



NetMap

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An Overview of NetMap

Introduction and System Requirements

NetMap is a hardware and software asset management tool for network administrators. Using NetMap, network administrators can easily visualize an overview of established network devices and access a single source of data for software licenses, system versions and login information.

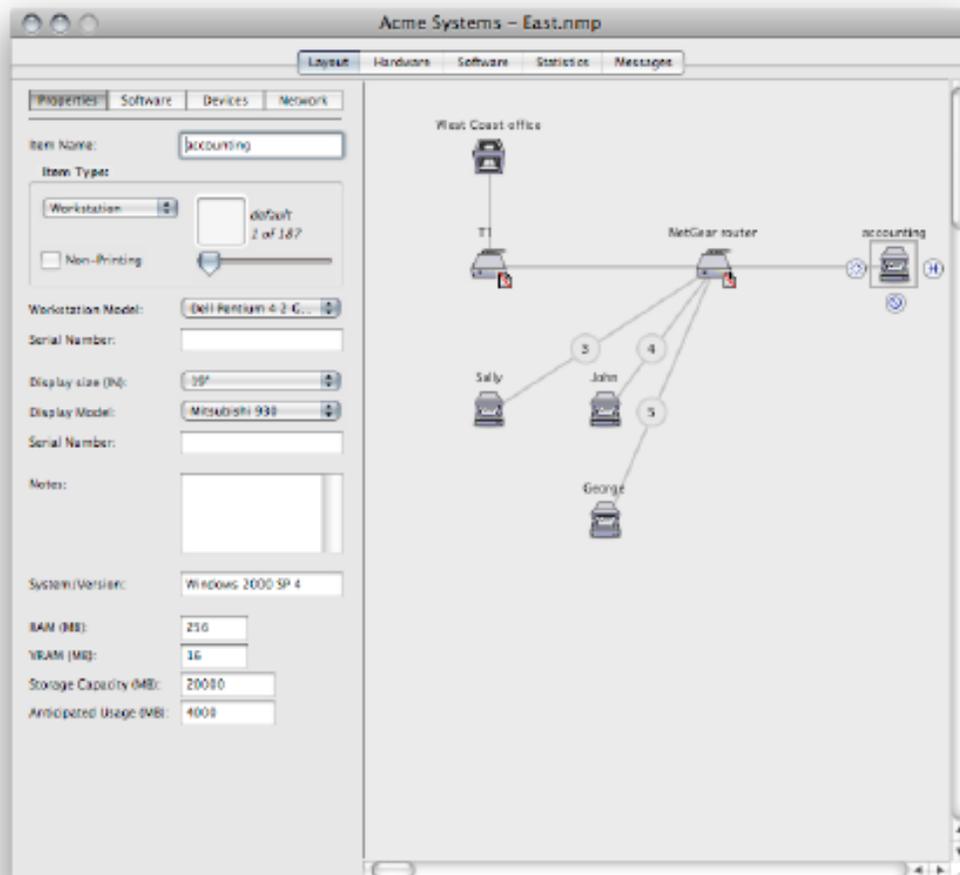
Additionally, NetMap can be used to manage user requests for repairs or upgrades through a built-in messaging system. NetMap is an asset management tool that affords network administrators convenient and organized access to information about the network they manage; saving time and making the information technology process more efficient.

System Requirements:

- Macintosh OS 10.x or Windows XP or higher

The Application

The NetMap application consists of a single window with several tabs to change the display of information. These tabs consist of the *layout*, *hardware*, *software*, *statistics* and *messaging* areas.



The NetMap main window with section tabs, property area and diagram area.

The initial, *layout* tab provides the user with a *diagram area* and *properties* area. The *diagram area* of the window visually displays the selected network, using icons to represent various items on the network. This area allows for the creation, manipulation, removal and connecting of network items. The properties area is a tabbed section that allows one to view complete information about the selected item. Using the tabs, a NetMap user can change the display of item properties in order to view hardware and software information, software licenses approved for the selected item, attached hardware devices, and network interface/login data.

Other tabs allow the NetMap user to see compiled, overview information, add software to network users, and to manage messages sent to the NetMap administrator.

Terms

Throughout the NetMap manual certain terms are used. They are outlined below.

Item: This term refers to an object created in a Netmap which iconically represents a single unit on the physical network such as a computer workstation, router or networked printer.

Netmap: This term refers to a file created by the NetMap application. It is not to be confused with the name of the application “NetMap”.

