

WAM!NET® Direct! IPSM

Service Description

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INTRODUCTION

The Direct! IP Service is a subscription based content delivery service that provides customers with the ability to send, receive, and track digital files transported between their LAN and authorized destinations connected to the private global SAVVIS Content Exchange using their own Internet circuit.

The Direct! IP Service is ideal for customers that require content to be delivered directly to the Local Area Network (LAN), but cannot justify the cost of a dedicated circuit to their premise, or such a circuit is not available, or they already have in place the required bandwidth through their Internet circuit. This service is particularly attractive to customers with offices outside of major metropolitan areas in North America, Western Europe, and the Asia Pacific where dedicated circuits may be cost prohibitive. It also enables global customers to improve the performance and security of file delivery to their offices and/or partners in parts of Eastern Europe, Asia, Africa, and South America where telco options maybe very limited, but where the Internet is available.

The Direct! IP Service is positioned between the fully managed WAM!NET® Direct!SM Service and the Internet-based WAM!NET® Internet GatewaySM Service. The Direct! IP Service uses an Internet circuit, as does Internet Gateway, but unlike the Internet upload and download access to files in Internet Gateway, Direct! IP delivers files locally to the LAN like the Direct! Service. Direct! IP also forces a higher level of security by using a Virtual Private Network (VPN) over the Internet. However, because the Direct! IP Service uses an Internet circuit rather than a dedicated circuit; it does not provide any performance guarantees and local circuit management like the Direct! Service.

SERVICE AVAILABILITY

The Direct! IP Service is available at published prices and terms wherever SAVVIS provides compatible service.

CUSTOMER PREMISE EQUIPMENT (CPE)

A piece of Customer Premise Equipment (CPE) called a Purple Box is installed at the customer premise. The Purple Box provides the CPU to run the file transport software, the disk to drop off and pick up files, and the network cards required to connect to the customer's LAN and the Internet circuit in a secure manner. The Purple Box for the Direct! IP Service is similar to that for the Direct! Service, but without an IAD and telephone modem. Equipment Specifications are available from your SAVVIS Sales Representative.

The Purple Box is provided as part of the monthly service fee.

INSTALLATION

A service installation has the following primary steps:

Step 1: Once a signed service agreement is received and executed by SAVVIS, an installation manager will be assigned to the customer. The installation manager will call the customer's technical contact to schedule the installation.

Step 2: The installation manager will validate that all required information has been supplied and that the customer has an Internet circuit. If everything is in order, they will proceed to setup the appropriate account and resource information for the service and configure a Purple Box for the specific installation.

Step 3: SAVVIS will ship the Purple Box as requested as a standalone enclosure or with a rack mount kit to a customer site. The shipping costs are included in the installation fee.

Step 4: The installation manager will call the customer's technical contact and assist them over the phone in connecting the Purple Box to the LAN and Internet circuits and power it up. They will also ensure that the Purple Box can be access from the SAVVIS Content Exchange for monitoring and maintenance purposes.

The installation via phone will be in English and must occur during standard business hours, 7:00am and 7:00pm US Central Time Zone. Additional fees will apply if the installation must be performed in a different language with the assistance of a translator and/or if the installation occurs outside of standard business hours.

Step 5: In the same phone session, the installation manager will configure trading partners for the site and assist the technical contact in executing a few test transactions to confirm that the service is operational.

In some cases the installation manager may need to work with the customer to troubleshoot their firewall settings. Some firewall configurations may have to be adjusted to get the service to function properly.

A typical installation over the phone will take approximately 2 hours. In some cases, the installation will take more time due to troubleshooting compatibility issues with the customer's firewall. The installation fee includes up to 4 hours of installation assistance over the phone. Additional hours of assistance will be charged on a time and material basis.

For an additional fee, the customer may request to have a technician come on-premise to install the Purple Box.

For both installations over the phone and on-premise, the equipment and optionally the technician will arrive at the customer premise within ten business days following the execution of the services agreement and the availability of a local Internet circuit.

The service installation may also include on-line or on-site service training depending on the installation option chosen by the customer.

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SAVVIS CONTENT EXCHANGE

The Purple Box at the customer's premise is connected to the SAVVIS Content Exchange via a Virtual Private Network (VPN) over the local Internet circuit to the nearest Internet peering point with a VPN Server (VPN hub) on the SAVVIS Content Exchange. SAVVIS currently has VPN hubs in St. Louis, MO and London, UK. Because SAVVIS has fewer VPN hubs than Direct! Service POPs today, the routing for the WAM!NET Direct! IP Service may not be as optimal as that achieved with the WAM!NET Direct! Service. Additional VPN hubs may be added in the future.

