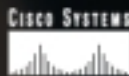




Voice Management for the Enterprise

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Customer Business Needs

- **Rapid and efficient voice network deployment is a must**
- **Businesses need comprehensive, yet easy-to-use tools to manage their growing voice networks**
- **Customers want to consolidate their network management gear/tools**
- **Enterprises want to provide effective network management tools to their managers to understand network usage**

Customer Operational Requirements

- What do I need to make my VoX work?
- How do I install/config/deploy for VoX?
- How do I keep my VoX services running?
- How do I know if I have problems?
- How do I fix them?
- How can I do accounting & billing for VoX?

TOP 5 Troubleshooting Requirements

Discover priority of voice traffic	4.5
Are my LAN/WAN traffic problems affecting my voice quality	4.5
Connectivity & voice loop back testing	4.5
Connectivity to specific HW & SW	4.4
Trace route of call end-to-end	4.2

New and Expansion Equipment Planning

- What HW is voice capable and what isn't
- What needs to be done to make voice work
- Current equipment capacity and utilization of current equip. links
- Check against Cisco recommendations for proper installation
- New equipment/links capacity/utilization estimator
- Network utilization baselining

New and Expansion Voice Application Planning

- What voice appl customers want
- How many copies of each appl are needed
- How many servers do I need to run the apps
- How do these apps interact with each other

How Do I Install/Config/Deploy Cisco VoX Networks?

- **Cisco HW & SW**
 - Inventory current Cisco voice-capable HW & SW
 - Install Cisco voice specific HW & SW
 - Configure Cisco voice related HW & SW
 - Configure Cisco voice specific HW & SW
 - Configuration validation tool for HW & SW
 - Integrate Cisco voice specific HW & SW

How Can I Do Accounting & Billing For My Voice System?

- **Integration w/current customer accounting and billing system**
- **Consolidation of multiple CDR sources (CM, routers)**
- **Cisco provide accounting and billing solution**

CiscoWorks2000 Family

**BUNDLE #1:
Routed WAN
Management
Solution**

**BUNDLE #2:
LAN
Management
Solution**

**BUNDLE #3:
Service
Management
Solution**

**BUNDLE #4:
Voice
Management
Solution**

Voice Deployment Needs

- **Easy to manage GUI interface**
- **Templates for bulk configuration**
- **Facilitate Dial plan creation and ongoing management**
- **Allow for easy network reconfiguration due to support personnel moves, facilities growth, company moves, etc.**

Integrated Management

- **Reduce proliferation of NMS applications**
- **Consolidate network management facilities and personnel**
- **Provide flexible tools that can easily integrate with each other to meet differing enterprise requirements**
- **Tools that are easy to use and interoperate efficiently**

Operational Support

- **Provide Graphical interfaces and Web-based access to enterprise end users**
- **Configurable reporting tools**
Easy to interpret reports

CiscoWorks 2000 Voice Manager 2.0 Highlights

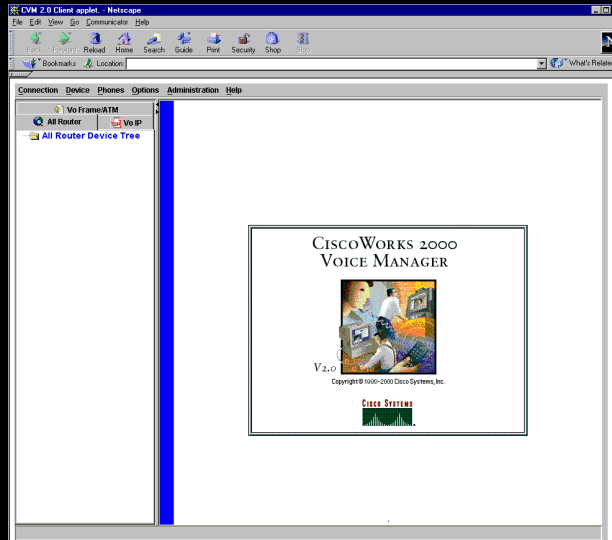
- **VoIP, VoFR and VoATM dial plan management**
- **Supports 1750, 3600, 2600, MC3810, 5300, 7200 & Gatekeeper Support**
- **Launching from CiscoWorks2000**
- **Enhanced Reporting**
- **Scalability/Performance improvements**

