

CHAPTER ONE:

THE VRNET

The d20 Future book covers most aspects of a futuristic game, but one concept it does not address in detail is virtual reality. This article presents the virtual reality network, or VRNet, with detailed information about its history, hardware, and software, as well as avatars (virtual reality representations of users), and the new prestige class called the Cybernaut.

THE VRNET

The virtual reality network (VRNet) is, in simple terms, a graphical representation of computer-generated structures placed in various digital locations and configurations. Comparable to the Internet of the 21st century, the VRNet is a nexus for all information accessible via computers. In the VRNet, corporate networks join with public forums, personal domains intersect with top-secret government databases, and users can explore a digital landscape as though moving from place to place in the real world. The difference between a virtual reality network and the Internet of old is that the VRNet immerses its users in a world that seems entirely real rather than simply scrolling text and images across the screen. A VRNet functions in three dimensions and is, in essence, another world waiting to be explored.

The VRNet develops toward the end of Progress Level 5 and continues to evolve throughout PL 6 and 7. In many respects, the VRNet exists parallel to the real world, though it is actually just a visual illusion of a three-dimensional space created by an artful combination of data and software. A staple of many science fiction campaigns, the VRNet is the equivalent of the fantasy genre's "alternate dimension"—a place where heroes can go to continue their adventures beyond the humdrum world in which they exist. Like the modern-day Internet, the VRNet is also a tool for the storage, exchange, and theft of information.

Despite its sophistication, the VRNet is not solely the domain of hackers and network administrators, and high levels of technical savvy are not required to use it. The VRNet is as much an instrument of the masses as it is a mystifying "otherworld" wrapped in billions of lines of computer code. Schoolchildren use the VRNet to take virtual field trips and do research for class projects. Scientists perform complicated and dangerous experiments in the safety of a virtual world in which simulations can predict all possible outcomes. College students meet old friends in computer-generated coffeehouses to chat, even though they are physically separated by thousands (or even millions) of miles.

Any product or activity that can be found or performed on the modern Internet is also available on the VRNet. Research, communication, information warfare, espionage, blackmail, entertainment, and even romance can all be found somewhere in the cyberlanes. However, the VRNet presents a far more interactive experience than the Internet can. The VRNet wraps its users in a complete

three-dimensional world that provides a sense of movement and even tactile sensations when used in conjunction with the proper equipment. The VRNet can also be more dangerous to the user's mental stability than the Internet, since long-term immersion in a virtual world can fool the mind and body into thinking it is real. This problem is compounded by the fact that avatars (the virtual online representations of individual users) are not merely vessels for movement and interaction—they can also be used to attack other avatars and inflict harm upon other VRNet users.

HISTORY OF THE VRNET

The VRNet was spawned by the 21st-century Internet—the foremost electronic communications tool of its time. Though the VRNet shares many common characteristics with its archaic progenitor, the evolution of technology allowed it to become much more than the Internet ever was. Researchers in the early Information Age sought to expand the usefulness of the global communications network by making it a social experience, similar in many ways to visiting a shopping center or traveling the streets of a major city, but without the bother of physically leaving the house. This focus on the development of social interaction capabilities eventually enabled users accessing the same information or playing the same games to speak and interact as though they were in the same room. While this aspect of the Internet was met with enthusiasm, anonymity on the information superhighway slowly became a thing of the past as technology gained the capability to collect information and to customize services for individual tastes.

The most drastic revolution was the development of true virtual reality (VR). Though the concept had been present in a primitive form for many years, true virtual worlds had not previously been possible because of the limitations on hardware and the exorbitant cost of the interface. The breakthrough came on two fronts: affordable interaction hardware and highly efficient VR software. For the first time, the tools for creating virtual worlds were not only readily available, but also simple and flexible enough that almost anyone could create vivid and realistic settings in mere minutes.

This software in turn spawned the creation of the first nodes, or virtual locations on the VRNet. As nodes proliferated, computer hardware was modified to include built-in VR node interpreters, which allowed users to access any computer system via virtual reality. The benefits of this arrangement were obvious and welcome. For example, when the onboard computer system on a motorcycle began to exhibit glitches, programmers could simply jack into the computer and step inside to explore the problem. The VRNet began to replace the traditional global information network as more and more companies and users converted text and flat images into three-dimensional nodes that could represent the information in new and interesting visual ways.

By the late Information Age, all computer systems came equipped with VR-compatible hardware and software. Though many computer systems were still not linked to the VRNet itself (usually to prevent external tampering by malicious hackers), the VRNet had become a massive sprawl of millions upon millions of nodes. As humanity began to spread into the stars, the VRNet spread as well, until it encompassed not only all of Earth, but also various other worlds and colonies.

NODES

“Node” is a generic term for a virtual location on the VRNet. In fact, any computer system that is equipped with VR hardware and software can have one or more nodes. The VRNet links these nodes across a network to make them available to other users.

A node can serve a single purpose, have many functions, or have no purpose at all. Some nodes are filled with complex toolsets, while others are merely data repositories. Often a node is simply a graphical representation of a computer system’s various files, programs, and directories—an arrangement that makes navigation and manipulation a much simpler task. Still other nodes can serve as the sites for VRNet-based adventures.

Every node has some graphical representation that illustrates its functions. Nodes can take on any visual form that the owner chooses, and some people make their livings by designing VRNet nodes to reflect their customers’ tastes. For example, an owner with a flair for design might have a node that looks like a magnificent palace, while a less creative individual might opt for one resembling a large, white room filled with black file cabinets.

Because of the wide variations in node appearance, traveling across the VRNet is like visiting thousands of different worlds and time periods. A VRNet user’s avatar might step from a Wild West saloon into an Irish castle, then hop over to a futuristic, hovering restaurant in the middle of an asteroid field to meet a friend. Even nodes that are disconnected from the VRNet and exist only within freestanding computer systems have graphical representations. Most VR computer hardware comes with a standard, bare-bones graphical style that gives its user enough visual cues to set up and navigate a node.

While most computer owners never use their VRNet hardware to dive into their home security systems or poke around the software that runs their car stereos, such uses are possible. Heroes familiar with the technique can use the VRNet to access a door’s security lock or activate a defense system from the “virtual inside.” Because few people other than hackers, criminals, and technicians ever see the VR representations of such systems, they are typically quite bare and bland in design.

SECRETS OF NODE DESIGN

Though every node is designed with an individual graphic style, various common “style sets” form the foundation of most node design on the VRNet. Thus, many nodes share elements of the same styles, and most of the amateur-built nodes are similar in design. Only professionally designed nodes deviate from these standard toolsets, but even they share several recognized elements.

The visual style of a node must conform to certain standards that have been established across the VRNet to make navigating the network easier for users. Though they may take different forms, these standard elements can be broken down into three categories: barriers and portals, inanimate objects, and interactive objects. Each of these elements is tied to certain programs that run either actively or passively, and any representation that can be seen, touched, or manipulated in a VRNet node can be classified in such a way.

BARRIERS AND PORTALS

Barriers and portals make up the file and directory structure of any VR computer system. As an avatar moves between visually distinct areas, or “rooms,” in a VRNet node, it is actually moving between different directories in a particular system. The walls of the room (which might appear as physical walls, transparent force fields, or any other form the designer chooses) are actually the limitations of a particular directory. Put another way, objects contained within a given set of walls are actually programs or pieces of data contained within the corresponding directory. Thus, when an avatar moves into a room and picks up a calculator, the user has actually moved into a directory containing a calculator program and begun manipulating it.

Portals can transfer avatars not only between rooms in a node, but also from one node to another. Portals can take many visual forms, from simple doors to swirling magical vortexes, but in every case, a portal simply allows an avatar to move from one location to another within the VRNet. Most portals to other nodes are one-way links that transfer an avatar completely to the other computer system. Some nodes feature return portals, but for the most part, a portal simply gives visiting avatars the virtual address of the target node and sends them on their way.

