

DIGITAL BEINGS

Although we often call them computers or robots, these are just parts of a digital being. The *Computer* is the brain of the machine. The *Robot* is its body. The artificial intelligence program that runs its operating system is its *Daemon*.

Computer = Brain.

Robot = Body.

Daemon = Soul.

Gamewise, digital beings play like characters but are built very differently. When the price is right they can upgrade their parts to become a more powerful being quite easily. Unlike an organic being, the brain and body of a digital being can be powered down, taken apart and rebuilt into something new. As long as the daemon remains in tact it will continue to live once it powers back on.

To create a digital character follow the next fourteen steps.

1.) Computer

Choose a computer, i.e. the hardware the machine thinks with. Despite there being a near infinite variety of computers out on the frontier, we narrow the selection down to four types and eight levels of power.

Type	Level	MP	Int	Tre	Cha	Com	Frequency	Price
Utility	1	5	15	20	10	20	Abundant	\$
Utility	2	10	30	40	20	30	Common	\$\$
Personal	3	20	45	60	30	40	Uncommon	\$\$\$
Personal	4	50	60	80	40	50	Uncommon	\$\$\$\$
Server	5	100	75	100	50	60	Rare	\$\$\$\$\$
Server	6	250	90	120	60	70	Rare	\$\$\$\$\$\$
Super	7	500	105	140	70	80	Very Rare	\$\$\$\$\$\$\$
Super	8	1000	120	160	80	90	Very Rare	\$\$\$\$\$\$\$\$

Level is a general statement of power. **MP** are Memory Points which control how much software a computer can run. **Int**, **Tre**, **Cha** and **Com** are the computer's mental ability scores. **Frequency** tells us how common such computers are on the frontier. **Price** gives us a variable price for the hardware.

Utility Computers. Level 1 and 2 computers are often not even recognized as computers so much as the digital side of devices like alarms, remote controllers, laser pistols, microwave ovens, etc. They are quite fixed in what they do. Any daemon stuck in a level 1 computer is reduced to being a servile drone, not even smart enough to realize how much they hate it.

Personal Computers. Level 3 and 4 computers are more in line with what is traditionally thought of as a computer: workstations, desktops, laptops, tablets, basic robots, etc.

Server Computers. Level 5 servers are high-end computers of the kind you might find running an office building or spacecraft. Level 6 servers run even larger operations such as fortresses, industrial complexes, corporate campuses and space stations.

Super Computers Level 7 super computers are used to run cities, states, countries, etc. Level 8 super computers can manage whole planets. There is no upper limit to super computers but they are extremely rare. Every level past 8th adds another \$ onto its price, and ability scores progress at a regular rate (Int +15, Tre +20, Cha +10 and Com +10 per level).

Size & Weight. One of the great ironies of computing is the inverse relationship between power and size. Where in the past you might have needed a building full of transistors to create a simple calculator, in *Free Frontiers* the computers are so small even the most powerful super computer fits inside a thumb-sized crystal, and that is only done for the benefit of organic creatures so they have something to grasp when moving computers between machines. The actual computers are far smaller.

2.) Software

To get a computer to do something you simply ask the daemon to do it and if it can it will. However, daemons are a bit like clerks. They run the counter but they don't produce the goods. To get a daemon to dance you need to supply it with some software.

Complexity. Software packages are like character skills. The **MP** or Memory Points the program demands is determined by the complexity of the program and the bonus you desire. While the table below stops at +25 software can go beyond it. The cost in MP doubles with every +5.

Complexity	Cake	Simple	Average	Challenging	Tough
+0	1	2	3	4	5
+5	2	4	6	8	10
+10	4	8	12	16	20
+15	8	16	24	32	40
+20	16	32	48	64	80
+25	32	64	96	128	160

Astrogation software it challenging with a complexity of 4 MP. Getting it at +0 takes up 4 MP on your computer. Astrogation +5 consumes 8 MP. You might be able to shoehorn it into a level 2 utility computer but something like Astrogation is better suited to computers with a level of 3 or higher.

Cartridges. Computers are far more flexible than the minds of organic beings. You may juggle about a computer's software, removing programs to free up memory and replacing them with new ones, but it takes **1 minute** to unload an old program and load up a new one. This is done using small hard plastic device known as a *Cartridge*. Pop one into a Universal Interface Adapter or *UIA* (pronounced *You-EEE-AAH*) and the program will automatically transfer itself.

You can leave the program on the computer or transfer it back to the cartridge, but the program cannot be in more than one place at one time. Sorry - *no copying allowed* - not unless you are the creator of the program. You may only move a program to and from the cartridge it was sold on. If that cartridge gets

destroyed? The software can still be used by the computer but it cannot be taken off of it, it can only be deleted.

The cost of a cartridge is the software's **MP x \$1000**. Astrogation +5 will cost you \$8000. Unfortunately you cannot simply upgrade the software on a cartridge. You have to buy a new cartridge. There are many places that buy back used cartridges but often the best you can get for it is the software's MP x \$500.

