStatsTable 1 }
```

```
PintServerUserIdStatsEntry      ::= SEQUENCE {
pintServerUserIdName            UserIdName,
pintServerUserIdCallsReceived   Counter32,
pintServerUserIdSuccessfulCalls Counter32,
pintServerUserIdDisconnectedCalls Counter32,
pintServerUserIdDisconnectedUserIdAuthorizationFailureCalls
                                Counter32,
pintServerUserIdDisconnectedEgressFacilityProblemCalls Counter32
}
```

```
pintServerUserIdName OBJECT-TYPE
    SYNTAX      SnmpAdminString
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "The unique identifier of the monitored user
        identified by its name."
    ::= { pintServerUserIdStatsEntry 1 }
```

```
pintServerUserIdCallsReceived OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Number of calls received from the specific user."
    ::= { pintServerUserIdStatsEntry 2 }
```

```
pintServerUserIdSuccessfulCalls OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Number of calls from the user successfully completed."
    ::= { pintServerUserIdStatsEntry 3 }
```

```
pintServerUserIdDisconnectedCalls OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Number of calls received from the user that were
        disconnected (failed)."
    ::= { pintServerUserIdStatsEntry 4 }
```



pintServerUserIdDisconnectedUserIdUserAuthorizationFailureCalls

OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Number of calls from the user that were disconnected because of user authorization failure."

::= { pintServerUserIdStatsEntry 5 }

pintServerUserIdDisconnectedEgressFacilityProblemCalls OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Number of calls from the user that were disconnected because of egress facility problems."

::= { pintServerUserIdStatsEntry 6 }

pintServerGatewayStatsTable OBJECT-TYPE

SYNTAX SEQUENCE OF PintServerGatewayStatsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Table displaying the monitored gateway statistics."

::= { pintServerGatewayPerf 1 }

pintServerGatewayStatsEntry OBJECT-TYPE

SYNTAX PintServerGatewayStatsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Entries in the gateway table.

One entry is defined for each gateway identified by name, each monitored service type and performance statistics collection period."

INDEX { pintRegisteredGatewayName, pintServerServiceTypeIndex,  
pintServerPerfStatPeriodIndex

::= { pintServerGatewayStatsTable 1 }

PintServerGatewayStatsEntry ::= SEQUENCE {

pintServerGatewayCallsReceived Counter32,

pintServerGatewaySuccessfulCalls Counter32,

pintServerGatewayDisconnectedCalls Counter32

}



## pintServerGatewayCallsReceived OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Number of calls received at the specified gateway."

::= { pintServerGatewayStatsEntry 1 }

## pintServerGatewaySuccessfulCalls OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Number of calls successfully completed at the specified gateway."

::= { pintServerGatewayStatsEntry 2 }

## pintServerGatewayDisconnectedCalls OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Number of calls that were disconnected (failed) at the specified gateway."

::= { pintServerGatewayStatsEntry 3 }

--

-- Notifications Section

-- (none defined)

--

--

-- Conformance Section

--

pintMibCompliances OBJECT IDENTIFIER ::= { pintMibConformance 1 }

pintMibGroups OBJECT IDENTIFIER ::= { pintMibConformance 2 }

## pintMibCompliance MODULE-COMPLIANCE

STATUS current

DESCRIPTION

"Describes the requirements for conformance to the  
PINT MIB."

MODULE -- this module

MANDATORY-GROUPS { pintMibConfigGroup, pintMibMonitorGroup }

::= { pintMibCompliances 1 }



## pintMibConfigGroup OBJECT-GROUP

## OBJECTS {

pintReleaseNumber,  
pintSysContact,  
pintApplInstallPkgDescription,  
pintRegisteredGatewayName,  
pintRegisteredGatewayDescription

}

STATUS current

## DESCRIPTION

"A collection of objects providing configuration  
information

for a PINT Server."

::= { pintMibGroups 1 }

## pintMibMonitorGroup OBJECT-GROUP

## OBJECTS {

pintServerServiceTypeIndex,  
pintServerPerfStatPeriodIndex,  