Creating a NetMap

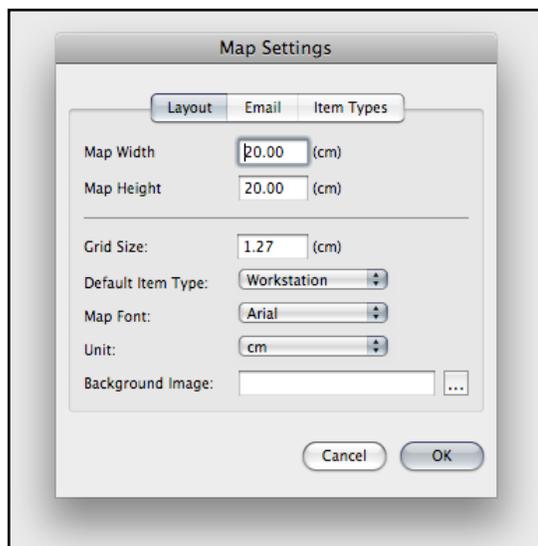
Setting the Size of the Netmap

By selecting “New” from the “File” menu, NetMap provides a dialog box that allows the user to setup the size of the new netmap. The size is arbitrary, but it is suggested to set the size of the netmap in proportion to the area you are diagramming and to make it large enough to accommodate the number of items in the area. For example, with “ACME Systems - East” the office space is rectangular, about 30’ x 40’, so we set our netmap size to 6” x 8” (1/60 scale). This is not necessary, but allows us to visualize and map the network in proportion to the physical placement of the actual computers, printers, etc. Also, since there are not too many network items to diagram, the size is adequate. If there were more items to map, we could easily set the size of the netmap to 9” x 12” or 18” x 24”. The only limitation on size is available memory, but smaller maps that fit on your monitor without scrolling make it easier to view the entire network. If it is necessary to scroll through the netmap in order to see the entire network, this can be done through the use of the scrollbars at the right and bottom sides of the window or by holding the Command key (Alt on Windows), clicking, and dragging the diagram to the desired area.

Once the size of the netmap has been established, the “Page Size...” command in the “Map” menu can be used to resize the netmap file. When making a netmap smaller, the option to remove or move items that are outside of the new dimensions is presented.

Changing Netmap Properties

By selecting “Map Settings...” from the “Map” menu, NetMap displays the properties for the open netmap file. These properties are unique to each netmap that is created and therefore can be different from file to file (with the exception of global item types, outlined below in “Defining Item Type Lists”). The settings window allows a user to change several default items of the current netmap as well as to enter information related to messaging (this topic is covered under section 5, “Request Messaging”).



The Map Settings dialog.

Adding, Deleting and Networking Items

After creating a new netmap, a single item is created in the center of the netmap diagram. This item is the root object of the netmap and cannot be deleted. From this item, three round icons are available to allow the creation, deletion and networking of items on the netmap. These icons are always present on the currently selected item. Clicking in the create icon makes a new item on the netmap which can be moved into position by clicking and dragging on its icon. Clicking the delete icon removes the selected item. Clicking down on the network link icon provides a line to the cursor that can be dragged to another item and then released, connecting the two in a network. This process can be repeated to remove the network connection.

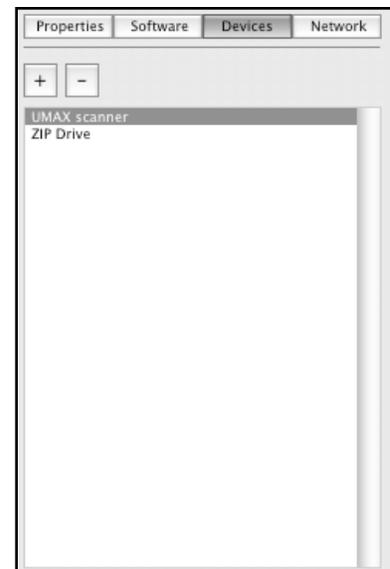


The create, delete and network link icons of the currently selected item (from left to right).

When linking items together, it is important to do so in a structured manner. Since some netmap items (routers, for example) can have several network links, NetMap tracks network connections from the currently selected item to the item which the link is dropped. Let's illustrate this in an example. Say we have two NetMap items, a computer called "Jill's computer" and an Ethernet router called "office router". Clicking and dragging a link from "Jill's computer" to the router will create a network link and use the drop number that is indicated in the properties for "Jill's computer". This drop number represents the physical connection port that identifies the specific network cable at both ends. Clicking the link icon for "office router" and dragging a link to "Jill's computer" will still create a network link, only this link will use the drop number for the router. This is not a desirable situation as all items connected to the router in this manner will have the same drop number. Creating network links in the correct manner will allow for the quick identification of network connections and cabling.