INANIMATE OBJECTS

Most VRNet nodes feature visual representations of inanimate objects that avatars can manipulate. Such objects range from purely decorative items, such as artwork (images) or televisions (movie files) to functional items such as chairs and tables. Raw data (such as text information) is also considered an inanimate object and is most often represented as books, tablets, or scrolls in the virtual world.

To the computer, inanimate objects are the simplest of programs—they output visual and sometimes tactile data to an avatar but serve little to no purpose other than decoration or simple interaction. Such objects are easy to create and remove, and they take up very few system resources. Avatars can typically conjure up inanimate objects at will from a set data library, which contains files for most common household items as well as any custom items the avatar might have at hand.

INTERACTIVE OBJECTS

Any object in a VRNet node that can be acted upon and that reacts in some way other than simple movement is considered an interactive object. Such objects are complex programs that serve a purpose or function in the virtual world. Within the node, they typically appear as scientific calculators, typewriters, computers, paintbrushes, canvases, and other objects that can be interacted with in a variety of ways.

Most interactive objects are still simple programs by most standards. They can also be complex programs, although extremely complex programs are typically represented as nodes in their own right. Interactive objects usually take considerable time to program, although they may be stored in an avatar’s available memory for quick access.

MOVING BETWEEN NODES

Travel between nodes on the VRNet can be accomplished in several ways, including various options based on custom software. The two most common methods of internodal travel are portals (see Barriers and Portals, above) and the “direct hop” method.

To make a direct hop, an avatar’s user must be able to retrieve the virtual address of a particular node (a string of letters and numbers) from memory. A user that visits a particular node several times can

learn its virtual address and visit it at will, much as a person could memorize the location of a particular restaurant and walk directly to it rather than taking a bus route. Some nodes block direct access, however, forcing avatars to enter through designated portals.

Other programs can also transport an avatar from one node to another, but portals and direct hops are the only forms of internodal transit built directly into the VRNet code. Other means of travel may vary greatly from program to program and are considered software upgrades to an individual avatar or node.

Not all nodes are intended for public access. Some are blocked to all but designated avatars (which are given software “keys”), while others are simply closed to the outside world altogether. Some nodes require password access or specific routes of entry, thereby ensuring that only selected avatars may enter. This technique prevents anyone from using another person’s VR interface and avatar to break into a particular node. If an avatar does not have the proper key or password for a restricted portal, the user must make a Computer Use check against the node’s Portal DC to move the avatar through it (see Sample Nodes for more information on Portal DCs). Node security is a major concern for users of the VRNet, and each node has a series of roadblocks that must be overcome to gain access.

WHAT CAN BE DONE ON NODES?

Though much has already been said about the versatility and usefulness of the VRNet, the uses of a node might not be readily apparent. If a node is simply a virtual representation of a single computer system, avatars (and their users) can perform a variety of actions and tasks there.

In general terms, an avatar can run any program stored in its available memory that does not violate the rules of the node. Any software designed to overcome security or read encrypted data is certainly outside the realm of acceptable program usage, but an avatar that can cover its tracks well enough may still be able to use it. Otherwise, unless a node has a particular restriction on what programs may be run within its confines, an avatar is free to execute any programs it has access to there. For most users, program use within the VRNet means keeping notes in a word processing application, making use of an agent (see below), or other simple processes. Should an avatar attempt to run a program designated as “off-limits” by the node, the user must make a Computer Use check to overcome the Permissions DC of the node before the program can be executed (see Sample Nodes for more information on Permissions DCs).

AVATAR INTERACTION

When two users wish to meet in the virtual world for a discussion, their avatars need only be present in the same “room” in the same node. Special communications software can also make it possible for two avatars to “speak” (that is, transfer data) across different nodes, provided that neither avatar is inside an area that is blocked off from the rest of the virtual reality world. Avatars can interact in the same way that they interact with objects on the nodes, from touching one another to running programs on each other. Additionally, two users can pit their avatars against each other in combat. The sight of two avatars locked in battle is a sure sign that the two users are hurling complex programs and devious hacks at one another’s systems.

DATA STORAGE AND ACCESS

The VRNet is, first and foremost, a tool for data storage and access, though how data is presented varies from node to node. On one node, avatars might access data by conversing with a virtual charac-

ter. In another node, an avatar might find the data stored on dusty scrolls in some unknown language.

An avatar that comes across data on a VRNet node has several options. If the data is free and open to the public, it can be viewed and copied at will. Some data must be purchased, and some is off-limits to all who do not possess the correct password or software key. An avatar that tries to access such encrypted data gets nothing but a jumble of indecipherable words. A user may attempt to break the data encryption with a full-round action and a Computer Use check against a DC that varies depending on the level of encryption. Decrypted data appears in words or terms that the avatar and its user can understand. Once an avatar has access to restricted information, the following options become available.

Altering Data: Altering a relatively small piece of data (such as a brief message) requires a full-round action and a successful DC 15 Computer Use check. Altering a larger chunk of data also requires a DC 15 Computer Use check but takes 1 minute or longer (GM’s discretion).

Copying Data: An avatar can take a move action to copy a given piece of data (no Computer Use check required).

Destroying Data: An avatar that gains access to a particular piece of data may destroy it as a full-round action (no Computer Use check required). The destroyed data is lost and can no longer be accessed by normal means on the VRNet node.

PLAYING GAMES

One of the most common uses of the VRNet is entertainment—particularly games. Various popular games place avatars in nodes modeled after gladiatorial arenas, battlefields, racing tracks, alien motherships, and other exotic environments.

SAMPLE NODES

The following sample nodes represent some of the most common kinds of nodes that d20 Future characters might find and explore on the VRNet. Each entry includes a description of the node’s visual style, a brief history and statement of its purpose, and several pieces of relevant information that the GM needs to run an adventure in it. The terms used to present this information are defined below.

Type: A node can be coded as private, public, or private/public. Private nodes are not accessible to just anyone, and users wishing to gain entrance without the proper authorization or software key must hack their way in with a successful Computer Use check (DC varies with the security). Public nodes are open to everyone. A

EVERYTHING IS SOFTWARE

Every object and creature on the VRNet is some kind of software. Buildings and rooms are simply graphical interpretations of a file structure program, avatars are merely collections of processes belonging to a single user, and even agents, viruses, and other autonomous “creatures” in cyberspace are just carefully crafted pieces of artificial intelligence serving pre-programmed purposes.

The VRNet uses simple actions of the avatar to execute complex commands. Thus, not only is everything software, but every action is a symbol. When an avatar walks through a door, it is actually following an electronic pathway to another part of the system. Virtual combat is represented in easily understandable terms (punches, kicks, gunshots, and so forth) so that the user’s mind can grasp the action being represented without needing to know the details.

THE HINET

A technological descendent of the VRNet, the Hyper-Immersion Network (HINet) comes into existence around the end of PL 7. Unlike its predecessor, which can only emulate images and occasionally textures through the interface hardware, the HINet is a completely realistic virtual world that is completely indistinguishable from the real one.

The HINet functions in exactly the same ways as the standard VRNet does, except that accessing the HINet requires a neural interface to transmit impulses directly to the user's brain. The technology is so advanced that every sensation, every smell, and every texture is perfectly rendered in virtual space, and avatar interaction is exactly like personal interaction. Avatar combat feels realistic, and the user actually feels the pain of an injury to her avatar. Unimaginable worlds can be explored in their full splendor without ever having to leave home.

The downside of this amazing experience is that people on the HINet become so completely immersed in the virtual world that they are unable to tell the difference between it and their own reality. Deaths can result from people staying on the HINet so long that they forget to nourish their physical bodies. Thus, the use of HINet interfaces is usually carefully monitored.

private/public node is accessible to everyone but has some private areas or zones intended solely for administrators or other specified users.