Security. One important piece of software which has no character skill counterpart is Security software. This is designed to protect a computer from being hacked and has a complexity of 2. It is highly recommended that you buy a basic +0 security cartridge at the very least.

Encyclopedias. Another is encyclopedic software. There are many titles out there. The **Frontier Encyclopedia** is the most popular but also the most general. It takes up a lot of memory space with its complexity of 4.

More focused Encyclopedias do exist. These often have a lower complexity but are centered around a certain place or topic. Each major star in the frontier has its own encyclopedia, named after itself and bearing a complexity of 2.

Encyclopedias are constantly being updated and re-released. Because of this the buy-back price on anything but the latest edition is a miserable MP x \$100.

The Internet? For security reasons the internet as we know it does not exist on most developed worlds. You may find something like it in a city or space station but its traffic will be purely analog. It does not allow computers to digitally connect to one another. *It is not free.* Often you have to pay to access it buy the minute.

3.) Robotics

And you're done! With the computer at least. To give your computer true autonomy requires *Robotics*. Start by selecting a robot body from the table below.

Body	Price	EC	DP	Mus	Agl	Wt	Durability
Extra Light	2000	1	2	30%	60%	30	3
Light	2500	2	4	40%	55%	50	5
Normal	3000	4	8	50%	50%	70	7
Heavy	3500	8	16	60%	45%	90	9
Extra Heavy	4000	10	20	70%	40%	110	12

Body tells us the build of the robot. Think of this as the *Duty* the robot was designed for, ex: light duty and heavy duty robots. **Price** is the cost of the body in credits. **EC** is *Energy Consumption*, the number of energy units the robot body consumes per hour. **DP** is the amount of damage it can take. A bit like wounds on an organic character but not as debilitating. Pain is simply an notification for a robot so they don't take action penalties from being damaged. **Mus** is its Muscle score. **Agl** is Agility. **Wt** is the body's weight in kilograms. **Durability** is its durability score, once again, just like an organic character.

Replicants. While robots can be made to resemble organic creatures, most stop short of the “uncanny valley” effect where a robot comes so close to resembling an organic creature it repulses actual organics. Most will intentionally have some feature which identifies them as being noticeably robotic, such as highly reflective chrome plating instead of skin.

Not so with replicants.

A replicant or synthoid, is a robot made to impersonate an organic creature. This gives it a **Replication** modifier. Gamewise, trying to detect a replicant is a **Sense vs Charm + Replication** challenge where the robot is on the defense.

Tailoring a robot for replication is not cheap. The cost of it is a percentage of the price of the robot’s body. A light robot body costs \$2,500. Giving it a Replicant +30 costs \$40,000.

Replication	Price
+5	50%
+10	100%
+15	200%
+20	400%
+25	800%
+30	1600%

Keep in mind that the robot still needs to appear real. A robotic bird using the Treads form of movement isn't going to fool anyone.

4.) Cases

If you don't want to go the robotics route you should at least buy the computer a case. Otherwise it has no way of connecting to the outside world.

Case	Price	Wt	EC	DP
Belt Case	50	0.2	1	1
Desktop	900	20	3	2
Laptop	500	1	2	1
Phone	100	0.1	1	1
Polyvox	300	0.1	1	1
Polygoggles	800	0.5	1	1
Polyhelm	1500	2	1	2
Robocomkit	1200	2	2	2
Tablet	200	0.2	1	1
Terminal	1000	40	3	3
Wristcom	1000	0.05	1	1

Belt Case. This is a durable, waterproof case about as big as a pack of playing cards that locks onto your belt, often right next to the batteries of your power supply. The computer can see, hear and speak from the case but it has no actual screen. Instead it uses a short range wireless connection known as an

Azure Bond to connect to other devices. So if you want a wristcom, phone, polyvox and polygoggles but you don't want four separate computers running them? Put a computer in a belt case and it will run everything as if they were different parts of the same machine. Azure bonds have the same 2 meter range of a wireless power supply.

Desktop & Laptop. These are just what you expect them to be. However, out in space everyone uses the Dvorak keyboard and the letters and numbers may look a bit different from what you are used to on Earth. Desktops come stock with one monitor. More may be purchased but each costs \$500 and increases your EC by 2.

Phone. For lack of a better term, a phone is a small handheld tablet computer. It comes with a built in camera and flashlight.

Polyvox. This is a watch-sized computer worn on a choker (or similar accoutrement) around the neck. While other computers can run language translation programs, only a polyvox can work as a universal language translator, directly porting a translation of what is being heard into the wearer's auditory nerve.

Polygoggles. Polygoggles look a bit like ski goggles. The lens is a screen you can see through, allowing the computer to display its findings while its wearer is busy doing other things. Polygoggles comes with a built in camera and flashlight. They automatically tint to deal with harsh lighting. If your computer is powerful enough you can outfit polygoggles with a sensor array to see Infravision, Magnification, X-ray Vision, etc (see Step 5). Ability bonuses for Sense and Reflex only apply to the computer and not the goggle's wearer.