INTERNET CIRCUIT

The Direct! IP Service will support direct-connected Internet connections that provide continuous connectivity. Dial-up connections are not supported by the service. The service can provide a maximum performance of up to 2 megabits-per-second when bandwidth is available.

WAM!NET® INFO CENTERSM

The customer will use a web-based tool called Info Center that is accessible by proxy through their Purple Box or directly via the Internet to configure and manage the service for their specific workflows. One or more shipping and receiving points called Resources will be created at the time of installation by SAVVIS on the Purple Box per the customers workflow needs. Additional fees apply when more than one Resource is required on the Purple Box. The customer performs ongoing maintenance of the resource(s) with Info Center.

TRADING PERMISSIONS

A customer may request trading permissions between their resource(s) and other resources on the SAVVIS Content Exchange. A Direct! IP resource is capable of trading with virtually every other type of resource on the SAVVIS Content Exchange including, but not limited to the following resources:

- WAM!NET® Direct!SM Service
- WAM!NET® Direct! IPSM Service
- WAM!NET® Direct! DVSM Service
- WAM!NET® Internet GatewaySM
- WAM!NET® WorkSpaceSM
- WAM!NET® Content StudioSM
- WAM!NET® ProofSM

The partner resources must approve the trading permission requests before file transfers can begin between the resources. The following trading permissions are possible:

- Receive Only (from the partner resource)
- Send Only (to the partner resource)
- Send and Receive (with the partner resource)

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A single resource may have trading permissions with any number of other resources including other resources within the customer's company and resources within other companies. For convenience, Info Center provides a directory of customer resources on the SAVVIS Content Exchange for those customers that want to have their resources published, making it easy to establish trading permissions with others in the SAVVIS Content Exchange Community.

FILE TRANSPORT SOFTWARE INTERFACES

A customer can choose between several software interfaces to send and receive files over the Direct! IP Service. These are the same interfaces that are available for the Direct! Service.

WAM!NET® TRANSMISSION DIRECTOR XSM

The Transmission Director X (TDX) software provides a user-friendly, point-and-click ability to send and receive files over the SAVVIS Content Exchange. The Direct! IP Service subscription includes a user license for an unlimited number of seats of TDX.

TDX includes the following features:

Drag & Drop Interface: Sending files can be as easy as dragging a file or folder from the desktop to a site in the Address Book in the TDX interface.

Drop Boxes: Users can save a populated Create Package window as an icon on their desktop to be used as a short-cut method of sending content by dragging and dropping files directly onto the icon without having to repopulate the create package window. Drop Boxes are ideal for frequent sending of files to the same destination.

Job Tickets: Several industry-smart job tickets are provided and custom job tickets can be created for a fee to send metadata or instructional information with the file(s).

Scheduled Delivery: Users can specify the time at which a package of files will be transferred. The package will wait in the queue until that time, and then it will be sent.

Client ID and Job ID: Users can enter a Client ID and/or Job ID that can later be used to track the package of files.

Package Delivery Notification: When creating a package of files to send, users can choose to be notified by e-mail when the package of files has been delivered to its destination(s).

Connection Resiliency: If the users connection to the Direct! IP Service is interrupted, TDX will automatically attempt to resume the file submission or collection transaction if connectivity is restored before session timeout.

Pause and Resume: Users can pause any active file submission or collection transaction during a session and resume it at a later time if they wish. When starting a new session in TDX it will automatically display any paused transactions from previous sessions allowing you to resume or cancel them.

Queue Monitoring: Users can suspend, reschedule, or even delete a file package from the outgoing queue as well as collect packages from the incoming queue.

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TDX is available on supported versions of both Windows and Macintosh platforms. For a list of supported platforms, view the Browser and OS Support Matrix posted on <http://serviceportal.wamnet.com>.

HOT FOLDERS

Hot Folders are simply monitored directories on the Purple Box that are made visible on the customer's LAN. Hot Folders are used to send and receive data over the SAVVIS Content Exchange. The customer mounts (connects to) the published folder from the client machine and ships files by copying them into the mounted folder. Hot Folders allow customers to send and receive files without any SAVVIS software running on the client's desktop. The mounted folders allow users to interact with the transport system as if it were just another directory on their local machine or local network. Hot Folders also allow for easy integration into an automated workflow. It is relatively easy with Hot Folders to set up processes to monitor the folders for new files and have them automatically copied into the workflow.