Portal DC: An unauthorized VRNet user must make a Computer Use check against the node's Portal DC to grant his avatar access to the node or to unlock a restricted area within it. Not all of a node's portals are necessarily the same; some may be unlocked, while others may have higher or lower Portal DCs than normal.

Permissions DC: Whenever an avatar attempts to execute a program not normally allowed in the node, the user must make a Computer Use check against the node's Permissions DC. If the check succeeds, the program can be executed.

Detection Range: An avatar that fails an attempt to open a locked node portal or execute a prohibited program may inadvertently trip the node's security systems. The user must fail the check by an amount equal to or higher than the node's detection range to activate its security countermeasures.

Active Administration: This entry denotes whether the node has an active, sentient administrator (that is, a VRNet user—typically the node's designer). A “no” in this field means that automated programs monitor security for the node.

LORD VAPOR'S LOUNGE

Named after a famous 21st century hacker, Lord Vapor's Lounge is a virtual hotspot where the VRNet elite gather to socialize within the confines of cyberspace. A natural evolution of the “chat rooms” that became popular in the early days of the Internet, Lord Vapor's Lounge is one part nightclub and one part underworld haven. Users from every segment of society visit the lounge, and the anonymity provided by their avatars makes it easy for patrons to hide their real-world social standing. Even so, however, users with “designer avatars” (virtual representations crafted by the most expensive VR designers) enjoy plenty of attention in Lord Vapor's Lounge and are often treated like film stars by the “rabble.”

The node is modeled after the most cutting-edge nightclubs and has evolved over the years, changing with every passing fad. The lounge features a central meeting area where thousands of avatars

can interact in public, plus private and group rooms connected by portals to the main area.

The social club aspect of Lord Vapor's Lounge is merely its surface purpose, however. Over the years, this node has become a haven for hackers and other elite VRNet users who wish to meet and discuss the latest VR software. Pirated and illegal software is exchanged every nanosecond in the back rooms of Lord Vapor's Lounge, and anyone wishing to find a particularly talented hacker would do well to make some friends among the node's administrative staff. Since the node is a known haven for troublemakers, Lord Vapor's Lounge has a permanent software block on all weapons. Thus, any user wishing to have an avatar employ a weapon program here must first succeed on a Computer Use check against the node's Permissions DC.

Type: Public.

Portal DC: 25.

Permissions DC: 30.

Detection Range: 5.

Active Administration: Yes.

VRBANK

The global banking service known as VRBank operates entirely within the VRNet, and its node is a hub of commercial and corporate activity. Customers come here to conduct bank transactions, examine their funds, make currency exchanges, and even get financial advice from customer support avatars. The VRBank node is heavily monitored, just like a real bank would be.

Graphically, the node resembles a massive office building. The ground floor offers hundreds of rows of avatar bank tellers, plus several thousand automatic banking machines. The portal to rest of the node looks like an elevator sitting off to one side, and like an elevator, it can transport avatars to any number of locations within the node. VRBank also features a number of areas in which customers can converse in any language with the avatars of bank employees, as well as private, restricted areas where only bank employees and executives may go. The node also has an area known as the Vault, where all bank transaction programs are run and data files containing account information are stored.

Type: Private/public.

Portal DC: 20.

Permissions DC: 25.

Detection Range: 5.

Active Administration: Yes.

WATCHTOWER

Watchtower is a popular public node used by avatars to navigate the vastness of the VRNet. Privately owned but available to the general public, Watchtower is merely a graphical representation of a massive, searchable database of VRNet nodes. The search engine of choice for most VRNet visitors, Watchtower can search for a particular VRNet node by owner, content, services, or almost any other aspect that can be described in words. Watchtower also allows visitors to step through portals directly to their chosen nodes, making travel to any given node a simple matter of entering a search criterion and popping through a portal.

Watchtower's graphic design is reminiscent of a lighthouse. Avatars enter the lower level of a tall, cylindrical tower and give their search phrases to an automated avatar dressed as a mariner. A short trip up an elevator brings them to the central area of the lighthouse, where the windows display a panoramic view of all nodes that match the search phrases. Once the visiting avatar selects a node, a portal to it opens in the center of the room.

Type: Public.
Portal DC: 15.
Permissions DC: 15.
Detection Range: 10.
Active Administration: No.

AVATARS

Avatars are software representations of individual characters or programs. Every user must have an avatar to interact with any portion of the VRNet. In a sense, the avatar is the user's eyes and ears in virtual space.

An avatar takes the form of a three-dimensional interactive model that cannot overlap with any other object in the VRNet—that is, it occupies its own virtual space. More than just a reflection of its user's personality, an avatar is a collection of allocated memory that can transfer the user's personal programs from node to node. Avatars also represent their users in VRNet combat, and any attacks made against an avatar actually represent attacks on the hardware and software of the user's computer.

Avatars can take many forms and have many functions, and many are quite sophisticated, but even an amateur VRNet user can put together a unique avatar within a matter of moments. All VR computer hardware comes with a selection of default avatars that can be used on the fly, but the typical VRNet user creates her own custom avatar that she can access from any computer system. If an avatar is destroyed, the user must create another one from scratch.

Every avatar is linked to a particular user and system. A floating, formless avatar that drifts from node to node and cannot be touched might prove quite useful to someone with subterfuge on her mind, but no such avatars can exist. This restriction is built into all of the software and hardware that makes the VRNet work.

HERO-CREATED NODES

Heroes in any campaign that prominently features the VRNet may want to create their own nodes at some point. To do so, a character must first purchase a VRNet server, which costs approximately the same as a standard computer. He must then spend a minimum of 1 hour designing the basic visual style of the node. A truly elaborate node takes significantly more time to create, and designers sometimes spend several hours a day creating content for their nodes.

The owner of a node determines who can and can't enter it. The portal software and permissions software that come with the server allow the owner to lock any or all of the node's portals and to prevent the execution of certain programs. The owner must make two Computer Use checks, the results of which determine the node's Portal DC and Permissions DC, respectively. The owner can take 20 on both of these checks.

A node is under active administration only when its creator's avatar (or the avatar of an administrator hired by the creator) is active within the node. If no administrator avatars are present, the node's default detection range is 10. When the node is being actively administered, the detection range is 5. If the node's detection range is violated, the owner or other administrator instantly becomes aware of the violation if he is online. Certain programs and class features can reduce a node's detection range.

POINT-OF-ORIGIN COMPUTERS

The computer with which a user logs onto the VRNet is called his point-of-origin computer. Every point-of-origin computer has a built-in node (the virtual, three-dimensional equivalent of an Internet home page) called the point-of-origin node. Many users employ VR security software to protect their point-of-origin computers and nodes against hackers (see VRNet Software for examples).

When the user logs in, his avatar appears in the point-of-origin node. If he does not have his own avatar, a pregenerated one is created for him so that he can explore the VRNet. He can then alter his avatar's appearance at any time to suit his personal taste. When he logs off of the VRNet, his avatar simply dissolves, disappearing from wherever it was in the virtual universe at the time. When he logs back on, the avatar reappears in the point-of-origin node.

AVATAR APPEARANCE

No "typical" avatar exists—a user may represent himself with anything from a stick figure to a Roman gladiator to a Ray Harryhausen skeleton. Lovable cartoon characters are quite popular, as are heroic figures such as wizards and valkyries. Most hackers and veteran VRNet users prefer to design their own custom avatars as unique personal statements. Others (particularly wealthy users with plenty of money to spend) pay professional avatar designers hefty sums of money to create avatars that cannot be duplicated—the VRNet equivalent of hiring a personal tailor or fashion designer to forge a unique "look." A massive toolset is available for the creation of avatars, so VRNet users have almost boundless resources available for creating avatar designs.

Avatar size is limited to the VRNet equivalent of a Medium-size character, since collision problems could occur with giant avatars in small node spaces. Most VRNet nodes have programs that detect and dispel inappropriately sized avatars, although talented hackers can sometimes modify their avatars' sizes for short periods of time before their handiwork is detected and scrapped. Otherwise, the VRNet imposes few limitations on avatar appearances, and the virtual community tends to encourage creativity.