Changing Item Properties

When an item is selected, that item's properties becomes visible in the properties area of the NetMap window. Which properties that are displayed can be changed by selecting the appropriate tab above the properties area. Properties for the selected item (name, system version, software, attached devices, network interface type, etc.) can be changed by typing a value into the appropriate field or in some instances by selecting a value from a pop-up menu. The icon can be changed using the icon slider (icons can be added by dropping them into the "Item Icons" folder located within the NetMap application folder). The software and device property tabs provide a listbox that respectively displays the software licensed to the selected item or hardware devices connected to that item (external storage devices, scanners, local printers, etc.). Software assignments can be made in the "Software" tab of the netmap window. Devices can be added into the device list by clicking the add button above the list. Similarly, devices can be deleted by selecting the entry and clicking

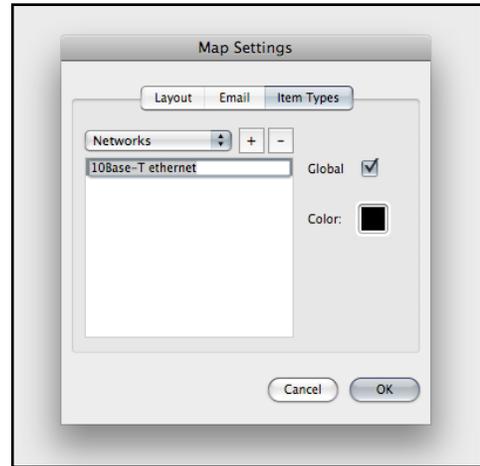


The Device tab of the Properties area with add and remove buttons.

the remove button.

Defining Item Type Lists

The “Item Types” tab of the “Map Settings” dialog contains a pop-up menu with three menu items: Networks, Workstations, and Displays. These allow for the definition of lists that can be used to describe corresponding properties of items. These lists are used to populate the popup menus located in the properties area of the NetMap window. Each menu item allows the creation, deletion and editing of a specific list. Specific list items can be edited by double-clicking on the list item and edited in-line. The “Displays” and “Workstations” menu items present a list of the type of monitor displays (e.g. “Mitsubishi DiamondPro 930”) or workstation types (e.g. “Apple PowerMacintosh G5 Dual 1.5 GHz”) that are used in the netmap. These can be listed as plainly or as specifically as needed in order to meet any auditing requirements of the organization that the netmap is diagraming. The “Networks” menu item allows the editing of the types of network connections that are available on the network. This list can be edited in order to match the requirements of each specific netmap.



The Network List dialog box available through the “Map Settings” menu.

Item Types can also be labeled as “global” by checking the checkbox while the desired type is selected. Global item types are stored in the application’s preferences and are available to all netmap files opened on the same computer. This feature is handy to create a single list of commonly used items that that can be shared among multiple files.

Network types also allow the selection of a display color by clicking the visible color well. The chosen color of the selected network type changes the color of the link when that network type is used.

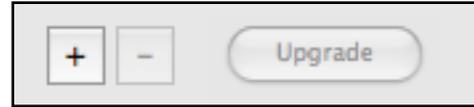
Linking to other Netmaps

When creating small networks, a single netmap file is often sufficient. However, when mapping large networks with hundreds of items a single window can be cumbersome and confusing. For this reason, NetMap allows the creation of link items which iconically represent another section of the network; whether it be in another room or on the other side of the world. Using this system, a NetMap user can create netmap diagrams of virtually boundless network systems while still maintaining a sense of order and usability. To create link items, the “link” value is selected in the type pop-up of the properties area for the selected item. Doing so, changes the item icon to a link object and allows the use of the “Browse” button to select a netmap file to link to. Double-clicking on the link icon in the netmap’s diagram area will open the linked file, replacing the previously opened netmap.

Creating a Software Inventory

Working with the Software List

The software tab of the NetMap window allows access to a listing of software applications that are owned by the organization that the netmap represents. Software can be added to this list, along with version information, serial number, manufacturer, contact information, etc. Clicking the add button presents a dialog box allowing the entry of the software application name and other pertinent information. Software items no longer in use can be removed by clicking the remove button. Once added, the software item and its corresponding license number can be assigned to an individual netmap item.



The add button in the software tab.

When working with software licenses and versions, it is often the case that a specific serial number will be upgraded to another number following the release of a new version of the software. NetMap allows for the migration of these licenses by providing an upgrade function for software items. To use the upgrade function, select the software license that you would like to upgrade and click the “upgrade” button, located at the top of the software list. A dialog box will be presented allowing the entry of the new version number of the software and its corresponding serial number.

