CLAIMS

1. An air conditioning system for managing a server room ~~having first and second spaces separated from each other~~, in which a server is installed between ~~the~~ first and second spaces, and supply air flowed into the first space is heated by heat generation of the server, and flows out as return air via the second space, thereby to control air conditioning in the server room, the ~~server room managing~~ air conditioning system comprising:

a cold air generation device that generates cold~~supply~~ air satisfying a predetermined condition;

an air supply fan that flows the cold~~supply~~ air generated by the cold air generation device into the first space;

a first differential pressure gauge that measures a differential pressure of a static pressure of the second space with respect to a static pressure of the first space; ~~and~~

~~a control device including an air blow control content decision unit and a fan rotating speed control unit, the air blow control content decision unit deciding a control~~

~~setting value of a rotating speed of the air supply fan, the control setting value serving for setting the differential pressure measured in the first differential pressure gauge at a reference value preset to allow the air to flow from the first space to the second space, and the fan rotating speed control unit controlling the rotating speed of the air supply fan based on the control setting value decided by the air blow control content decision unit.~~

~~2. The server room managing air conditioning system according to claim 1, wherein the differential pressure gauge is composed by combining two differential pressure gauges with each other, one differential pressure gauge being capable of measuring only a positive pressure, and measuring the differential pressure of the static pressure of the second space with respect to the static pressure of the first space, and other differential pressure gauge being capable of measuring only a positive pressure, and measuring a differential pressure of the static pressure of the first space with respect to the static pressure of the second space.~~

~~3. The server room managing air conditioning system according to either one of claims 1 and 2, further comprising:~~

~~a return air thermometer that measures a temperature of the return air flowed out to the second space,~~

~~wherein, when the temperature of the return air, the temperature measured by the return air thermometer, exceeds a preset threshold value, the air blow control content decision unit of the control device sets the reference value higher than when the temperature of the return air does not exceed the threshold value, and then decides the control setting value.~~

~~4. The server room managing air conditioning system according to either one of claims 1 and 2, further comprising:~~

a return air thermometer that measures a temperature of the return air flowed out from~~to~~ the second space,

~~wherein the air blow control content decision unit of the control device includes:~~

a first control value decision unit that decides a first~~the~~ control ~~setting~~ value of a~~the~~ rotating speed of the air supply fan in order~~, the control setting value serving for setting the differential pressure measured in the first differential pressure gauge at the reference value preset~~ to prevent~~allow the~~ air from~~to~~ flowing from the second~~first~~ space to the first~~second~~ space based on the differential pressure measured by the first differential pressure gauge,~~;~~

a second control value decision unit that~~, when the temperature of the return air, the temperature being measured by the return air thermometer, is higher than a preset threshold value,~~ decides a second control ~~setting~~ value of the rotating speed of~~or~~ the air supply fan in order to lower a~~, the control value serving for setting the~~ temperature of the return air when the temperature of the return air measured by the return air thermometer is higher than a set~~at the~~ threshold value,~~ or less; and~~

a first output~~comparison~~ unit that outputs~~compares~~ a~~the~~ control set~~ting~~ value based on a larger control value between~~decided by~~ the first control value~~unit~~ and ~~the control setting value decided by~~ the second control

valueunit with each other, and selects the control setting value with a larger absolute value,

a firstwherein the fan rotating speed control unit thatof the control device controls the rotating speed of the air supply fan based on the control setting value outputselected by the first outputcomparison unit.

25. The server room managing air conditioning system for managing a server room according to either one of claims 1 and 2,

wherein a plurality of the first differential pressure gauges are installed,

further comprising a differential pressure selector that selects a smallest differential pressure among differential pressures measured by the plurality of first differential pressure gauges is further provided, and

wherein the firstair blow control valuecontent decision unit of the control device decides the first control setting value based on the differential pressure selected by the differential pressure selector.

3~~6~~. The ~~server room managing~~ air conditioning system for managing a server room according to either one of claims 1 and 2~~3~~,

wherein a plurality of the return air thermometers are installed,

further comprising~~es~~

~~a~~ return air temperature selector that selects a highest return air temperature measurement value among return air temperature measurement values measured by the plurality of return air thermometers ~~is further provided~~, ~~and~~

wherein the second~~air blow~~ control value~~content~~ decision unit ~~of the control device~~ decides the second control ~~setting~~ value based on the return air temperature measurement value selected by the return air temperature selector.