AVATAR UPGRADES

Besides representing its user in VRNet nodes, an avatar also has the ability to store software. Whenever a user writes a program, she must store it in her avatar's available memory or it cannot be used on the VRNet. Any avatar can hold up to ten blocks of available memory, regardless of the specific VR software and hardware in use. If the avatar doesn't have enough available memory blocks to store the desired program, the user must delete other programs to create enough space for the new one. Each program has a standard memory cost, which indicates the number of memory blocks required to store it. The author chooses an object to represent the program in the VRNet during the design process, and the avatar wears, holds, or carries that object from node to node as long as it has the program in its memory.

AVATAR STATISTICS

An avatar has its own statistics block, which replaces that of the user within the VRNet. The avatar statistics block is pared down to include only those values relevant to adventuring in VRNet nodes.

Challenge Rating (CR): An avatar's CR is equal to its user's character level.

HD/hp: An avatar has as many Hit Dice (d6s) as its user has character levels. It has maximum hit points for each Hit Die and gains bonus hit points equal to its user's ranks in the Computer Use skill rather than adding points based on its Constitution score. For example, the Hit Dice entry for the avatar of a 4th-level Smart hero with 7 ranks in Computer Use is 4d6+7 HD, and it has 31 hit points. An avatar that is reduced to 0 hit points is destroyed and cannot be reused.

A VRNet user who takes levels in the Cybernaut advanced class (see Cybernaut, below) can increase her avatars' base Hit Die type from a d6 to a d8, a d10, or a d12.

Massive Damage Threshold (Mas): An avatar's massive damage threshold equals its user's Intelligence score. If an avatar takes damage in excess of its massive damage threshold from a single attack, its user must succeed on a DC 20 Fortitude save or the avatar dissolves and the user is instantly disconnected (see Disconnected!, below). Disconnection does not destroy the avatar, and it can reenter the VRNet as soon as its user gets back online.

Initiative (Init): The avatar's initiative modifier equals its user's Intelligence modifier plus any other bonuses the user may have from class features or feats that specifically apply to the avatar's initiative bonus.

Speed (Spd): An avatar has a base speed of 30 feet within any VRNet node. Special software or user class features may modify this speed.

Defense: An avatar's Defense equals 10 + its user's class bonus to Defense + its user's Intelligence modifier + any applicable software modifiers. Touch attacks against the avatar ignore armor software modifiers but not deflection software modifiers. A flat-footed avatar loses its user's Intelligence bonus to Defense.

Base Attack Bonus (BAB): An avatar's base attack bonus equals its user's ranks in the Computer Use skill.

Attacks (Atk): The user's Intelligence modifier applies to all attack and damage rolls instead of his Strength and Dexterity modifiers. The avatar gains multiple attacks per round at the same rate as characters in the real world would (an extra attack when its base attack bonus reaches 6, 11, and 16).

Fighting Space (FS): An avatar has a fighting space of 5 feet by 5 feet.

Reach: An avatar has a reach of 5 feet.

Special Qualities (SQ): An avatar may have special qualities imparted by either special software or its user.

Allegiances (AL): Avatars have allegiances just as normal characters do. Even an autonomous piece of software (such as an agent) always owes allegiance to an individual, a group, or a particular node.

Saves (SV): An avatar has the same base save bonuses as its user. Apply the user's Intelligence modifier instead of his Constitution, Dexterity, or Wisdom modifier to the avatar's base Fortitude, Reflex, and Will saving throws.

Abilities: An avatar does not have ability scores. Any actions that aren't normally resolved using skill checks are resolved with Computer Use checks instead.

Skills: Avatars do not have skills of their own. Whenever an avatar must make a skill check, its user makes the check on its behalf. Since an avatar's effectiveness in the virtual world is determined mostly by its user's computer skills, a Computer Use check is used to resolve all skill checks except Bluff, Concentration, Decipher Script, Diplomacy, Gamble, Gather Information, Intimidate, Investigate, Knowledge (all skills), Research, and Sense Motive.

For example, suppose Brandon's avatar needs to make a Hide check to avoid detection in a node. Instead of making a Hide check, Brandon makes a Computer Use check, since hiding his avatar requires some digital legerdemain on his part. Later, Brandon's avatar attempts to bluff its way past a node guardian. Since bluffing requires Brandon to use his own wits instead of his computer skills, he makes a Bluff check on his avatar's behalf, just as he would if he were personally involved.

Languages: An avatar reads, writes, and speaks the same languages as its user does.

Software: VR software installed in the avatar is listed in this entry, in alphabetical order. The memory cost of each piece of software is given in parentheses.

Available Memory Blocks: Every avatar has ten memory blocks, but each piece of installed VR software uses up one or more of these blocks, depending on its memory cost. The number of unused memory blocks is noted in this entry.

SAMPLE AVATAR

The following avatar—a sword-wielding knight named Sir Pixilot—belongs to a 4th-level Smart hero with an Intelligence score of 15 and 7 ranks in the Computer Use skill.

Sir Pixilot: CR 4; HD 4d6+7; hp 31; Mas 15; Init +2; Speed 30 ft.; Defense 23, touch 13, flat-footed 21 (+1 class, +2 Int, +8 heavy armor, +2 heavy shield); BAB +7; Atk +9/+4 melee (1d8+2, melee weapon); FS 5 ft. by 5 ft.; Reach 5 ft.; SQ software; AL creator; SV Fort +3, Ref +3, Will +4.

Software: Data storage (1), heavy armor (3), heavy shield (2), melee weapon 1d8 (2), supergrip (1), voicebox (1).

Available Memory Blocks: 0.

AVATAR COMBAT

On the VRNet, combat occurs whenever one user (or program) attacks another. Avatars representing the various users face off on a virtual battlefield, fighting with software that appears as weapons until one side or the other is destroyed or driven off.

Combat on the VRNet functions exactly the same as it does in the real world, with the following exceptions.

- An avatar reduced to 0 hit points is destroyed. All of a destroyed avatar's programs are lost, and its user is abruptly disconnected from the VRNet (see Disconnected! below).
- Avatars cannot attack objects or weapons. Objects are pieces of software and can be removed only by dissipation (see Dissipating Objects in a Node, below). Weapons are programs that must be hacked to damage them.
- Avatars cannot deal nonlethal damage and are immune to nonlethal damage.
- Avatars cannot grapple.

AVATAR COMBAT OPTIONS

In the VR universe, an avatar moves and uses weapons like a normal character. However, its speed and combat ability are functions of its programming and its user's prowess with a computer. An avatar can enhance its speed with special software, and weapon software exists to create almost any portable weapon imaginable, from virtual assault rifles to oversized boxing gloves.

Some of the special combat options available to avatars work differently than their real-world counterparts do. These differences are summarized below.

Bull Rush: An avatar can attempt a bull rush, but instead of making opposed Strength checks, the colliding avatars make opposed Computer Use checks. An avatar that is larger than its opponent does not get a special size bonus on the check, and an avatar with multiple legs does not get a special stability bonus on the check.

Disarm: An avatar with a melee weapon can attempt to disarm another avatar by removing its melee or ranged weapon. If the defending avatar has multiple weapon programs installed, the attacker may choose which one to attack.

A disarm attempt provokes an attack of opportunity from the defender. The attacker and defender then make opposed Computer Use checks, and the defender's check result becomes the DC for the attacker's check. If the attacker's check succeeds, the weapon falls into a square adjacent to the defender. As a move action, any avatar can pick up a weapon that has fallen to the ground.

Feint: Just as in regular combat, a feint is an attempt to draw an opponent's attention away from the real attack. On the VRNet, dummy programs might mimic other attack modes while the real weapon program attacks unseen.