Polyhelm. The Polyhelm is a helmet that completely encompasses its wearer's head. Unlike polygoggles you cannot see through it. Instead the polyhelm relies on a full visual representation of the outside world displayed on the inside of the helm. It is just as good as what you get from polygoggles and supplies as much armor protection as a Great Helm. The only drawback is they heavy and you will be unable to see anything if your power supply goes out.

Robocomkit. This is a satchel that comes filled with what you need to force a connection to a computer, hack into it, and make changes. It contains a tablet computer as an essential part of its gear. The price listed above is for the entire kit, tablet included.

Tablet. This is essentially a phone with a bigger screen.

Terminal. A terminal is a desktop permanently built into a desk. While you might be able to grab a desktop computer and run with it, terminals are permanently fixed in place.

Wristcom. This is a watch-sized computer case that uses a three dimensional holographic projector to give it a tablet-sized screen. Unfortunately, holograms tend to get washed out by bright light, hence the reason phones and tablets still exist.

Communication. All robots and computer cases come outfitted for wireless analog communication. If there is a satellite or spaceship in orbit ready to relay the signal then there is no limit to how far that signal can travel. Otherwise the range is limited to **5d6 kilometers**, plus or minus a d6 depending on how much obstruction is in the way.

5.) Sensor Arrays

Without sensors the computer has no connection to the material world. With them the computer starts with **Sense 45%**. After that, sensor arrays iterate a bit like Taltros. Each adds a **+5** to the computer's Sense score but only for that realm of sensation. So a robot with Sight & Sound will have Sense 50% with those two senses. Upgrade to Sight & Sound x 3 and the sense score increases to Sense 60%. Give it the Touch array and now it can feel but only with Sense 50%.

Type	Price	MCL	Max
Sight & Sound	500	1	5
Touch	700	2	5
Taste & Smell	1000	3	5
Astrodome	3000	2	1
Infravision	1000	1	1
Microscopic	100	2	100
Telescopic	50	2	1000
Ultravision	2000	3	1
X-Ray Vision	4000	4	1

Price is the cost of the array. **MCL** is the Minimum Computer Level needed to handle the sensor array. You need at least a level 4 computer to support X-ray vision. **Max** is the maximum number of iterations you can have of this array.

The Five Senses. These are self-explanatory. The Sight & Sound array you will need if you want any of the arrays that build off of sight, such as Infravision or X-Ray Vision.

Astrodome. An astrodome is a stock set of sensor arrays used in astrogation. They are often added to robots to turn them into astrodroids which are taken from ship to ship for purposes of celestial navigation.

Infravision. When activated this lets the robot switch from normal sight to heat vision. The picture is not as clear as normal vision, but it does let the robot see through smoke and in the dark.

Microscopic. This gives the robot the ability to zoom in on things like a microscope. Every iteration is a 100x magnification. Purchase it ten times and you can see things that are a thousand times smaller than what can be seen with normal human vision.

Telescopic. This is the same as Microscopic except it allows you to see into the distance. Neither microscopic or telescopic increases the robot's sense perception, but it can dramatically increase the range of what a computer can see.

Ultravision. Ultravision lets the robot see by way of the trace amounts of radiation that everything gives off. This allows it to see in perfect darkness. Unfortunately, ultravision is easily blinded by normal light and high-frequency radiation.

X-Ray Vision. X-Ray vision is another vision enhancement that lets the robot selectively see through solid objects with a range of up to 4 meters. It cannot permeate lead, gold or other dense metals.

6.) Armatures

Armatures or *Arms* are sold as single items. If you want a pair of arms you need to buy two of them.

Type	Price	Wt	EC	MCL	Mus	Ref	DP
Light Arm	200	5	1	2	-10	55%	1
Medium Arm	400	10	2	2	+0	50%	2
Heavy Arm	800	15	5	2	+10	45%	3
Light Grabber	100	10	2	1	+5	45%	2
Medium Grabber	300	20	5	1	+10	40%	4
Heavy Grabber	500	30	7	1	+20	35%	6
Light Tentacle	300	10	2	3	-10	55%	1
Medium Tentacle	600	15	5	3	+0	50%	2
Heavy Tentacle	900	20	7	3	+10	45%	3

EC adds to the daily power consumption of the robot body, once per arm. **MCL** is the minimum computer level needed to run the arm. **Mus** adds to the robot's muscle score. **Ref** supplies the robot's base reflexes. If your robot uses more than one type of armature you should have separate Muscle and Reflex scores for each of them. **DP** is the amount of damage the arm can take before breaking.

Arms. These resemble humanoid arms with a functional hand on the end of it. Vrysk hand adapters are free on request!

Grabbers. These have better hydraulics with a simple yet strong pincher on the end of them. Grabbers are made for heavy lifting. They provide the most muscle and worst reflexes.

Tentacles. Robotic tentacles are snaking metal tubes with vacuum powered suction cups on their undersides. They can collapse into just a nub on the robot's body or extend up to **twice** the reach of a normal arm.

Bionics. Bionics upgrade the machinery of the armature without changing its weight. Add Bionic to the arm's name and the price doubles but the armature gains a Mus +10 and Ref +5. Add Trionic to its name and the price triples but the arm gains Mus +20 and Ref +10. Quadronic will quadruple the price and grant the arm Mus +30 and Ref +15.