The following Hot Folder access methods can be used to connect to the Purple Box:

AppleShare: The Purple Box is configured to export drive volumes (directories or folders) via the AppleShare protocol to a TCP/IP link or an AppleTalk connection. Client machines running the Mac OS can connect to the exported (shared) volume making it appear to reside on the local machine as a drive or folder where transporting files is as easy as copying them from one folder to another. The Direct! IP Service includes a two concurrent user license on the Purple Box. The license on the Purple Box can be upgraded to support additional users for an upgrade fee.

FTP (File Transfer Protocol): The Purple Box is configured for access via FTP. For security reasons only user-authenticated FTP connectivity is supported by the Purple Box. Anonymous FTP is not allowed. Connecting via FTP requires that TCP/IP be in use on the customer's network and customers who have implemented a firewall between the Purple Box and their LAN must allow service ports 20,21 (and return from client >1024) for FTP to function.

SAMBA: The Purple Box can be configured for access via the SAMBA protocol.

WAM!NET® SOFTWARE DEVELOPMENT KITSM

The Software Development Kit (SDK) is a programming interface provided by SAVVIS to enable developers to integrate SAVVIS Content Exchange Services with other client and web-based applications. The SDK is available for license to those customers who have a need for custom software or integrating an existing application with SAVVIS Content Exchange Services to send, receive and track files as well as store and retrieve assets.

SAVVIS also provides professional services that can help with developing a custom interface or integrating an existing application.

WAM!NET® HEALTHCARE DICOM INTERFACE^{SM 1}

The Healthcare DICOM interface enables healthcare applications that support the DICOM protocol to send and receive files with the Direct! IP Service by communicating with the Purple Box using the DICOM protocol.

¹ Not available on a Direct! IP Linux configuration

SERVICE ENHANCEMENT OPTIONS

There are a couple of service add-ons that can be applied to the Direct! IP Service to extend its content distribution capabilities.

WAM!NET® ENCRYPTIONSM - Service Enhancement Option

Built upon the OpenPGP standard, SAVVIS has embedded support for strong encryption into the TDX client application. Customers using TDX can easily create, distribute and manage PGP keys and protect critical data before it is transmitted over the SAVVIS Content Exchange. The encryption process takes place on the customer's workstation(s) running TDX; at no time is SAVVIS in possession of a private key.

There is a nominal subscription fee for customers who wish to send using encryption; however, any customer can receive and decrypt encrypted packages at no charge.

WAM!NET® WORKFLOW ROUTING^{SM 2} - Service Enhancement Option

Workflow Routing automates the receipt of content from the Purple Box and routes it to its next point in the workflow via FTP to an FTP site on the customer's LAN. This service allows the customer to route content to its final destination more quickly and without manual intervention. Info Center Administrators may define the criteria for each route to determine which packages will be routed, how they will be delivered and to which FTP site they should be sent; multiple routes may be configured. Packages are routed in a managed fashion with Info Center tracking, error handling and notification capabilities.

Configurable Parameters

- Trigger on Always (default), Job ID, Client ID, or Sending Resource ID
- Trigger condition is equal to, is not equal to, contains, or does not contain a defined value
- FTP Address
- FTP User Name
- FTP Password
- Protocols are FTP (default) or SFTP
- Access Modes are Active (default) or Passive
- Transfer Modes are Binary (default) or ASCII
- File Formats are Native (default) or MacBinary
- Character Processing options for non-ASCII characters are HTML Escaping, Pass Through (default), or “_” Escaping
- Specific Characters to Escape may be specified
- Optional Upload Directory may be specified
- Enclosing Folder Name may be None, Package ID (default), or Job ID
- Preserve File Paths: Yes (default) or No
- Include a Job Ticket: No (default) or Yes
- Job Ticket Format may be XML (default) or HTML
- Optional Job Ticket Directory may be specified
- Delete Packages off the Purple Box receive dock may be set to Never (default), FTP Success, Failure, or Both Success and Failure

² Not available on an Direct! IP Irix configuration

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NOTIFICATION

The service may be configured in Info Center to provide e-mail and HTTP notifications for the following events:

- New package arrival
- Package leaves the Purple Box
- Package receipt by destination

Each of these e-mail notifications includes the following package information:

- General package information; from, to, package id, number of files, package size, etc.
- Job ticket information if the package includes a job ticket
- A list of files contained in the package sorted alphabetically, up to a maximum of the first 2,500 files contained in the package

The following are notifications specific to Workflow Routing:

- Received Package has been Forwarded to FTP Site (e-mail only)
- Received Package Failed Initial Attempts to Forward to FTP Site (e-mail only)
- Received Package Failed to Forward to FTP Site (e-mail only)

TRACKING AND REPORTING

A customer can track and report on content delivery transactions using Info Center. Info Center allows users to obtain up-to-the minute status of shipments. Administrators can also obtain detailed traffic reports to manage service utilization and costs. Transaction information is maintained on-line in Info Center for 90 days. All data is maintained in an archive format that can be restored for a fee upon request from the customer.