A feint requires a successful Bluff check opposed by the defender's Sense Motive check. If the feinting avatar succeeds, the next attack it makes ignores the defender's Intelligence bonus to Defense (if any).

Trip: An avatar can attempt a trip attack, but instead of making opposed ability checks, the avatars make opposed Computer Use checks. An avatar that is larger than its opponent does not get a special size bonus on the check, and an avatar with multiple legs does not get a special stability bonus on the check. Attempting a trip always provokes an attack of opportunity, regardless of the weapon the attacker is wielding.

VRNET HAZARDS

Many hazards await VRNet explorers. Some of these hazards can severely damage the computer systems of inexperienced users, while illegal VR programs can even deal physical harm to reckless users. Despite such perils, the VRNet is considered safe enough for the general public—at least as safe as driving on any crowded superhighway.

DISCONNECTED!

Whenever an avatar is reduced to 0 hit points, it is destroyed and its user is automatically disconnected from the VRNet. Certain programs and VRNet hazards can also cause disconnection.

The shock of sudden disconnection from a virtual world is hard on the senses and can disorient a user for a brief moment. Whenever a VRNet user is forcibly disconnected, he must make a successful

DC 15 Will save or be stunned for 1d6 rounds. For HINet users, the Will save DC increases to 20, and the stunning effect lasts for 2d6 rounds (see The HINet sidebar for details).

HACKED!

A major disadvantage to maintaining a VRNet presence is that it opens up the user's system for hacking. Almost any avatar on the VRNet can be traced back to its point of origin using complicated programs known as tracers. The only known exceptions are avatars protected by certain sophisticated programs designed to mask their points of origin. If an avatar's point of origin is discovered, its user's computer becomes a target for hacking. Through a somewhat complicated process, malicious users can target attacks against the computer system from which an avatar originates rather than the avatar itself. A point-of-origin computer can be hacked and altered just as any node on the VRNet can, using the same rules for program control and data manipulation.

MINDSCRAPED!

Mindscraping is among the reasons that many people are afraid to use the VRNet. A mindscrapper uses computer programs to invade and cripple the minds of other VRNet users while they are online. When combined with false sensory perceptions generated by VRNet software, certain images and sounds can trigger seizures or even strokes in the victim. Mindscraping software works a lot like the hacking software that is sometimes used to trace and attack an avatar's point-of-origin computer (see Hacked! above). Mindscraping is a serious crime on just about any world equipped with VRNet technology.

A VRNet user subjected to mindscraping must succeed on a Will save or take ability damage, as given on the Mindscraping Programs Table below. Each mindscraping program has its own unique flavor and statistics, as follows.

Program Name and Challenge Rating: Most mindscraping programs have colorfully sinister names. Like a trap, each also has a Challenge Rating (CR).

Will Save DC: This entry gives the DC for the Will save to negate the program's effects.

Damage: This entry gives the amount and type of ability damage dealt by the mindscraping program.

Purchase DC: This entry gives the purchase DC of the program.

Restriction: All mindscraping programs are illegal, but they can be purchased on the black market (see Restricted Objects on page 93 in the d20 Modern Roleplaying Game).

SNARED!

Snares are particularly devious hazards used by administrators to catch hackers in the act. A snare is just what it sounds like—a program designed to capture a single avatar and hold it in place. Snares function by overloading the movement software of a par-

MINDSCRAPING PROGRAMS TABLE

Program Name And Challenge Rating	Will Save DC	Damage	Purchase DC	Restriction
Dimwit (CR 2)	12	1d6 Int	27	Illegal (+4)
IQ Screw (CR 4)	15	2d6 Int	29	Illegal (+4)
Skullcracker (CR 6)	18	1d6 Int, 1d6 Con	32	Illegal (+4)
Brainvade (CR 6)	18	3d6 Int	33	Illegal (+4)
Eggburner (CR 8)	21	1d6 Int*, 2d6 Con	35	Illegal (+4)

*One-half of this damage (rounded down) is permanent ability drain.

ticular avatar with junk data and resource-consuming processes, effectively immobilizing it until the overload stops or the avatar manages to escape. Snares are similar to traps in the real world in that they can take on many visual forms and each is set to go off in a certain nodal location under certain conditions.

An avatar that triggers a snare is immediately immobilized. Detecting a snare requires a Computer Use check at a DC determined by the complexity and design of the software (usually 21 or higher). To escape from a snare, an avatar must make a successful Computer Use check at the same DC as the one to detect it.

SPIKED!

A spike is an automated tracer program that searches out an avatar's point-of-origin computer and returns that data to the node that sent the spike. Like snares, spikes are location-based hazards similar to traps. Once an avatar's point-of-origin computer has been located, any active administrator on the node can either launch an attack on it or alert the proper authorities to the unauthorized violation. A spike can be detected with a Computer Use check at a DC determined by the spike's design (usually 21 or higher).

VRNET HARDWARE

Certain hardware is required to access and use the VRNet. The following pieces of hardware come standard with any computer system capable of VRNet access.

VRNET CONNECTION

The most important part of the hardware package is the VRNet connection. A computer requires some sort of outside access to the VRNet, in the form of either a satellite uplink or a direct connection to another computer that has VRNet access. In the latter situation, several users can link their computers together via landlines and dive into the VRNet as a group. See Chapter Three: Gear in the d20 Future book for more information on the various connection types.

DISPLAY

A VRNet connection requires a display capable of panoramic and three-dimensional imaging. Thus, flat screens and monitors cannot be used to browse the virtual world. Typically, a VRNet-capable system incorporates display goggles, display contacts, and neural interfaces that not only display images but also detect the user's head movements. This latter piece of equipment allows avatars to "look around" based on the user's movements alone. See Chapter Three: Gear in the d20 Future book for more information on the various display types.

MANIPULATOR GLOVES

Manipulator gloves are thin, lightweight, formfitting gloves covered with sensors that come as standard equipment with most computers. These gloves are used to direct the avatar's hands so that it can to pick up and manipulate items in the VR universe based on its user's movements. Additionally, a VRNet user can use the gloves to access programs or call up hovering menus with only a few flicks of the fingertips.

VRNET SOFTWARE

The bulk of the VRNet is composed of software that operates across the cyberlanes at all times. Since everything that can be seen or manipulated in the virtual world is a program, avatars must be able to use and interact with software of all types to make effective use of the VRNet. Programs on a node are typically used to design its visual style, to create inanimate and interactive objects, and to

protect against hackers. Avatars interact with these pieces of software only when necessary, and they are rarely called upon to modify or dissipate them. Most of the time, the only programs an avatar must deal with are those carried in its own available memory and those carried and used by other avatars.

When a VRNet user writes a new program, she has the option of making it available as source code (basic text data that defines the program). Source code is effectively a set of program plans or blueprints that can be copied and used by other VRNet users. It should be treated like all other forms of data for the purpose of copying, altering, or deleting code, though altering a program's code does not alter other copies of the same program.

INSTALLING PROGRAMS

Whenever a user writes a new program, it must be installed in the avatar's available memory to function on the VRNet. Installation is a free action that can be performed immediately after the program is written. A program cannot be used until it is installed in available memory, and it vanishes if it is not installed before the avatar moves to another node. If the avatar doesn't have enough free memory blocks to install the program, the user may delete other programs to make space.

WRITING AND DELETING PROGRAMS

To write a program, a VRNet user must make one or more Computer Use checks, each of which requires 1 round. The result of each check must equal or exceed the program's Write DC or the user hits a roadblock and wastes the round. The program is not complete until the user has succeeded on the requisite number of Computer Use checks. While a VRNet user is writing a program, her avatar is paralyzed and unable to act.

Deleting a program is a much simpler process than writing one. A character need only spend a move action to delete the program from available memory, and no skill check is required.