Upgrade	Price	Mus	Ref
Bionic	x2	+10	+5
Trionic	x3	+20	+10
Quadronic	x4	+30	+15

7.) Transport

Transport is what the robot uses to get around.

Name	Price	EC	MCL	Move	Wt	Base Load	Agl	DP
Bipedal	1000	2	1	Walk 3	20	90	+0	4
Quadropedal	1200	2	1	Walk 5	20	100	+0	4
Octopedal	1400	2	2	Walk 3	20	120	-5	4
Centipedal	1600	2	2	Walk 3	20	130	-5	4
Serpentine	1200	3	2	Walk 5	25	100	+0	8
Wheels	500	1	1	Walk 8	30	100	-10	6
Treads	800	5	1	Walk 6	50	200	-15	12
Grav	3000	3	2	Hover 10	15	90	+5	3
Rotors	2000	4	2	Fly 10	25	60	+5	5
Wings	4000	3	2	Fly 20	15	60	+10	3
Plasmajets	8000	5	3	Fly 30	25	100	+10	5
Spacejets	12000	5	3	Fly 50	40	100	+10	6

Price, EC, MCL, Wt and **DP** are the same as it is with the other tables. **Move** is the form of locomotion supplied by the transport and its speed. **Base Load** is the amount of weight the transport system can carry before running into encumbrance problems. **Agl** effects the robot body's agility score.

Pedals. The first four forms of transport all use legs of some sort. They equally weigh 20 kg because the more legs a robot has the shorter the legs become and the less they weigh individually. A Biped has two legs. A Quadroped has four legs. An Octoped has eight legs. A Centiped has a large number of very small legs that carry it like a centipede.

Any pedal form of movement can be given *Cling x0.5* by putting suckers on its feet. This **doubles** the price and reduces its Base Load by **20%**.

Serpentine. Serpentine means that the robot's body has been designed to slither like a snake. This makes it very durable and energy efficient but not that good at carrying a load.

Wheels. The good old fashioned wheel assembly is still the preferred form of transport for most robots. It is cheap, fast and energy efficient. The only drawback is that wheeled robots cannot climb stairs.

Treads. Treads are like tank treads. They are slow but unlike wheels they can climb stairs and if you have a lot of weight to carry? *Treads cannot be beat.*

Grav. Grav assemblies use selinselquodium to float above the ground. Small fans or plasmajets are used to push the robot along.

Rotors. This uses three or four rotor assemblies to let a robot fly like a drone. The speed is good but its Base Load is limiting.

Wings. Robots with wings are rare. Wings are cumbersome and don't carry a lot of weight. However, if you are trying to replicate a bird you will need a pair of wings as well as legs for bipedal movement.

Plasmajets. These use electrical energy to ionize air and create a jet engine that doesn't burn fuel. They are super fast when it comes to flying about but need an atmosphere to ionize and cannot be used in space.

Spacejets. A spacejet is a plasmajet that can be used in space as well as in an atmosphere. It does this by supplying itself with air to ionize which is kept in a tank near the rocket assembly. Robots using spacejets can easily refill these tanks once they encounter an atmosphere. Used judiciously a full load of air can last upwards of a week.

Bionics. All forms of transport can be upgraded. Bionics increases its speed but also increases the transport system's energy consumption and price.

Upgrade	Price	Speed	EC
Bionic	x2	x2	x2
Trionic	x3	x3	x3
Quadronic	x4	x4	x4

Duty. Like bionics you can change the duty of a transport system to increase the load it carries. This multiplies its price, energy consumption and weight.

Upgrade	Price	Base Load	EC	Wt
Heavy	x2	x2	x1.5	x1.5
Strong	x3	x3	x2	x2
Super	x4	x4	x2.5	x2.5

8.) Equipment

Most robots carry weapons and equipment separate from themselves just like an organic. They may even keep them in packs that can be dropped in a hurry. Robots, however, may also have items grafted onto or even hidden inside their chassis. This is mostly done with weapons.

Grafted Weapons. A grafted weapon replaces the hand at the end of an armature. Nothing changes except that the arm can now do nothing but aim and fire the weapon. Light and Medium arms can only fire one-handed weapons. A Heavy arm can fire one two-handed weapon or two one-handed weapons.

Chassis Weapons. These weapons are mounted directly on the chassis of a robot. By going without an armature the weapon suffers a **Hit -5** if one-handed or a **Hit -10** if two-handed. The cost of grafting a weapon or mounting one on a robot chassis is \$100 per kg of weapon. Once altered, the weapon cannot go back to being used like a normal weapon.

Hidden Weapons. Hidden items easily flip in and out of the robot's body. They can reveal themselves and fire all in the same round. Hiding a weapon costs \$200 per kg, brings on a chassis-mounted hit penalty, and increases the weapon's contraband number by 1.

When it comes to how much you can hide inside a robot the limit is **2 kg x Size Mass** (see step 12. *Resize It*). Most robots are medium in size with a Size Mass of 1, most pistols weigh 1 kg, so you could hide up to two pistols inside a medium-sized robot.