Configuration Management

- **Create dial plans for VoIP, VoFR, VoATM**
- **Discover/ query/ modify interfaces**
- **Bulk configuration**
- **Context-sensitive help**
- **Provides Router config management**

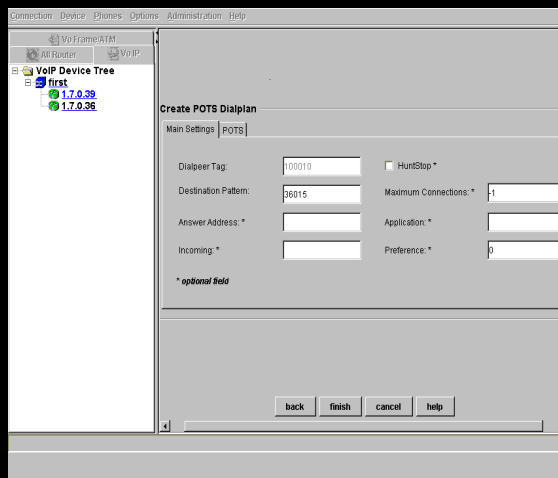
VoX Provisioning

- Support for VoFR, VoIP and VoATM configuration and management
- Easy to configure template based utility for all IOS based routers.



Dial Plan Configuration

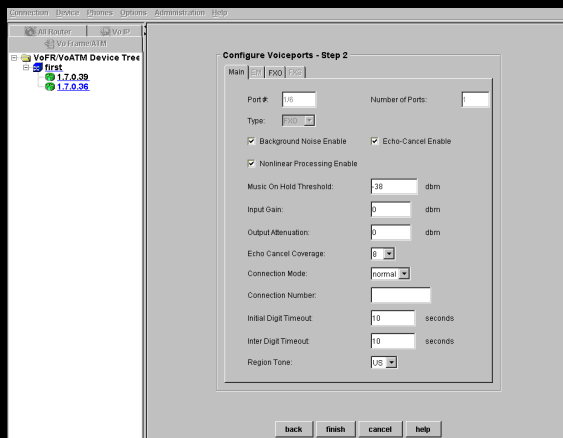
- Configuration of network dial plans for VoX installations
- Supports mixed Voice protocol deployments
- Provision gatekeeper dial plans where applicable
- Facilitates updates of dial addresses as changes occur



Fault Management

- **SNMP Trap Log Monitor**
- **Test Dial Path Integrity checks**
 - Cross-checking of dial plan configurations**
 - Connectivity test between routers**

Provision QOS levels



- **Permits individual port level configuration for quality of voice**
- **Configuration of parameters on a per port basis or can be assigned via templates for large scale deployments**

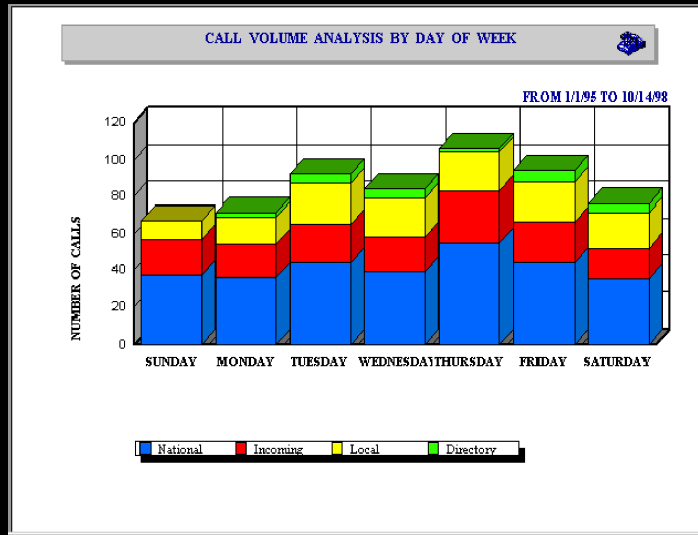
Performance Management

- **Quality of Voice Exception Report**
- **Call Volume Report**
 - Summarizes distribution of successful, failed, rejected, abandoned calls
- **DSP Info for 5300**
 - stats, alarms, and utilization