DISSIPATING OBJECTS IN A NODE

When an avatar encounters an inanimate or interactive object in a node, its user may choose to dissipate it. To do so, he must first gain control over the object by making an attack action and a Computer Use check against the Permissions DC of the node. If the check succeeds, the object is deleted. Some objects, particularly those integral to the node's functionality, may have higher-than-normal Permissions DCs at the GM's discretion. A dissipated object is effectively destroyed, and the node administrator must reconstruct it to get it back.

Barriers (including walls within a node) and portals are neither inanimate nor interactive objects, and they cannot be dissipated.

VRNET SOFTWARE DESCRIPTIONS

The VRNet Software Table, below, gives a summary of various kinds of VRNet software. The following terms are used to describe programs on the table.

Program Name: This term denotes the type of software described.

Memory Cost: This value is number of memory blocks the software consumes when installed in an avatar.

Write DC: This number is the DC for the Computer Use checks needed to write the software program.

Number of Successes: This value is the number of successful Computer Use checks required to write the program.

The programs given on the VRNet Software Table are detailed below.



VRNET SOFTWARE TABLE

Program Name	Memory Cost	Write DC	Number of Successes
Agent	1	15	2
Antivirus software	1	15	1
Armor			
Light armor (+2)	1	10	1
Medium armor (+5)	2	15	1
Heavy armor (+8)	3	20	1
Automation software			
QuickCopy	1	10	1
Teleport	1	15	2
Bullseye			
Bullseye +1	2	20	2
Bullseye +2	4	25	2
Bullseye +3	6	30	2
Communications software			
Telepath	1	10	1
Voicebox	1	10	1
Data storage	1	10	1
Deflection screen			
Deflection +1	2	20	2
Deflection +2	3	25	2
Deflection +3	4	30	2
Firewall	5	25	3
Illusion software			
Invisibility cloak	5	25	3
Mist	2	20	1
Phantom avatar	2	15	1
Maxrunner			
Maxrunner +5 ft.	1	20	2
Maxrunner +10 ft.	2	20	3
Megastrike			
Megastrike +1	1	15	1
Megastrike +2	2	20	1
Megastrike +3	3	25	1
Megastrike +4	4	30	1
Shield			
Light (+1)	1	10	1
Heavy (+2)	2	15	1
Supergrip	1	15	2
Tracer	3	20	3
Virus ¹			
Bruhaha virus	1	20	3
Farewell virus	3	25	3
Guillotine virus	3	25	3
Weapon			
Area weapon1 (3d6)	3	15	3
Area weapon1 (4d6)	4	20	3
Area weapon1 (5d6)	5	25	3
Melee weapon (1d6)	1	10	1
Melee weapon (1d8)	2	15	1
Melee weapon (2d6)	3	20	1
Ranged weapon (2d6)	4	20	2
Ranged weapon (2d8)	5	25	2
Ranged weapon (2d10)	6	30	2

1. Single-use program.

AGENT

Agents are useful programs designed to assist in VRNet navigation. Most beginning VRNet users employ agents to speed up routine tasks.

For the most part, agents are simply data search and retrieval programs that can move independently throughout a node, or even throughout the entire VRNet, to obtain data requested by an avatar. Most agents are simple programs with no artificial intelligence, but some users choose to give their agents personalities. Typically, an agent is incapable of performing actions that require it to overcome a Permissions DC and can act only within the bounds of legal VRNet usage. An agent does not have memory blocks in which to store software programs.

To generate an agent's statistics, use the rules for generating avatar statistics (see Avatar Statistics, above), except as follows.

Challenge Rating (CR): An agent cannot make attacks or deal damage in the virtual world. Hence, it has no CR.

HD/hp: An agent has one-half as many Hit Dice (d4s) as its creator has character levels (minimum 1). It has maximum hit points for each Hit Die and gains bonus hit points equal to its user's ranks in the Computer Use skill rather than adding points based on its Constitution score. For example, the Hit Dice entry for the agent of a 1st-level Smart hero with 4 ranks in Computer Use is 1d4+4 HD, and it has 8 hit points. An agent that is reduced to 0 hit points is destroyed and erased from memory.

Massive Damage Threshold (Mas): An agent's massive damage threshold equals its user's Intelligence score. If an agent takes damage in excess of its massive damage threshold from a single attack, its user must succeed on a DC 20 Fortitude save or the agent is erased and must be rewritten from scratch.

Defense: An agent's Defense equals 10 + its user's Intelligence modifier + any applicable software modifiers. The user's class bonus to Defense does not apply. Touch attacks ignore armor software modifiers but not deflection software modifiers. A flat-footed agent loses its user's Intelligence bonus to Defense.

Base Attack Bonus/Attacks: An agent has no attacks and cannot deal damage.

Saves (SV): An agent has no good saving throws. Apply the user's Intelligence modifier instead of her Constitution, Dexterity, or Wisdom modifier to the agent's base Fortitude, Reflex, and Will saving throws.

Skills: An agent has 10 skill points. Its creator may spend these points to buy ranks in one or more skills at the time the agent program is written. This initial allocation cannot thereafter be changed, although the agent can be erased and replaced. An agent can have as many ranks in a particular skill as its creator does. For instance, if Roberta has 5 ranks in Research, she can program an agent with up to 5 ranks in the Research skill. An agent applies no ability modifiers to its skill checks.

Unlike avatars, agents make skill checks normally. The creator does not make skill checks on the agent's behalf, and Computer Use checks are not used in place of other skill checks.

SAMPLE AGENT

Below are the statistics for a typical agent, using the generic low-level Smart/Dedicated Ordinary on page 281 of the d20 Modern Roleplaying Game as the creator.

Typical Agent: CR —; HD 1d4+4; hp 8; Mas 15; Init +0; Speed 30 ft.; Defense 12, touch 12, flat-footed 10 (+2 Int); BAB —; Atk none; FS 5 ft. by 5 ft.; Reach 5 ft.; SQ none; AL creator or node; SV Fort +2, Ref +2, Will +2.

Skills: Computer Use +2, Investigate +2, Research +2, Search +4. [insert Illo #82864: Agent and Manhole portal about here]

ANTIVIRUS SOFTWARE

An antivirus program grants the avatar a +4 resistance bonus on Fortitude saves against viruses (see Virus, below).

ARMOR

An armor program protects an avatar against virtual weapon damage by improving its Defense. Unlike real-world armor, armor programs impose no maximum Dexterity bonus, and no armor or speed penalties apply. Most armor programs appear on the avatar as some type of actual armor—plate mail, riot gear, or even an envelope of energy. The bonuses that the various types of armor programs provide are given in the table below.

Armor Program	Armor Bonus to Defense
Light armor	+2
Medium armor	+5
Heavy armor	+8

AUTOMATION SOFTWARE

Automation software makes complex tasks easier by allowing the user to ready actions. In this way, the avatar can simply perform the desired actions without the user issuing a command.

QuickCopy: This program enables an avatar to copy data as a free action instead of a move action.

Teleport: This software enables the user to specify a condition that, when met, teleports his avatar to another node of his choosing. For example, a user might input the node address for Lord Vapor's Lounge, with the condition that his avatar should teleport there the instant that its hit points drop below 10. The destination must be a public node or have a public area within it—an avatar cannot teleport into a restricted node. Altering the condition or the destination requires a full-round action, and altering both takes two full-round actions.

BULLSEYE

A bullseye program allows an avatar to hit targets more effectively with its ranged weapons. The bonus that the avatar gains on its ranged attack rolls determines the program's memory cost and Write DC, as given in the VRNet Software Table.

COMMUNICATIONS SOFTWARE

Communications software sends information from one location to another. Most such software is easy to program and can be used by almost anyone. Many VRNet users consider communications programs essential and keep them installed in their avatars at all times.

Telepath: The telepath program is a simple piece of software designed to send messages instantly from one avatar to another, either within the same node or from different nodes. Both avatars must have the telepath program installed to make use of it. Only the intended recipient can see or hear a message sent in this way, which comes in the form of either text or voice data. The telepath program is interrupted if either the sender or the receiver occupies a private (restricted) area that requires a Computer Use check against a Portal DC to gain access.