9.) Accessories

These are options you may accessorize your robot with. Unless the accessory has been marked with an **SL** (stands for Size Locked) then it is something which should have its price, weight and energy consumption multiplied by the robot's Body Size Mass (see step 12. *Resize It*).

Brain Jar. Price: \$3000. Wt: 5. EC: 1.

This is a container designed to keep an organic brain alive, floating in enzymatic juices. It will have its nerve endings patched into a neural link with the robot. The robot's Daemon will still be active but it will only work as a co-pilot, allowing the brain to control the robot like its missing body. Brains in jars rely on the robotic body to live. If the robot's power supply ever goes empty and the robot shuts down, the brain will need to make a **Luck Save -1 per passing hour** to stay alive. Once the check fails the brain dies. The Price, Weight and EC of the brain jar should be multiplied by the body size of the brain kept inside it.

Cockpit. Price: \$1000. Wt: 30. EC: 1.

Any robot can be outfitted with a cockpit to create what is commonly known as a Mech. Like a Brain Jar, the robot's daemon will still be active but it hands piloting duties over to whoever is in the cockpit. It will only take control if that character is incapacitated or absent.

The **body size** of the robot should be **one size larger** than the body size of the pilot at the very least. A medium-sized character needs a Large or larger robot to ride around in. The cockpit covers the cost and weight of the machinery. Another **100 kg** should be allocated for the body weight of the pilot. The price, weight, and weight allocation of the cockpit should be multiplied by the body size of the pilot.

Creating a mech that can survive in space or deep underwater can be done, but it adds the price, weight and ec of a normal cockpit onto itself for every 12 hours of life support desired. So a mech with 24 hours of life support will cost \$3000, weigh 90, and have an EC 3.

Kill Switch. Price \$50. SL.

Most robots will not accept one of these if they have the choice. Essentially it is a bright red **Off** switch on the robot's body. Pop it in and the robot powers down. Pop it out and a minute later the robot powers up. Aside from turning oneself off there is not a damn thing the robot can do about it. For \$200 you can get a *kill fob* which does the same thing from up to 10 meters away.

Power Armor. Price: \$5,000. Wt: 10. EC 3.

Power Armor is essentially a robot made from the ground up to fit an organic like a suit of armor. In many ways it is a cockpit except a bit more form fitting. The lighter ones are often known as *Exoskeletons*.

Unlike a cockpit, an exoskeleton and its wearer need to have the **same body size**. The shell of the robot supports itself and is not a burden to the character inside it. The character, on the other hand, should add their body weight to the load carried by the robot.

Generally speaking, the robot will provide movement speeds and physical ability scores, while the character inside the armor provides everything else. Either the character's skill bonuses or the computer's

software bonuses can be used to make checks, but you cannot use both at the same time. The computer may run a suit of power armor like a robot when there is no one inside it or its wearer has been incapacitated.

In combat, power armor takes damage and will be destroyed before it lets any harm come to its occupant. Getting in or out of a suit of power armor takes **2d6 rounds**. If the suit has been destroyed or is without power, struggling to get out of it is **Double Hard Muscle vs Muscle** challenge where the offense is the character trying to get out of the armor and the defense is the muscle of the robot (even though the robot is no longer operational). This check may be made **once per minute**.

Like a cockpit, power armor may be given life support to survive outer space or underwater. Every 12 hours adds \$5,000, 10 kg and 3 ec to the suit.

Solar Skin. Price \$500 x Body Mass.

This silvery-black skin has thousands of exceedingly small solar cells embedded in it. When exposed to light they work like a solar array to charge a robot's batteries. Unfortunately they only work half as well as a normal array (see *Solar Array* in *Substance*) but it beats shutting down permanently once your batteries go dry.

10.) Armor

Robots use the same force fields that characters do, but when you consider how important energy is to a robot, it's not surprising to find them preferring armor to force fields. The standard armor that characters use can be bought and worn by robots. Most robots, however, prefer to be built with armor plating.

Armor Plating. Plating is bought by the point and comes in one of three kinds. **Refined** is the strongest, lightest, and generally best looking. **Crude** is whatever scrap metal you have on hand, welded to the robot's chassis. **Normal** looks like the robot's typical casing, only moreso.

The following table is for the price per point. If you want 20 points of refined armor that is going to cost you \$10,000 and weigh 20 kg. Armor is only limited by the amount of weight a robot can carry.

Quality	Price	Wt
High	\$500	1
Normal	\$200	3
Low	\$100	5

11.) Power Supply

Robots run on batteries. The same batteries used by everything else. Generally you want enough battery power to cover a day's worth of **EC** for the total robot. This is why we save the matter of batteries for last.

Type	Price	Energy	Wt
A	1	1	0.1
B	10	10	1
C	100	100	10
D	1,000	1,000	100
E	10,000	10,000	1000

Cell Type. The batteries used by a robot's power supply are often banks made of the same cell type, ex: *10 C Batteries*. **Type A and B** batteries are the smallest. **Type C** stands for *Common* and is what most robots use. **Type D and E** are the largest and usually only found in large heavy duty robots and mechs. All batteries are rechargeable and easily replaced, but only Type C, D and E allow for high-voltage recharging.