New Reports Module: Feature Advantages

- **Basic product comes with 15 reports**
 - 200+ reports available, custom report writer (both optionally available)
- **Cost Allocation: Control and recover network costs**
- **Supports multiple firewall, proxy server, and PBXs (optionally)**
- **Integrated Phone Activity (optional Web activity reports)**

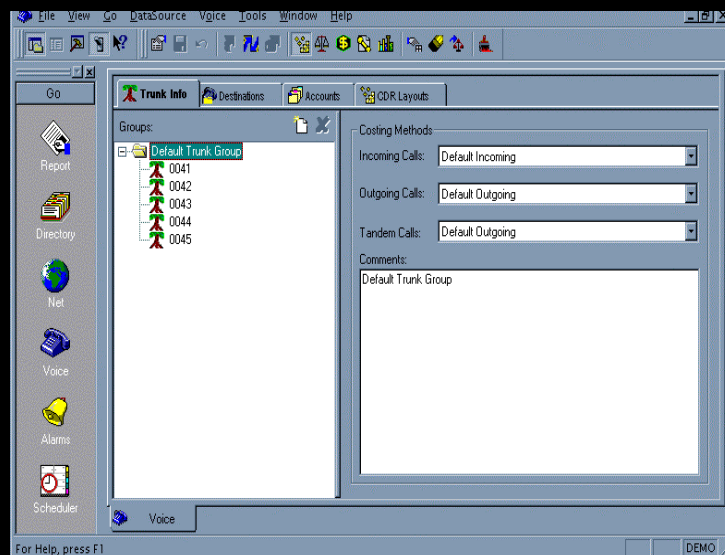
Call Accounting



- Call traffic granularity by user, time, group, etc.
- Summary and Drill down reporting on line.
- Integrates router-based calls and PBX database
- Provides rate information for least cost routing and bill back

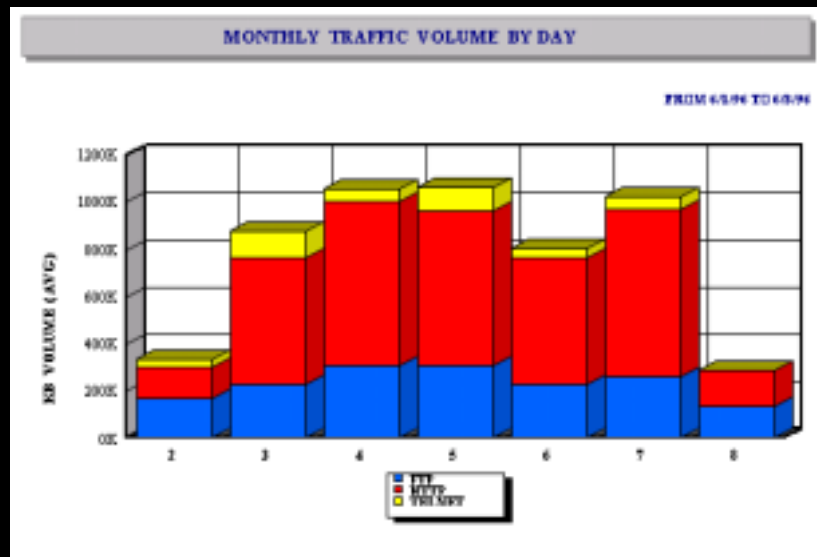
Flexible Cost Assignment

- “Point And Click” to assign trunks to groups
- Distinctive pricing per trunk group (assign tariff rates to different call types)
- Assign different costing methods