Voicebox: The voicebox program is essential for VRNet users who wish to communicate and interact with other users' avatars. The program gives an avatar a voice, enabling it to "speak" to other avatars in its presence. (In actual fact, the program allows the avatar to send other avatars streams of data. Within the virtual universe, this data is represented as the avatar speaking out loud.) A voicebox program does not enable internodal communication (communication across nodes); for that, an avatar needs the telepath program.

DATA STORAGE

Data storage programs are not really programs at all, but simple scripts that convert available memory into data storage space. They allow an avatar to carry significant amounts of data from node to node without the need to store it at any central location (such as on the point-of-origin computer). In addition, certain other pieces of software require data storage programs to function.

DEFLECTION SCREEN

Deflection screen software creates an invisible force field around the avatar that protects it against attack. The size of the deflection bonus determines the program's memory cost and Write DC, as given in the VRNet Software Table.

FIREWALL

A firewall program allows an avatar to erect a barrier that blocks certain other kinds of software. When activated in the virtual world, a firewall takes the shape of a semitransparent wall that springs into place over a door or stretches from one wall to another in a room within a node. Once in place, the firewall remains active and immobile until the avatar dissipates it as a free action, or until a node administrator gains control over it and dissipates it.

The firewall prevents one particular kind of program from passing through it. The affected software must be chosen from the following list at the time the firewall is erected: agents, anti-intrusion drones, armor programs, automation software, combat drones, communications software, data storage, firewalls, illusion software, program shields, tracers, viruses, or weapons. (GMs may also add other types of programs to the list for their specific campaigns.) Any avatar may pass through a firewall, but any barred programs that are installed in their available memory remain on the other side of the firewall.

An avatar may sneak programs past a firewall undetected with an opposed Computer Use check against the firewall's creator. A +5 bonus applies to the creator's check. If the avatar fails, the forbidden program is automatically deleted.

All firewalls are single-use programs that are deleted from available memory as soon as they are used, though multiple firewalls can occupy the same virtual space. Erecting a firewall requires an attack action.

ILLUSION SOFTWARE

Illusion software modifies an avatar's image in some fashion, often for defensive reasons. Most node administrators prohibit the use of such software. If an avatar attempts to use an illusion program within an actively administered node where it is prohibited, the user must make a Computer Use check against the node's Permissions DC. If the check fails, the software does not function as long as the avatar remains in the node, although the avatar can leave the node and reenter to try again. If the check fails by an amount equal to or greater than the node's detection range, the administrator is alerted to the avatar's failed attempt.

Illusion software comes in many forms, but three of the most common ones are described below.

Invisicloak: The invisicloak program makes an avatar invisible. The effects are identical to those of the invisibility spell (see the d20 Modern Roleplaying Game, page 349), except that the duration is unlimited. Activating or deactivating the invisicloak requires an attack action.

Mist: The mist program blurs the edges of an avatar's image, making it more difficult to hit in VR combat. An avatar using this program gains one-half concealment (20% miss chance). Activating or deactivating the mist requires an attack action.

Phantom Avatar: The phantom avatar program creates a perfect facsimile of the avatar using it. The copy looks and acts exactly like the true avatar and must occupy a virtual 5-foot square adjacent to it. If no adjacent unoccupied squares are available, the program cannot run.

While the phantom avatar program is running, attacks made against the avatar have a 50% chance of targeting the facsimile instead. Any successful attack made against the facsimile (which has the same Defense as the original) dissipates it, and its attacks deal no damage. Activating or deactivating the phantom avatar requires an attack action.

MAXRUNNER

An avatar equipped with maxrunner software moves more quickly than normal. Its base speed increases by 5 feet or 10 feet, depending on the quality of the software (see the VRNet Software Table).

MEGASTRIKE

A megastrike program increases the damage an avatar deals with melee weapons (but not with ranged weapons). The bonus to damage determines the program's memory cost and Write DC, as given in the VRNet Software Table.

SHIELD

A shield program protects an avatar against virtual weapon damage by improving its Defense. Unlike real-world shields, shield programs impose no maximum Dexterity bonus, and no armor or speed penalties apply. Most shield programs appear on the avatar as some type of actual shield—a medieval shield, a riot shield, or even a translucent, floating disk of energy.

The bonuses that each type of shield program provides are given on the table below.

Shield Program	Shield Bonus to Defense
Light shield	+1
Heavy shield	+2

SUPERGRIP

The user of an avatar with a supergrip program gets a +4 resistance bonus on Computer Use checks made to resist disarm attempts (see Avatar Combat Options, above, for disarm rules).

TRACER

The purpose of a tracer program is to locate a given avatar's point-of-origin computer. Attaching a tracer to an avatar provokes an attack of opportunity and requires a successful melee touch attack. If the attack hits, the tracer program attaches to the avatar and begins scouring its datafiles for the address of its point-of-origin computer. The avatar may make a DC 15 Will save to block and neutralize the invading program. Failure means the tracer pinpoints the avatar's point-of-origin computer and transmits this information to its user.

VIRUS

A virus is designed to target and corrupt an avatar's programming. Attaching a virus to an avatar provokes an attack of opportunity and requires a successful melee touch attack. If the attack succeeds, the infected avatar must make a Fortitude saving throw to neutralize the virus. Failure means that one or more of the avatar's programs (determined randomly by the GM unless otherwise noted) is corrupted. Corrupted programs cease to function and must be deleted and replaced.

Viruses are single-use programs that are deleted from an avatar's available memory once successfully attached to another avatar. The most commonly used viruses are detailed on the table below.

Virus Name	Save DC	Corrupted Programs
Bruhaha	12	1d2
Farewell	15	1d4
Guillotine	18	11

1. Corrupted program selected by the attacker.

WEAPONS

Avatars use weapon programs to harm one another in combat. Such programs are grouped into three basic categories: area, melee, and ranged. In the virtual world, a weapon program appears in an avatar's hands as a specific object, such as a machine gun, a katana, or even a stop sign.

A weapon's size and appearance have no bearing on its effects in VR combat. For example, an avatar may wield a chainsaw that deals 1d6, 1d8, or 2d6 points of damage, depending on the complexity of the melee weapon software. Furthermore, the type of damage a weapon deals—piercing, slashing, bludgeoning, or energy—is irrelevant. Regardless of how they appear in the VR world, all weapons are merely programs designed to attack and destroy the programming of other avatars.

Although they are effective against avatars, most VR weapons cannot damage objects (see Dissipating Objects in a Node for details), though a few exceptions do exist. For example, a node architect may construct objects that are susceptible to weapon damage, either to make the node environment seem more authentic or to create obstacles that avatars can overcome through force.

Area Weapon: This category includes grenades, explosives, and devastating spell-like effects that target areas instead of specific avatars. An area weapon follows the rules for thrown explosives and has a burst radius of 10 feet (see the d20 Modern Roleplaying Game, pages 148–149). It cannot deal a critical hit. Area weapons are single-use programs that are deleted from available memory when spent.

For the most part, area weapon programs are quick to write but consume a significant amount of available memory. Creating an area weapon with an extra use increases the Write DC by 5. Increasing its damage by +1d6 points or its burst radius by +5 feet increases the Write DC by 5 and also costs an additional memory slot.

Melee Weapon: This weapon category includes swords, axes, spiked gauntlets, and other traditional weapons. Since melee weapon programs are simple, they take relatively little time to create and occupy less available memory than ranged weapons do.

Every VR melee weapon has a reach of 5 feet, a critical threat range of 20, and a critical damage multiplier of 2. Regardless of its appearance, its use does not provoke attacks of opportunity when wielded in combat.

Extending a melee weapon's reach to 10 feet increases the program's Write DC by 10 and also costs an additional memory slot. Increasing either its threat range or its damage multiplier by 1

increases the program's Write DC by 5 and the number of successes required by 1, and the program also takes up an additional memory slot.