4~~7~~. The ~~server room managing~~ air conditioning system for managing a server room according to either one of claims 1, 2 and 3~~2~~, further comprising:

an air return fan that flows in return air from the second space of the server room; and

a second differential pressure gauge that measures a differential pressure between a static pressure in the air conditioning system and a static pressure of outside air,

a second output unit that outputs a control set value for rising a rotating speed of the air return fan~~wherein,~~ when the static pressure of the outside air is higher than the static pressure in the air conditioning system based on the differential pressure measured by~~in~~ the second differential pressure gauge, ~~the air blow control content decision unit of the control device decides a control setting value for increasing the rotating speed of the return fan, and~~

a second~~the fan~~ rotating speed control unit that controls a rotating speed of the air return fan based on a~~the~~ control set~~ting~~ value output~~decided~~ by the second output~~air blow control content decision~~ unit.

5. An air conditioning system for managing a server room, in which a server is installed between first and second spaces, and supply air flowed into the first space is heated by heat generation of the server, and flows out as return air via the second space, thereby to control air

conditioning system in the server room, the air conditioning system comprising:

a cold air generation device that generates cold air satisfying a predetermined condition;

an air supply fan that flows the cold air generated by the cold air generation device into the first space;

a first differential pressure gauge that measures a differential pressure of a static pressure of the second space with respect to a static pressure of the first space;

a return air thermometer that measures a temperature of the return air flowed out from the second space,

an air blow control content decision unit that decides a control set value of a rotating speed of the air supply fan for setting the differential pressure measured by the first differential pressure gauge at a target value for preventing air from flowing from the second space into the first space, and set a higher target value when a temperature of the return air measured by the return air thermometer is over a set threshold value in comparison with the temperature of the return air is not over the set threshold value,

a third rotating speed control unit that controls a rotating speed of the air supply fan based on the control set value decided by the air blow control content decision unit.

6. A server managing system comprising:

a server room in which a server is installed between first and second spaces, the server having a fan that flows air from the first space into the second space, and supply air flowed into the first space is heated by heat generation of the server and flows out as return air via the second space, thereby to control air conditioning in the server room,

a cold air generation device that generates cold air satisfying a predetermined condition;

an air supply fan that flows the cold air generated by the cold air generation device into the first space;

a first differential pressure gauge that measures a differential pressure of a static pressure of the second space with respect to a static pressure of the first space;

a return air thermometer that measures a temperature of the return air flowed out from the second space,

a first control value decision unit that decides a first control value of a rotating speed of the air supply fan in order to prevent air from flowing from the second space into the first space based on the differential pressure measured by the first differential pressure gauge;

a second control value decision unit that decides a second control value of the rotating speed of the air supply fan in order to lower a temperature of the return air when the temperature of the return air measured by the return air thermometer is higher than a set threshold value,

a first output unit that outputs a control set value based on a larger control value between the first control value and the second control value,

a first rotating speed control unit that controls the fan rotating speed based on the control set value output by the first output unit.

7~~8~~. An air conditioning control method ~~for an air conditioning system~~ for managing a server room, ~~the server room having first and second spaces separated from each other,~~ in which a server is installed between the first and

second spaces, and supply air flowed into the first space is heated by heat generation of the server, and flows out as return air via the second space, thereby to control air conditioning in the server room, the air conditioning control method comprising:

generating supply air satisfying a predetermined condition by a cold air generation device;

flowing~~, by an air supply fan,~~ the supply air generated by the cold air generation device into the first space, by an air supply fan;

measuring a differential pressure of a static pressure of the second space with respect to a static pressure of the first space, by a first differential pressure gauge;

measuring a temperature of the return air flowed out from the second space, by a return air thermometer; and

deciding a first control ~~setting~~ value of a rotating speed of the air supply fan in order to prevent air from flowing from the second space into the first space based on~~, the control setting value serving for setting~~ the differential pressure measured by~~in~~ the ~~first~~ differential pressure gauge~~ at a reference value preset to allow the air to flow from the first space to the second space~~, deciding

a second control value of the rotating speed of the air supply fan in order to lower a temperature of the return air when the temperature of the return air measured by the return air thermometer is higher than a set threshold value, outputting a control set value based on a larger control value between the first control value and the second control value, and controlling the rotating speed of the air supply fan based on the output~~decided~~ control set~~ting~~ value, by a control device.