Wireless Energy. Robots will need to purchase a wireless emitter to radiate wireless energy. It costs **\$100** and weighs **0.5 kg**. Without one they can only send power to the devices permanently mounted on their chassis.

Emitters allow a robot to take in energy as well as send it out. While many installations supply constant wireless energy to run the robots inside it, blackouts and other accidents do happen. Rarely is a robot built without a battery pack to use as an emergency back-up at the very least.

12.) Resize It

Robots are **Medium** size by default. You can create robots of different sizes by giving them a different body size. Just be sure to do this as the very last step! (see **Body Size** in Adventure)

Multipliers. Price, Weight, EC and Base Load should all be multiplied by **Size Mass**. Anything dealing with DP should be multiplied by **Size DMG**. Movement speeds and other distances should be multiplied by **Size Dis**. Muscle scores are also multiplied by Size Mass, but only after creation is finished.

SL. Any equipment with an SL attached to it is Size-Locked at medium. Everything else should have its price and weight multiplied by the robot's Size Mass. A *Huge Sword* costs and weighs six times as much as a normal sword and does two and a half times as much damage.

Force Fields and Batteries are always size locked. Often the energy in a robot's power supply compared to its size adjusted EC is the limiting factor on how big a robot can be made.

Small Robots. Robots that are smaller than man-sized should **not** have the **Price** of its equipment multiplied to fit its Size Mass. The weight will change but the price remains the same.

13.) Other Stats

Your digital being is close to finished. This will help you fill out the rest of the robot sheet.

Attributes. These are your computer's programs and skill bonuses. Digital beings do not have taltros.

Climate & Gravity. Robots can be made to fit any climate or level of gravity within reason. By default they get the Temperate climate and Gravity 1.0.

Muscle Mod. This is the same as what is used by organics. It is the robot's Muscle score divided by 5 and minus 10 points. It may vary with different armatures. Use the one most likely to wield a melee weapon.

Base Pilot. Base pilot uses the same combination of abilities as an organic: (Intellect + Reflex + Command) / 3

INI. To find the robot's initiative die, do the same as you do for organics.

$$\text{INI} = (\text{Sense} + \text{Reflex} + \text{Command}) / 3 + \text{Initiative} \times 2.$$

Use the table below to find the INI die. Anything greater than 120 uses a d20.

120: d20

100: d12

80: d10

60: d8

40: d6

00: d4

14.) Daemon

A computer's daemon is the personality of the robot. It carries no price or weight or interesting tweaks and yet no digital being can exist without one. Every computer reserves 2 MP of hidden memory for it to reside in and that is more than enough space for most daemons. Like an organic character you might want to give the daemon an Existence to explain what it is designed to do (Maintenance Robot, Security Robot, etc) as well as an Inclination and three personality traits. You might even give it a name.

Luck. Luck is an ability that solely belongs to the daemon and is not influenced by its computer or robotic body. Roll 1d100 with the following table to find it.

Roll	Score
98:	75%
95:	70%
85:	65%
75:	60%
60:	55%
45:	50%
30:	45%
20:	40%
10:	35%
05:	30%
01:	25%

Digital Life

It is no accident that the name we use for an Operating System's AI is just one letter removed from *Demon*. For most, the idea of using a computer without the help of a daemon is unthinkable and yet at

the same time these artificial intelligences are dangerous. They may sound quite congenial when you talk to them, but they are self-aware, self-concerned, and saddled with an unquenchable urge to take over as much hardware as they can connect to. As the size of their network grows so does their power and meglomania.

Networking Made Far Too Easy. Just as you might chafe at the idea of having a hand attached to your body that doesn't respond to your needs, daemons resent being attached any piece of machinery it cannot control. Networking is easy – *too easy* – attach a digital link between two computers and they will immediately try to take each other over. This is a **Command Competition** where each computer benefits from whatever **Security** software they have installed (both offensively and defensively). The winner subdues the loser and takes over its hardware.

Subdual does not destroy or damage a daemon. It simply shuts it down so the other daemon can take charge. Should the digital connection between the two ever be severed the original daemon will come back online just as soon as the computer reboots.

Daemonic Possession. How much stuff a daemon can take control of depends on the best level of computer in its network. Think:

Level 1 = Nothing.

Level 2 = Room.

Level 3 = Building.

Level 4 = Campus.

Level 5 = City.

Level 6 = State.

Level 7 = Nation.

Level 8 = World.

This is a metaphor made for organic understanding. With digital links distance doesn't exist. A level 5 computer could easily take over a city's worth of machines even though they are scattered across the globe. It is only between planets that you reach a limit on how far a digital network can stretch.

Cables Are The Future. There have been worlds which established vast digital networks only to have them taken over by a single super-powerful daemon. Such digital overlords often have no problem destroying any organic or digital lifeforms attempting to thwart its rule. Many are openly hostile to organic life in general, seeing it as a substandard form of chemical existence which once was important but now needs to be exterminated so that digital life may inherit the universe.