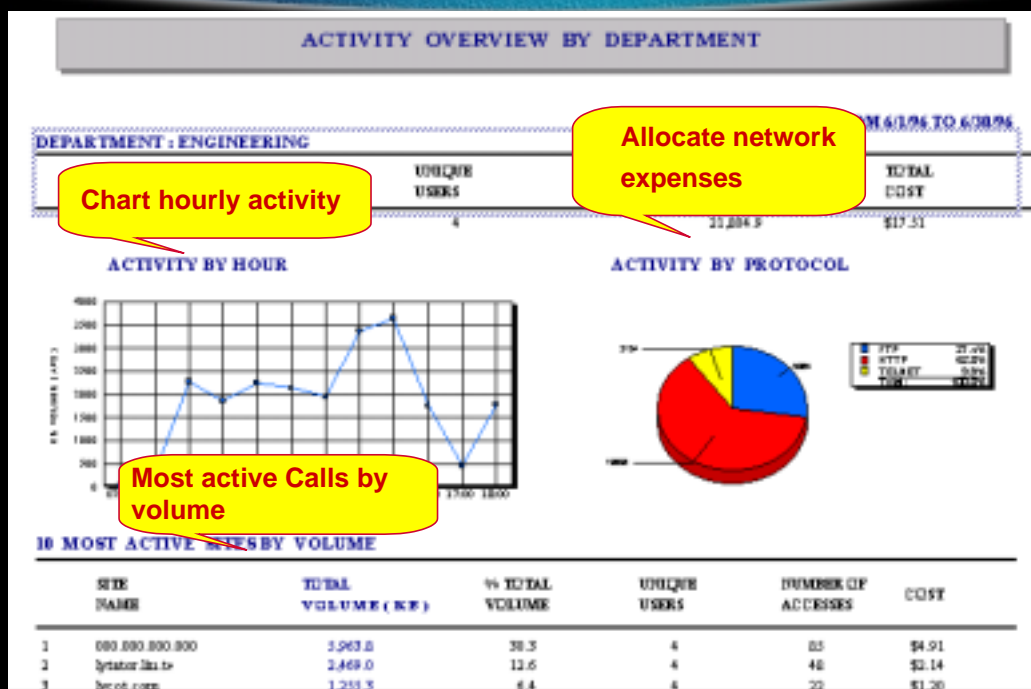


Traffic Volume

- Usage reports
- Bandwidth allocation
- Traffic views by user, protocol, destination, URL category, etc.
- User detail and summary reports



Consolidated Activity Reports and Summary



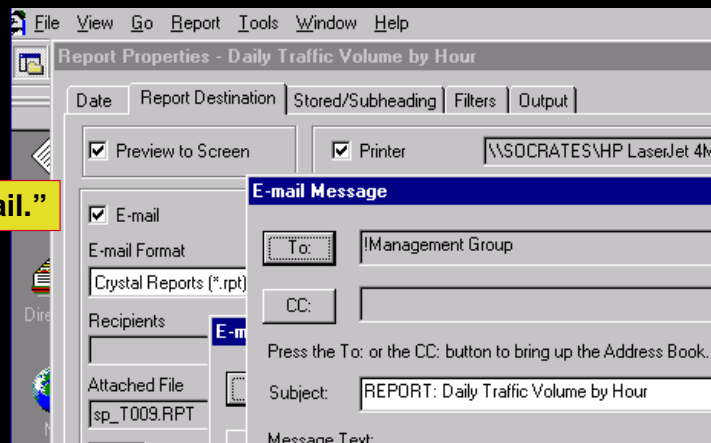
Report Distribution and Publishing

Output options for distributing reports to management:

- E-Mail
- HTML
- Print



"You have mail."



How Do I Keep My Voice Services Running?

- **Change management**
 - Network change management
 - User change management
- **Image management**
- **Service level management (SLM)**
- **Tools to notify operations and 3rd party network management systems of impending problems**

How Do I Fix Them?

- Problem Identification
- Troubleshooting
- Diagnostics
- Problem Resolution

CW2000 SLM Voice Related features

- Test voice readiness
 - SA Agent feature in the IOS
 - Jitter testing between IOS devices, emulated VoIP traffic
 - Test parameters UDP -
 - ToS (DSCP – Diff Serve Code Point)
 - Packet size, Inter packet gap
 - Packets per test
 - Trend over days, weeks, months
- Integrate CDR data for service level evaluation



Quality of Service Device Manager (QDM)

- **Primary Features:**

- Device oriented, embedded QoS mgmt. tool with:
 - Protocol discovery
 - QoS configuration by traffic class and policy
 - QoS real time monitoring by traffic class
- Web browser connection to IOS embedded web server
- JAVA app runs on W/S but is stored in router flash
- Support for critical IOS QoS features, including: NBAR, PQ, CBWFQ, WRED, IP Prec/DSCP Marking



- **Primary Benefits**

- Enables simple initial deployment of QoS features
- Combines config and monitoring in 1 tool
- No server, client or probe set-up required

CiscoWorks2000 Family



CISCO SYSTEMS



EMPOWERING THE
INTERNET GENERATIONSM