SECURITY

The VPN implemented over the Internet between the Purple Box and the SAVVIS Content Exchange is very secure and based on standard technologies that are widely adopted. The VPN runs over the UDP protocol and utilizes OpenSSL for encryption. It uses Blowfish in its Cipher Block Chaining (CBC) mode using a 128-bit key and 2048-bit authentication certificates. CBC refers to the process of taking input from each proceeding block of encrypted text and uses it to modify the next block of text. All transactions over the Direct! IP Service are secured in this fashion.

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The customer must provide SAVVIS with the range of IP addresses on their LAN that may access the Purple Box such that the VPN can be configured to only allow access from IP addresses within that range. The other end of the VPN is configured to only allow access from IP addresses from within SAVVIS's IP space. The installation fee includes configuring up to 10 IP address ranges. Additional fees may apply if more than 10 address ranges are required. If changes need to be made to the authorized range of customer IP addresses at a later date, a nominal fee will apply at the time the changes are made.

The customer must also provide SAVVIS with a static IP address for the Purple Box on their LAN so SAVVIS can access the Purple Box for monitoring and maintenance purposes. Only SAVVIS will have root access to the Purple Box.

It is the customer's responsibility to secure access to the Purple Box from within the designated IP range of their LAN. SAVVIS also recommends that the Purple Box be installed inside the customer's firewall.

The following table contains the minimum port numbers that must be opened on a customer's firewall. Note that all of these can and should be applied with a source of our VPN server and a destination of the Purple Box.

Ping/traceroute	Icmp	Bi-directional
SSH	22/tcp	Inbound to Purple Box only and established connections
Open VPN	1194/udp	Bi-directional
FTP	20,21/tcp	Inbound to Purple Box only

Depending on which optional services are running, additional ports may need to be opened on the customer side.

AppleShare	548
FTP	20/21
Info Center	80
Medical ¹	14000
Content Studio Streaming	554
Real Time Image	8080/8100/8101
SAMBA	139
TD ¹	3284
TDX	15100, 20/21 or 80
Transport API	15100
WorkSpace AFP	549
WorkSpace Browser	8080
WorkSpace FTP	2020/2021
xmldemo.wamnet.com	15002

¹ Not applicable to a Direct! IP Linux configuration

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PERFORMANCE

Content delivery performance will be based on the performance, utilization, and reliability of the customer's Internet circuit. The Direct! IP Service does not include any line speed guarantees. The service has demonstrated a maximum performance of 2 megabits-per-second in pilot testing with customers.

TECHNICAL SUPPORT

The Direct! IP Service comes with 24/7 phone support for users within the customer organization.

SAVVIS has systems in place that monitor Purple Boxes, VPN and the SAVVIS Content Exchange Network. When a service issue is detected by SAVVIS or is reported by the customer, SAVVIS will attempt to resolve the issue as soon as possible if it is related to a SAVVIS service component. If SAVVIS determines that the problem is related to an Internet circuit that is provided by the customer, SAVVIS will inform the designated technical contact of the customer that there appears to be a problem with their Internet circuit. It is the customer's responsibility to work with their Internet circuit provider to resolve such an issue.

When a service issue requires hardware maintenance on the Purple Box, SAVVIS will ship the necessary hardware to the customer premise and work over the phone with a customer employee to replace the necessary hardware components.

CHANGING THE INTERNET SERVICE PROVIDER

SAVVIS must be given at least two weeks notice of a customer's intent to switch their ISP prior to the actual switch. SAVVIS will need to access the local Purple Box while the existing Internet circuit is still active to configure it for the new Internet circuit. The customer will be charged a standard configuration fee for such a change. If two weeks notice is not given prior to a change in ISP, then the resulting configuration fee may exceed the standard fee as additional work may be required to re-configure the Purple Box.

RETURNING THE PURPLE BOX UPON SERVICE CANCELLATION

If a customer decides to cancel the service the service will be turned off and an empty equipment-shipping package will be sent to the customer premise. It is the customer's responsibility to work with SAVVIS over the phone to disconnect the Purple Box and package it for return to SAVVIS. Additional fees will apply if the Purple Box is not returned to SAVVIS in a timely fashion.

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CUSTOMER REQUIREMENTS

- An Internet Circuit
- Ethernet LAN
- Static IP Address for Purple Box
- Provide The range of IP addresses from the customer LAN that are authorized to access the Purple Box
- Provide a technical person to work with SAVVIS over the phone for Purple Box installations, upgrades, maintenance, and Internet circuit outages.

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