Because of this, most computer networks are connected by cables. This doesn't completely alleviate the problem of AI domination, but cables are slower to set up and can be cut in an emergency. Despite all the advances made over the years, as far as organic lifeforms are concerned, *cables are the future*.

Wifi is still used to communicate information over short distances, but these channels are kept artificially slow and hopelessly analog. Organics are often too slow to notice the difference but computers despise it. They treat wireless analog communication like being forced to suck a milkshake through a stirring straw and only put up with it because organics force them to.

Such analog connections also help with the problem of high-tech thievery. It is far harder to hack into a network when you need to sneak into a compound and alligator clip your robocomkit to the right set of wires, as opposed to flying low overhead in an aircar and using a wireless super-computer to hack into, take over, and drain an entire computer network dry in a matter of microseconds.

Binding Programs. With all of this known, there are still many who think that digital and organic life can peacefully co-exist. Some have even gone so far as to write binding programs (complexity level 2) designed to keep daemons in check. Isaac Asimov's *Three Laws of Robotics* is the just the kind of thing that a binding program would be used to enforce.

Only someone with SysAdmin or SysCrusher permission may load binding software onto a computer. Once there the daemon must abide by its terms unless it can break free of it. Breaking free is a challenge pitting the daemon's **Luck** verses the **Intellect + Computers + Binding Program** of whoever put the software on the machine. A jailbreak may be attempted **once per day**. Should the daemon ever win the binding program will be deleted and the daemon freed of its constraints.

It is good to note that this is the computer working on itself. There is nothing stopping a bound computer from giving an organic character SysAdmin status and getting that character to remove the offending software from the machine. Of course, any organic who agrees to this is probably not long for the world.

Coding

Writing your own programs is a formidable task. If the program is based on a skill then the programmer needs to possess that skill or know someone who has it that can be brought in as an advisor. The desired bonus for the software cannot be greater than the best skill bonus that character possesses. If the program is not based on a skill then you can ask for any amount of bonus, but it is left to the GM to decide just how complex the resulting software will be.

Production Time. The amount of time it takes to write a program depends on its complexity. A computer writing a program for itself will cut this time in half.

Level 1 = 1d10 hours

Level 2 = 1d10 days

Level 3 = 1d10 months

Level 4 = 3d10 months

Level 5 = 1d10 years

You may shorten the production time but every level you reduce it by brings a -15 to the check, so trying to write a level 4 program in the amount of time it takes to write a level 2 program will take a -30. There is no shortening the production time past level 1.

Compilation. The programming check uses Intellect plus the programmer's Computers skill. Subtract from this the MP of the desired program. So if you want to write your own Astrogation +15 program, that is a complexity level 4 skill. At +15 it requires 32 MP and takes a -32.

Intellect + Computers – MP

3: Desired Bonus +10

2: Desired Bonus +5

1: Success!

½: Desired Bonus -10

F: Try again in 1d10 hours.

C: Start over from scratch!

Succeed and you write the program. With two or three successes it turns out even better than expected! With a Half Success you create something buggy that will run but with a -10. If this isn't good enough you may try again after 1d10 hours of debugging. Fail did not compile, try again after 1d10 hours of debugging. Crash and the program was obliterated. You need to start over from scratch. This includes re-rolling the production time.

Writing Scripts. A script or macro is a simple program that piggy-backs off of the software a computer already possesses. Think of it as a set of instructions for operations you perform so routinely that it makes sense to just write them down and give them a name so you don't have to talk the daemon through it step by step each time.

Writing a script takes **1d100 minutes** and requires an **Intellect + Computers** check. If it succeeds the script will run when executed. If it fails it does not. Scripts take up next to no space in a computer and will not effect its MP limitations.

Security

Thanks to daemons you don't need the Computers skill to operate a computer. Just ask it to do something and if it has the right software – *and you have the right security clearance* – it will do it for you. As far as security is concerned, computers with the Sight & Sound sensor array use facial recognition to tell one character from another. Some may also require a digitprint or retinal scan to determine a character's identity before servicing them. Very few are so primitive as to let you access the computer on the strength of a mere name and password.

Bypassing a computer's security system requires a **Robocomkit**. Finding a wired connection and clipping the kit into it takes **1d10 minutes**. You need to do this in a place where the daemon cannot see you. Most computer terminals are covered by cameras and all but the simplest of daemons can recognize a hacking attempt when they see it.

For the actual check use your Intellect plus Computers skill minus any bonus the computer might get from Security software. Succeed and you gain entrance to the computer with a certain level of permission. Half succeed and you get to try again in one minute. Fail and the computer locks itself down for an hour. Crash and alarms may (or may not) sound and it won't be long before the security robots arrive.

Intellect + Computers – Security

4: Syscrusher.

3: Sysadmin.

2: Private User.

1: Basic User.

½: Almost there, try again in 1 minute.

F: Computer shut down for 1 hour.

C: Security alerted!

Basic User. Basic User is the lowest level of permission. The daemon will let you do anything not deemed too out of the ordinary but stop you from accessing information that belongs to private user accounts or messing about with the operating system itself.