Site licenses can also be entered by indicating more than one in the “Number of Licenses” in the software item dialog. These licenses are grouped in the software list under one license number and can be assigned to netmap items individually in the same manner described below.

Assigning Software Licenses

Maintaining a list of software serial numbers and the workstations that they are installed on is a task that allows organizations to comply with software license agreements. NetMap allows network administrators to manage this task by enabling the assignment of specific software serial numbers to specific items within a netmap. To do so, select a software entry in the software list and simply choose an item from the “Assigned To” popup menu, located at the top of the list. This software title and serial number will then be listed in the software tab of the properties area for the selected item.

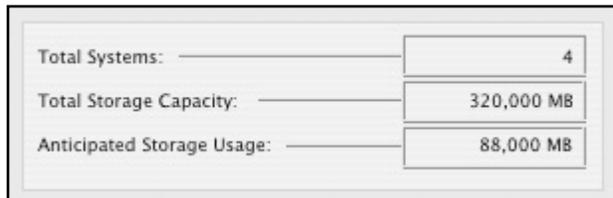
Viewing Netmap Information

Diagram Viewing Options

The diagram view of the NetMap application has several options that can be used to control the display of information in the netmap. These options are located in the “Map” menu. A grid for use as an aid to position items on a netmap can be displayed by selecting the “Grid” menu item. This options displays a series of vertical and horizontal lines on the background of the netmap diagram. The grid size is adjustable in the “Map Settings” dialog box. When the “Snap To Items” menu item is activated, dragging a netmap item will be assisted with the appearance of guide lines when the item is lined up horizontally or vertically with another netmap item. Netmap diagrams can be further customized through the use of the “View > Links” and the “View> Drop Numbers” menu items. The “Links” menu item displays lines connecting items on the netmap that have a network link. This is the default behavior of new netmaps and can be turned off by deactivating the “Links” menu item. Additionally, drop numbers (numbers assigned to physical network connection ports in order to identify the other end of the connection) can be displayed on the netmap as well. Similarly, this is the default behavior of new netmaps and deactivating the “DropNumbers” menu item will hide this information from the diagram display.

Systems & Storage

A compilation of storage related information for the network can be view in the statistics tab. The upper left corner of this tab panel presents the total number of computer systems, the total amount of available storage, and the total amount of anticipated usage. This information is compiled through the storage property fields of each item on the NetMap and can be used to estimate the storage capacity of the network. Computer systems are also broken down by model type and compiled in the systems breakdown list of the statistics tab. Items of each unique workstation model (as defined in the workstation list and selected for each workstation item on the netmap) are listed here with the number of similar workstations on the netmap.



Total Systems:	4
Total Storage Capacity:	320,000 MB
Anticipated Storage Usage:	88,000 MB

The storage area of the statistics tab.

Software

As mentioned previously, the software list in the software tab can be used to create an inventory of assigned software licenses and version numbers. This list represents the entire collection of purchased software for the business or group the netmap represents and can be used to visually inspect the inventory for compliance, budgeting or maintenance measures. Another compilation of software items is available in the statistics tab which presents the list of unique software titles and the number of copies owned.

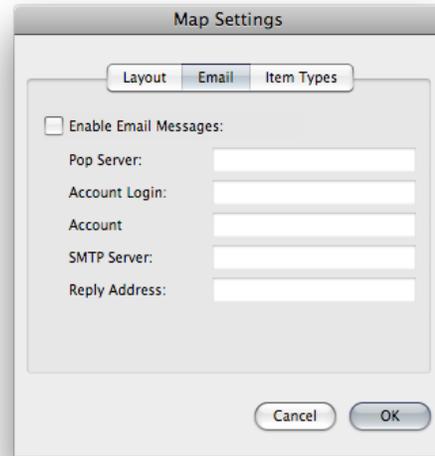
Attached Devices

NetMap allows for the specification of attached hardware devices to specific items on a netmap. These can include scanners, pen tablets, printers and other devices connected to the item that are not available to the network. These devices are summarized in the statistics tab in the “Device Breakdown” list along with the item it is connected to. This list can be used to see an overview of available hardware devices on the network for auditing purposes or other resource gathering endeavors.

Request Messaging

Enabling and Configuring Messaging

NetMap allows for the receiving and storage of message requests for support staff and network managers. Using the NetMap request messaging system, network managers can see requests from network users for technical assistance, maintenance and/or troubleshooting issues. Request messaging can be activated in the “Map Settings” dialog available through the “Map” menu. Selecting the “Enable Email Messages” checkbox allows for the entry of email information for the administration account. It is suggested that a unique account be established for this NetMap account.



Required fields for request messaging.