pintServerGlobalCallsReceived,  
pintServerGlobalSuccessfulCalls,  
pintServerGlobalDisconnectedCalls,  
pintServerGlobalDisconnectedClientUserAuthorizationFailureCalls,  
pintServerGlobalDisconnectedServerProblemCalls,  
pintServerGlobalDisconnectedGatewayProblemCalls,  
pintServerClientAddress,  
pintServerClientCallsReceived,  
pintServerClientSuccessfulCalls,  
pintServerClientDisconnectedCalls,  
pintServerClientDisconnectedClientAuthorizationFailureCalls,  
pintServerClientDisconnectedEgressFacilityProblemCalls,  
pintServerUserIdName,  
pintServerUserIdCallsReceived,  
pintServerUserIdSuccessfulCalls,  
pintServerUserIdDisconnectedCalls,  
pintServerUserIdDisconnectedUserIdAuthorizationFailureCalls,  
pintServerUserIdDisconnectedEgressFacilityProblemCalls,  
pintServerGatewayCallsReceived,  
pintServerGatewaySuccessfulCalls,  
pintServerGatewayDisconnectedCalls

}

STATUS current

## DESCRIPTION

"A collection of objects providing monitoring  
information

for a PINT Server."

::= { pintMibGroups 2 }





END

## **6. Acknowledgements**

The authors would like to thank Igor Faynberg for his encouragement to produce this work.

## **7. Security Considerations**

There is only one management object defined in this MIB that has a MAX-ACCESS clause of read-write (pintSysContact). There are no read-create objects. This read-write object may be considered sensitive or vulnerable in some network environments. The support for SET operations in a non-secure environment without proper protection can have a negative effect on network operations.

There are a number of managed objects in this MIB that may contain information that may be sensitive from a business perspective. One could be the customer identification (UserIdName). Also information on PINT services performance might itself be need to be guarded. It is thus important to control even GET access to these objects and possibly to even encrypt the values of these object when sending them over the network via SNMP. Not all versions of SNMP provide features for such a secure environment.

SNMPv1 by itself is not a secure environment. Even if the network itself is secure (for example by using IPsec), even then, there is no control as to who on the secure network is allowed to access and GET/SET (read/change/create/delete) the objects in this MIB.

It is recommended that the implementers consider the security features as provided by the SNMPv3 framework. Specifically, the use of the User-based Security Model [RFC 2574](#) [13] and the View-based Access Control Model [RFC 2575](#) [16] is recommended.

It is then a customer/user responsibility to ensure that the SNMP entity giving access to an instance of this MIB, is properly configured to give access to the objects only to those principals (users) that have legitimate rights to indeed GET or SET (change/create/delete) them.

## **8. IANA Considerations**

All extensions to the values listed in this MIB must be done through



Standards Action processes as defined in [RFC 2434](#) [21].

## 9. References

- [1] H.Lu, et. al, "Toward the PSTN/Internet Inter-Networking --Pre-PINT Implementations", [RFC 2458](#), November 1998.
- [2] Wijnen, B., Harrington, D., and Presuhn, R., "An Architecture for Describing SNMP Management Frameworks", [RFC 2571](#), April 1999.
- [3] Rose, M. and McCloghrie, K., "Structure and Identification of Management Information for TCP/IP-based Internets", [RFC 1155](#), May 1990.
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- [6] McCloghrie, K., Perkins, D., and Schoenwaelder, J., "Structure of Management Information Version 2 (SMIv2)", [RFC 2578](#), April 1999.
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## **10. Authors' Addresses**

Murali Krishnaswamy  
Lucent Technologies  
3C-512, 101 Crawfords Corner Rd.  
Holmdel, NJ 07733  
Tel: +1 (732)949-3611  
Fax: +1 (732)949-3210  
E-mail: murali@lucent.com

Dan Romascanu  
Avaya Communication  
Atidim Technology Park, Bldg 3  
Tel Aviv, Israel  
Tel: +972 3 6458414  
E-mail: dromasca@lucent.com