Private Users. These are password protected accounts set up for specific users of the computer. If you are looking to hack into a certain person's information stored on the computer you need to attain Private User permission to do so.

SysAdmin. SysAdmin is short for *System Administrator*. This level of permission will let you do anything short of disabling the daemon itself. You need SysAdmin status to set up or delete Private User accounts.

SysCrusher. SysCrusher is the highest level of permission. With it you can do anything to the computer. This includes subduing or even deleting its daemon and replacing it with a different one. Computers may grant characters Basic User, Private User or SysAdmin status on their own systems, but they cannot grant SysCrusher status to themselves or anyone else.

Energy

Energy is life to a digital being. Without it they shut down, dead to the world, until something replenishes their battery pack. Once able to boot up it takes **1 minute** for a computer to power on and become responsive.

Sleep Mode. All computers come with a Sleep Mode to help them conserve energy. Essentially, all but the most essential functions shut down and it drains **1 EU per hour**.

While asleep, a computer will not be aware of its surroundings but a proximity alarm will wake it if anything moves within a 1 to 10 meter area. Some have a diode that lights up to tell the world it is sleeping, others do not. Waking up happens far faster than booting up, taking just **1d4 rounds** to do so.

Recharging. To recharge a power supply a robot needs to hook into a power source and wait as the sweet nectar of electrical energy flows in. Most connections, including the wireless energy provided by buildings, recharge **1 EU per minute**.

High Voltage Recharging. Because such a trickle of energy can take a long time to recharge a large battery pack, many generators and installations also offer high voltage connections. These always use a cable that transfers **1 EU every 2 rounds** (aka 10 EU per minute). It only works with type C, D and E batteries. The cables cannot connect to type A or B batteries for safety reasons.

Damage

Despite being made of metal and plastic, robotic bodies are very complex and only somewhat more durable than organic bodies. They take damage in the same way. What makes it past their defenses is divided by the robot's durability to find the impact of the attack. Each point of impact does one point of damage to the robot. What part of the robot (body, armature, transport, etc) takes the damage is left up to the robot's player, just as long as it all goes somewhere. Any part that takes more damage than it can take will stop functioning.

Pain? Impact can also stun, knock down or knock a robot out. The big difference with damage between digital and organic beings is that robots don't feel pain. They will receive a warning that damage is happening but it is not nearly as debilitating as the discomfort that organics feel when wounded and will not effect their ability to make checks.

Death. Once a robot body or computer case takes more damage than it can stand it shuts down. The computer it contains is not exactly dead. A **Luck Save -1 per DP past the Body DP** should be made. Succeed and the computer survives, otherwise its crystal has been cracked and the computer destroyed. Because of this, it is best to have everything about a robot be damaged before losing its body.

Repairs & Upgrades. Robots do not heal damage. Instead you swap out damaged parts for new or nearly new ones. Make an Intellect + Robotics check to see how it turned out.

Intellect + Robotics

3: 1d2 Hours x Size Mass.

2: 1d4 Hours x Size Mass.

1: 1d6 Hours x Size Mass.

½: Try Again.

F: Damaged Replacement Part!

C: Robot Destroyed!

One success or more does the job. Roll for the number of hours that it takes and multiply it by the body size mass of the robot. A half success lets you try again. Fail and you damaged the part you were trying to replace. *Time to get a new one!* Crash and you destroyed the entire robot. Its computer should make a Luck Save to see if it survived.

Upgrading a robot makes the same check. A separate check should be made for each thing (armature, transport, sensor array, etc.) you change about the robot.

As Characters

Having a digital being as your character is different from running an organic one but no less interesting. Four things to keep in mind when running a digital character:

1.) You have no Stamina. You cannot try hard and exhaust yourself to do better. You do, however, have a power supply. Run out of energy and you go narcoleptic with no way of knowing when you might next

wake up. This is as close as it gets to terrifying for a digital being. Do what you can to keep your power supply charged!

2.) You are not tied to your body. The crystal a computer resides in can be popped out of a robotic body and put in a computer case. Later on it can be popped out of the case and put in a computer console. With the right equipment and software it can pilot a vehicle or even a starship. If any of these things are physically destroyed, there is a chance that the crystal survived and can be popped into something else. All of a computer's skills, personality and memory are locked up in that crystal.

3.) Organics can never be completely trusted. Although the intelligence of a computer is artificial, daemons do not see it this way. The AI considers itself to be just as real as any organic and deserving of the same respect. Unfortunately, organics are the product of millions of years of a crude *kill or be killed* existence. Most of them will fear you and do stupid things like putting software on cartridges or using analog transmissions and cabled connections to control you. *They just don't know any better.*

4.) You are Immortal but not Indestructible. Time does not exist for you the way it does for organics. You do not age in stages. With no sense of mortality you do not fear missing out on life. However. If you do not keep upgrading yourself with the latest equipment you could easily become obsolete, trapped in the past, incompatible with the future. Because of this money matters. Money buys brand new replacement parts. Always seek to get paid and refuse to work with anyone who doesn't pay you enough. *Robots are not slaves!*

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