Receiving Messages

Once request messaging is activated, NetMap will periodically poll the specified email server and indicate when new messages have been received. This activity only takes place while the specific netmap is opened. Messages may also be checked for manually by clicking the check messages button located in the messages tab. Once received, messages are displayed with an icon at the left of the message line indicating that they are new and can be completed or deleted as desired. New messages are also indicated in the diagram area of the layout tab through display of an email picture next to the icon that the message is in regard to. In order to be displayed correctly, messages sent to the NetMap messaging system should have their subject line formatted in an “issue:user” manner. NetMap will interpret the first part of the subject line (before the colon character) as the issue that needs to be resolved or the question asked. The second part of the subject line will be displayed as the user or network item that requires the request. Using this method, requests can be made for systems or devices other than one’s own (e.g. making a request for maintenance to a server or other shared network device). The “Filter” edit field can be used to restrict the display of email messages. Typing into this field will show only those messages from users containing the text. This can be helpful when searching for a specific request or looking at the requests of a specific user on the network. The filter can also be activated quickly to search for a specific user’s messages by double-clicking the icon of the user’s item in the diagram area of the layout tab.



The check messages, complete and delete buttons of the messages tab.

Completing Requests

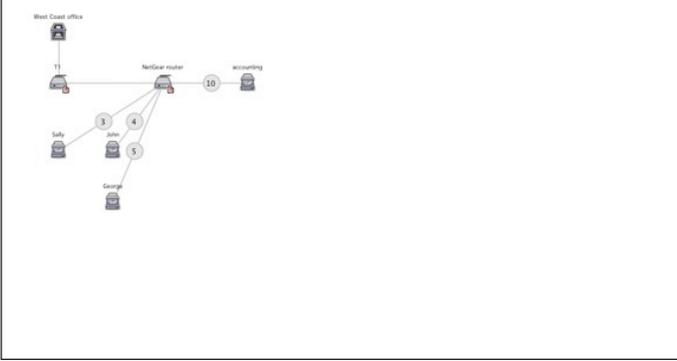
Once a message has been received and acted on, the network administrator can respond to the request by selecting the request and clicking on the complete button (the button at the top of the message list with the checkmark icon). Clicking this button presents a dialog box asking for the name of the individual who completed the task. This name is logged with the request along with the time of entry. NetMap will then connect to the specified mail server and send a message to the original requester providing them with a message that the request has been handled.

Printing

Netmap Reports

Complete information for the currently opened netmap can be printed by selecting the “Print Netmap” menu item in the “File” menu. This print consists of a copy of the netmap diagram displayed at the top of the page and a listing of each item on the netmap, along with their specific properties (IP address, software, connected hardware devices, etc.). The order of item printing is determined by the order the items were created in the netmap. The items may be reordered by selecting the “Reorder Items” menu item from the “Map” menu.

Individual items can be prevented from printing by selecting the “non-printing” checkbox in the properties tab when the item is selected.



The diagram shows a central 'NetGear router' connected to several nodes: 'West Coast office', 'sally', 'John', 'George', and 'accounting'. The nodes are numbered 1 through 5, corresponding to the order they were created in the netmap.

accounting			
Item Type:	Workstation	System:	Windows 2000 SP 4
Workstation Model:	other	RAM:	256
Workstation SN:		VRAM:	16
Display Size:	19"	Storage:	20000
Display Model:	Mitsubishi 930	Storage Allowance:	4000
Display SN:		Drop Number:	10
Notes:		IP Address:	192.168.42.50
Devices:		Interface Type:	10BASE-T
Software:		Owner Name/Login:	
		Machine Name:	accounting
		Email Account:	
		Password:	
		Email Aliases:	

John			
Item Type:	Workstation	System:	OS 10.4
Workstation Model:	Apple PowerMac G4 1.2...	RAM:	512
Workstation SN:	9823291231-A	VRAM:	16
Display Size:	19"	Storage:	20000
Display Model:	Mitsubishi 930	Storage Allowance:	4000
Display SN:		Drop Number:	4
Notes:		IP Address:	192.168.42.12
Devices:		Interface Type:	100BASE-T
Software:		Owner Name/Login:	
		Machine Name:	
		Email Account:	
		Password:	
		Email Aliases:	

Acme Systems - Exit

A NetMap print with diagram and information on two items.

Software Reports

A list of the software inventory can also be printed in order to have a sorted list of software titles and registration numbers. To print the software list, first display the list by selecting the software tab and choose the “Print Software List” menu item from the “File” menu.

Statistics Reports

Statistics for the opened netmap can also be printed in order to have a summary of the included assets. To print the summary, first select the statistics tab and choose the “Print Statistics” menu item from the “File” menu.

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