Ranged Weapon: This category includes handguns, laser weapons, whips, eye beams, magic spells, bows, crossbows, shuriken, and other devices that target a specific avatar. They deliver attacks at a distance and are more difficult to create and store than melee weapons.

Regardless of its appearance, every VR ranged weapon has a maximum range of 300 feet, a range increment of 30 feet, a critical threat range of 20, and a critical damage multiplier of 2.

Extending a ranged weapon's maximum range by 30 feet or its range increment by 10 feet increases the Write DC by 5. Increasing either its threat range or its damage multiplier by 1 increases the program's Write DC by 5 and the number of successes required by 1, and the program also takes up an additional memory slot.

CYBERNAUT

A Cybernaut may not amount to much in the real world, but in the virtual world, he rules supreme. He spends an enormous chunk of his time meandering the ever-expanding universe of virtual reality nodes known as the VRNet in search of secrets, thrills, bragging rights, and dirty laundry.

The Cybernaut belongs to an elite community of hackers and self-styled digital emperors—rulers in invisible fortresses who can bend the rules of the VRNet to suit their whims. He typically spends more time in the virtual world than in the real one, emerging mainly to eat or sleep. He devotes more attention to his daring, intrepid avatar than he does to real friends or family, and why not? His avatar is everything he wants to be, anything he wants to be—a criminal, a movie star, a commando, a goth dominatrix, a teddy bear, a ninja, a cartoon character, or all of the above. Through this avatar, the Cybernaut can reach the unreachable, attain the unattainable, dominate the indomitable, and leave his digital mark on the world.

The Cybernaut is useful in campaigns in which the VRNet is used not only as a tool for gathering information but also as a means of interacting with the real world. Select this class if you want your hero to visit strange new realms in the blink of an eye, defeat the digital machinations of countless unseen rivals, and carry a really big gun.

The fastest path into this advanced class is from the Smart hero basic class, though other paths are possible.

REQUIREMENTS

To qualify to become a Cybernaut, a character must fulfill all the following criteria.

Skills: Computer Use 8 ranks, Knowledge (technology) 6 ranks.

Reputation Bonus: +2.

Special: The candidate must spend one month using the VRNet prior to taking levels in this class.

CLASS INFORMATION

The following information pertains to the Cybernaut advanced class.

HIT DIE

The Cybernaut gains 1d6 hit points per level. The character's Constitution modifier applies.

ACTION POINTS

The Cybernaut gains a number of action points equal to 6 + one-half his character level, rounded down, every time he attains a new level in this class.

A Cybernaut may spend his action points to modify rolls made while on the VRNet.

CLASS SKILLS

The Cybernaut's class skills are as follows.

Computer Use (Int), Concentration (Con), Craft (electronic) (Int), Disable Device (Int), Forgery (Int), Knowledge (popular culture, streetwise, technology) (Int), Profession (Wis), Read/Write Language (none), Repair (Int), Research (Int), Search (Int), Speak Language (none), Spot (Wis).

Skill Points at Each Level: 5 + Int modifier.

CLASS FEATURES

The following features pertain to the Cybernaut advanced class.

NODE STAR

A Cybernaut's reputation spreads quickly throughout the VRNet. Once per day, he can add his Reputation bonus to any single Computer Use skill check, even after the roll has been made.

NODERUNNER

The Cybernaut can perform amazing feats of programming legerdemain and accomplish tasks in the virtual world that other VRNet users cannot. At 1st level, and again at 4th, 7th, and 10th level, the Cybernaut gains a special ability chosen from the list below.

Backdoor: The Cybernaut learns how to slip his avatar into restricted areas that it has visited before. He gains a +10 competence bonus on Computer Use checks made to enter a private node (or a private room within a node) that he has previously entered or unlock a portal he has previously opened.

THE CYBERNAUT

Class Level	Base Attack Bonus	Fort Save	Ref Save	Will Save	Special	Defense Bonus	Reputation Bonus
1st	+0	+0	+1	+0	Node star, noderunner	+1	+0
2nd	+1	+0	+2	+0	Mighty avatar +1d6	+1	+0
3rd	+1	+1	+2	+1	8th-grade avatar	+2	+1
4th	+2	+1	+2	+1	Noderunner	+2	+1
5th	+2	+1	+3	+1	Mighty avatar +2d6	+3	+1
6th	+3	+2	+3	+2	10th-grade avatar	+3	+2
7th	+3	+2	+4	+2	Noderunner	+4	+2
8th	+4	+2	+4	+2	Mighty avatar +3d6	+4	+2
9th	+4	+3	+4	+3	12th-grade avatar	+5	+3
10th	+5	+3	+5	+3	Noderunner	+5	+3

Codecrack: The Cybernaut gains a +5 competence bonus on Computer Use checks made to decrypt and read encrypted data.

Compression: The Cybernaut learns how to program more efficiently so that his avatar can carry more programs in its available memory. By increasing the Write DC of any program by 5, the Cybernaut can reduce its memory cost by 1 (to a minimum of 1).

Memory Management: The Cybernaut can delete any number of programs from his avatars' available memory as a free action (instead of a move action).

Node Management: The Cybernaut knows how to monitor his own nodes (including his point-of-origin node) more closely than most users do. The detection range of any node that the Cybernaut creates is reduced by 2.

Wallhack: The Cybernaut can break the rules to move more easily through a node. With a successful DC 30 Computer Use check, he can dissipate a section of wall (or similarly impassable barrier) within a node. The wall section or barrier can be up to 10 feet high, 10 feet wide, and 5 feet thick.

MIGHTY AVATAR

At 2nd level, the Cybernaut learns to maximize the damage potential of his avatar, ensuring that its melee and ranged attacks are more forceful and destructive than those of lesser VRNet avatars.

Any melee or ranged weapon program installed in the Cybernaut's avatar deals an additional +1d6 points of damage. This extra damage increases to +2d6 at 5th level and to +3d6 at 8th level.

8TH-GRADE AVATAR

At 3rd level, a Cybernaut learns how to make his avatars tougher than those of most other VRNet users. The Cybernaut's avatar uses d8s instead of d6s for Hit Dice, and its massive damage threshold increases by +3.

10TH-GRADE AVATAR

At 6th level, a Cybernaut's avatar becomes even tougher. It uses d10s instead of d8s for Hit Dice, and its massive damage threshold increases by an additional +3.

12TH-GRADE AVATAR

At 9th level, a Cybernaut's avatar becomes as tough as it can be. It uses d12s instead of d10s for Hit Dice, and its massive damage threshold increases by an additional +3.

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This d20™ System game uses mechanics developed for the new Dungeons & Dragons® game by Jonathan Tweet, Monte Cook, Skip Williams, Rich Baker, and Peter Adkison. This game also uses mechanics developed for the Psionics Handbook by Bruce R. Cordell, the Call of Cthulhu® Roleplaying Game by Monte Cook and John Tynes, and the Star Wars® Roleplaying Game by Bill Slavicsek, Andy Collins, and JD Wiker. d20 Modern, D&D and Dungeons & Dragons are registered trademarks, and d20 and the d20 System logo are trademarks owned by Wizards of the Coast, Inc., a subsidiary of Hasbro, Inc. All Wizards characters, character names, and the distinctive likenesses thereof are trademarks owned by Wizards of the Coast, Inc.

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Rodney Thompson is a writer and developer from Chattanooga, Tennessee whose credits include the *Star Wars Hero's Guide* and the *d20 Future* book for Wizards of the Coast, *The Noble's Handbook* and *Mutants and Masterminds Annual #1* for Green Ronin, among others. Additionally, he was on the writing team for the Origins Award-nominated *Stargate SG-1 Roleplaying Game* and continues to work on sourcebooks for the Stargate product line. Rodney's work appears regularly in the pages of **Dungeon Magazine**.